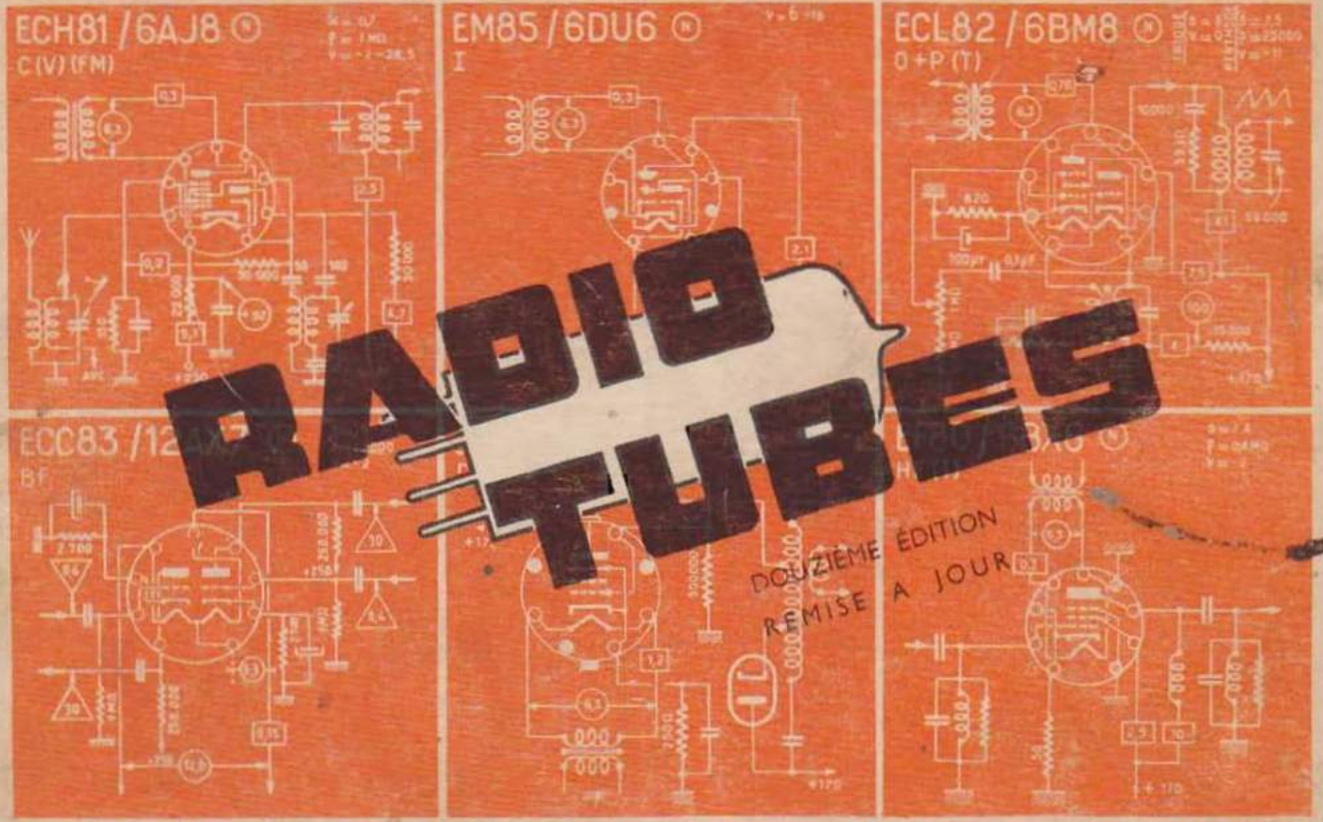
★ E. AISBERG ★ L. GAUDILLAT ★ R. DE SCHEPPER ★



RADIO TUBES

DOUZIÈME ÉDITION
REMISE A JOUR

SOCIÉTÉ DES ÉDITIONS RADIO — PARIS

4 revues françaises de réputation mondiale

TOUTE L'ÉLECTRONIQUE

Anciennement TOUTE LA RADIO

Revue mensuelle de technique expliquée et appliquée
Fondée en 1934

Directeur : **E. AISBERG**

Le numéro 2,70 NF

TÉLÉVISION

Magazine mensuel
fondé en 1939

Directeur : **E. AISBERG**

Le numéro 1,80 NF

RADIO CONSTRUCTEUR & DÉPANNEUR

Revue mensuelle
de pratique radioélectrique
Fondée en 1937

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Le numéro 1,80 NF

ÉLECTRONIQUE *Industrielle*

Revue bimestrielle de technique moderne destinée aux promoteurs et aux utilisateurs des méthodes et appareils — électroniques. —

Le numéro 3,90 NF

SOCIÉTÉ DES ÉDITIONS RADIO
9, RUE JACOB, 9
PARIS-6e (ODE. 13-65)

Imprimerie Desgranchamps - Paris

☆ E. AISBERG ☆ L. GAUDILLAT ☆ R. DE SCHEPPER ☆

RADIO-TUBES

CARACTÉRISTIQUES ESSENTIELLES ET SCHÉMAS D'UTILISATION

Essential constants and practical circuit diagrams

☆

Características esenciales y esquemas de utilización

Wichtigsten Charakteristiken und Schaltungs - Schemata

☆

Onmisbare Karakteristieken en gebruikschema's

SOCIETE DES EDITIONS RADIO
9, rue Jacob - Paris - 6e

PRÉFACE

RADIO-TUBES ne prétend pas remplacer les recueils de caractéristiques détaillées avec diverses courbes. Il est destiné à l'utilisateur des tubes électroniques et vise à lui en faciliter l'usage. C'est donc un ouvrage essentiellement pratique qui a sa place au laboratoire et à l'atelier.

Chaque tube est représenté par son culot vu par en dessous. Il est accompagné de ses **caractéristiques de service** essentielles, et les conditions normales d'emploi figurent dans un schéma-type où sont indiquées les valeurs des éléments principaux.

Les abréviations et signes conventionnels suivants y sont utilisés :

1. FONCTION (sous le nom du tube) :

BF - Amplification à fréquence acoustique;
D - Détection, démodulation;
C - Changement de fréquence, mélangeur;
HF - Amplification haute fréquence ou moyenne fréquence;
I - Indicateur visuel d'accord;
M - Tube spécial pour appareil de mesure;
O - Oscillateur;
P - Etage final de puissance;
PH - Inverseur de phase (amplificateur BF);
R - Redresseur;
S - Séparatrice;
T - Tube utilisé en télévision;
THT - Très haute tension;
V - Indique que le tube est à pente variable;
VF - Amplification à vidéo-fréquence;
VHF - Tube pouvant fonctionner à des fréquences supérieures à 5 MHz ou spécialement étudié pour ondes ultra courtes.

2. SUPPORT (lettre entourée d'un cercle à côté ou en dessous de la fonction) :

A8 8 broches allemand;
E Européen ancien;
L Loctal (ou « clef »);
M Miniature;
N Noval;
O Octal;
R Rimlock;
S Spécial;
SM Subminiature;
T Transcontinental;
US Américain ancien.

3. CORRESPONDANCE :

Le signe / indique que le **même** tube existe sous deux noms (exemple : EBF80 / 6N8);

Le signe = signale une interchangeabilité complète malgré quelques faibles différences de structure (exemple : 5749 = 6BA6). Les caractéristiques ne figurent alors qu'une fois et ce sous la dénomination la plus usuelle;

Un tube inscrit entre parenthèses à côté d'un autre indique qu'ils ont des caractéristiques plus ou moins semblables, mais qu'ils diffèrent par le chauffage, les capacités internes ou le culot.

4. CARACTERISTIQUES STATIQUES (en haut à droite des schémas) :

S - Pente en milliampères par volt;
Sc - Pente de conversion dans le cas d'un changeur de fréquence;
μ - Coefficient d'amplification;
ρ - Résistance interne;
V - Tension de polarisation de la grille de commande;
Req - Résistance équivalente de souffle (tubes utilisés en VHF).

5. SYMBOLES DANS LES SCHEMAS :

Un chiffre dans un cercle indique la tension continue entre deux points ou entre un point et la masse ainsi que la tension alternative ou continue de chauffage.

Un chiffre dans un rectangle indique l'intensité en ampères dans le circuit de chauffage et en milliampères ailleurs.

Un chiffre dans un triangle indique la tension efficace du signal appliqué entre deux points ou entre un point et la masse.

Le chiffre à l'intérieur de la figure donne la puissance maximum en watts (généralement pour une distorsion totale de 10 %). Le nombre placé extérieurement donne la valeur de l'impédance de charge recommandée.


Les flèches indiquent l'entrée et la sortie des signaux.

Signe indiquant que le tube fonctionne en régime d'impulsion.

Broche connectée intérieurement; doit obligatoirement rester libre.


Broche connectée à un écran; doit être mise à la masse.

Broche non connectée intérieurement.

PREFACE

RADIO-TUBES is not intended to supersede a collection of detailed data, caracteristics and graphs. Its aim is to help all those who make use of electronic tubes by enabling them to find easily the necessary information.

Each tube is shown with its base as seen from underneath. The information given includes the essential service caracteristics and a circuit diagram showing the normal value of the principal components to be used in its most usual function.

The following abbreviations and symbols are used:

1. **FUNCTION** (below the name of the tube):

BF - Audio frequency amplification;
D - Detection, demodulation;
C - Frequency changer, mixer;
HF - High or intermediate frequency amplification;
I - Tuning indicator;
M - Special tube for mesure instruments;
O - Oscillator;
P - Power amplifier, output tube;
PH - Phase inverter (AF amplifier);
R - Rectifier;
S - Sync separator tube;
T - Tube normally used in television receivers;
THT - Very high tension (television receivers);
V - Variable mu tube (remote cutoff);
VF - Video frequency amplification;
VHF - Very high frequency. Tube suitable for frequencies higher than 5 MHz or specially built for ultra-short waves.

2. **TUBE BASE** (letter enclosed in a circle or besides below the function):

A8 German 8 pin;
E Old type european base;
L Loctal (lock-in);
M Miniature (7 pin);
N Noval (miniature 9 pin);
O Octal;
R Rimlock;
S Special;
SM Subminiature;
T Transcontinental (european side-contact);
US Old type american base.

3. **INTERCHANGEABILITY** :

The sign / means that the **same** tube exists under two names (example: EBF80/6N8).

The sign = indicates that the tubes are completely interchangeable notwithstanding small structural differences (example: 5749 = 6BA6). The caracteristics are then only given once and apply to the most commonly used type.

A tube enclosed by brackets placed next to another one indicates that they are more or less similar as regards their electronic properties but have different filament caracteristics, internal capacities or base.

4. **STATIC CARACTERISTICS** (right hand upper corner):

S - Mutual conductance (mA/V);
Sc - Conversion conductance (frequency changer);
μ - Amplification factor;
ρ - Internal resistance;
V - Negative grid voltage;
Req - Equivalent noise resistance (VHF tubes).

5. **SYMBOLS USED IN THE CIRCUIT DIAGRAMS:**

A number enclosed in a circle shows the DC voltage between two points or between a point and the ground and also the RMS or DC filament voltage.

A number in a rectangle shows the current in amperes flowing through the heater circuit and in mA elsewhere.

A number in a triangle indicates the maximum alternating voltage allowable between two points or between a point and the ground.

The number inside this symbol is the maximum output power in watts (generally for 10% total distorsion). The number along the side of the symbol is the recommended anode load resistance.

Arrows indicate the points of input and output of the signals.


This symbol shows that the signal delivered to the tube is in form of pulses.

Internally connected pins that must be left free.


Pins connected to an internal screen and must be grounded.


Pins that are not internally connected.

PREFACIO

Cada válvula está representada por su casquillo visto **por debajo**. Va acompañada de sus **características esenciales de servicio** y, en un esquema-tipo, figuran las condiciones normales de funcionamiento, donde se indican los valores de los elementos principales.

En el manual se emplean las abreviaturas y signos convencionales siguientes :

1. FUNCION (Inmediatamente debajo de la denominación de la válvula) :

BF - Amplificación de audiofrecuencia;
D - Detección, demodulación;
C - Conversora de frecuencia;
HF - Amplificación en mediana y alta frecuencia;
I - Indicador visual de sintonía;
M - Tubo especial para instrumentos de medida;
O - Osciladora;
P - Etapa final de potencia;
PH - Inversora de fase (amplificador BF);
R - Rectificadora;
S - Separadora;
T - Tubo utilizado en televisión;
THT - Muy alta tensión;
V - Indica que el tubo es de pendiente variable;
VF - Amplificación en video-frecuencia;
VHF - Válvula capaz de funcionar a frecuencias superiores a los 5 Mc/s o especialmente diseñada para ondas ultracortas.

2. BASE (Letra rodeada de un circulo y situada, bien debajo o al lado de la que expresa la función) :

A8 8 patitas de conexión tipo alemán;
E Europea antigua;
L Loctal;
M Tipo miniatura;
N Tipo noval;
O Octal;
R Rimlock;
S Especial;
SM Tipo subminiatura;
T Transcontinental;
US Americana antigua.

3. CORRESPONDENCIA :

El signo / indica que la misma válvula existe con dos denominaciones distintas (ejemplo : EBF80/6N8).

El signo = expresa que pueden intercambiarse completamente a pesar de algunas pequeñas diferencias en su estructura (ejemplo : 5749 = 6BA6). Las características no figuran, en consecuencia, más que una sola vez y precisamente bajo la denominación más usual.

Una válvula encerrada entre paréntesis al lado de otra indica que son de características más o menos semejantes, pero que, sin embargo, difieren en cuanto a las características del encendido de filamentos, las capacidades internas o el casquillo.

4. CARACTERISTICAS ESTATICAS

(Parte superior derecha de los esquemas) :
S - Pendiente en miliamperios por voltio;
Sc - Pendiente de conversión en el caso de conversora de frecuencia;
μ - Coeficiente de amplificación;
ρ - Resistencia interna;
V - Tensión de polarización de la rejilla de control;
Req - Resistencia equivalente de soplido (Tubos utilizados en VHF).

5. SIMBOLOS EN LOS ESQUEMAS :

Una cifra encerrada en un circulo indica la tensión continua que existe entre dos puntos o entre un punto y masa, así como también la tensión alterna o continua de alimentación de filamentos.

Una cifra encerrada en el interior de un rectángulo indica la intensidad en amperios en el circuito de alimentación de filamentos y en miliamperios en todos los demás lugares.

Una cifra en el interior de un triángulo indica la tensión eficaz de la señal aplicada entre dos puntos o entre un punto y masa.

La cifra colocada en el interior de la figura da la potencia máxima en vatios (generalmente para una distorsión total de 10 %). El número situado exteriormente da el valor de la impedancia de carga recomendada.

Las flechas indican la entrada y la salida de las señales.

Este signo indica que la válvula funciona en régimen de impulsos.

Pata conectada al interior; debe quedar libre obligatoriamente.

Pata conectada a una pantalla; debe reunirse a la masa.

Pata no existente en el zocalo de la lámpara.

VORWORT

RADIO-TUBES ist nicht bestimmt, die ausführlichen Datensammlungen mit Kurvenblättern zu ersetzen. Es wurde geschaffen, um dem Benutzer eine schnelle Übersicht über die derzeit gebräuchlichen Typen von Elektronenröhren zu geben. In erster Linie für den Praktiker bestimmt, hat dieses Buch seinen Platz in den Laboratorien und den Werkstätten.

Es umfasst alle modernen Rundfunk-, Tonverstärker- und Fernsehröhren, sowie einige ältere, noch verwendete Typen.

Jede Röhre ist durch seinen von unten gesehenen Sockelanschluss dargestellt. Daneben sind die wichtigsten **Betriebsdaten** angegeben; die normalen Betriebsbedingungen lassen sich aus einem Prinzipschaltbild ersehen, in dem die hauptsächlichen Schaltelemente eingezeichnet sind.

Hierbei werden die folgenden Abkürzungen und Zeichen benutzt :

1. **VERWENDUNG** (unter der Röhrenbezeichnung) :

BF - Tonfrequenzverstärkung;
D - Detektion, Demodulation;
C - Mischstufe;
HF - Hoch- oder Zwischenfrequenzverstärkung;
I - Abstimmanzeige;
M - Spezialröhre für Messgeräte;
O - Oszillator;
P - Leistungsendstufe;
PH - Phasenumkehr (NF-Verstärkung);
R - Gleichrichter;
S - Impulssieb;
T - Fernsehgeräte;
THT - Höchstspannungsgleichrichter;
V - Veränderliche Steilheit;
VF - Videoverstärkung;
VHF - Röhre, die bei Frequenzen über 5 MHz verwendet werden kann, oder gute UKW- Eigenschaften besitzt.

2. **SOCKEL** (Buchstabe im Kreis, unter oder neben der Verwendung) :

A8 Deutscher 3 + 5- Stift Stahlröhrensockel;
E Alter Europasockel;
L Loktal;
M Miniatur 7 Stifte;
N Noval;
O Oktal;
R Rimlock;
S Spezial;
SM Subminiatur;
T Transkontinental;
US Alter Amerikasockel.

3. **AUSTAUSCHMÖGLICHKEITEN :**

Das Zeichen / bedeutet, dass für **dieselbe** Röhre zwei Bezeichnungen gebraucht werden (Beispiel : EBF 80/6N8).

Beim Zeichen = ist ein vollkommener Austausch trotz einiger Bauverschiedenheiten möglich (Beispiel : 5749 = 6BA6). Die Daten werden dann nur einmal angegeben, und zwar unter der gebräuchlichsten Bezeichnung.

In Klammern erscheint eine Röhre neben einer anderen bei fast gleichen Daten, aber mit Unterschieden in Heizung, Elektrodenkapazitäten oder Sockel.

4. **STATISCHE DATEN** (oben rechts in den Schaltbildern) :

S - Steilheit in Milliampere pro Volt;
Sc - Mischsteilheit bei Verwendung als Mischröhre;
μ - Verstärkungsfaktor;
ρ - Innenwiderstand;
V - Vorspannung des Steuergitters;
Req - Äquivalenter Rauschwiderstand (VHF- Röhren).

5. **SCHALTSYMBOLE :**

Eine Zahl im Kreis gibt die Gleichspannung zwischen zwei Punkten, oder einem Punkte und Masse, oder auch die Heizspannung (Gleich- oder Wechselspannung) an.

Eine Zahl im Rechteck gibt im Heizkreis den Strom in Ampere und anderorts den Strom in Milliampere an.

Eine Zahl im Dreieck bezeichnet die effektive Signal-Wechselspannung zwischen zwei Punkten oder einem Punkt und Masse.

Die Zahl im Symbol bezeichnet die Maximalleistung (meist bei 10 % Gesamtverzerrung). Der empfohlene Aussenwiderstand ist durch die danebenstehende Zahl angegeben.


Die Pfeile bezichnen Signal Ein- und Ausgang.


Bezeichnet Impulsbetrieb einer Röhre.


Innen verbundener Anschluss.


Anschluss der Abschirmung, mit Masse zu verbinden.


Innen nicht verbundener Anschluss.

VOORWOORD

RADIO-TUBES wil niet de verzamelingen van omstandige karakteristieken met verscheidene krommen vervangen. Het is bestemd voor de gebruiker van elektronische buizen en beoogd hem het gebruik ervan te vergemakkelijken. Het is dus een wezenlijk praktisch werk dat zijn plaats heeft in het laboratorium en in het werkhuis.

Het bevat alle moderne buizen bruikbaar voor de radio, de geluidsversterking of de televisie evenals sommige verouderde buizen thans nog in gebruik.

Elke buis is voorgesteld door haar voet langs onder gezien. Ze is begeleid door hare hoofdzakelijke karakteristieken en de normale gebruiksvoorwaarden komen voor in een principeschema dat de waarden der bijzonderste elementen aanduidt.

De volgende afkortingen en symbolen komen erin voor :

1. FUNCTIE (onder de benaming der buis) :

BF - Audiofrequentieversterking;
D - Detectie, demodulatie;
C - Frequentieomvorming (mengbuis);
HF - Hoogfrequentie of middenfrequentie versterking;
I - Visueel afstemmingsbuis (toveroog);
M - Bijzondere buis voor meetapparaat;
O - Oscillator;
P - Eindversterkerbuis;
PH - Phaseomkeerder (in LF versterkers);
R - Gelijkrichter;
S - Scheidingsbuis (televisie);
T - Televisiebuis;
THT - Zeer hooge spanning (televisie);
V - Duidt aan dat de buis een veranderbare steilheid heeft;
VF - Videofrequentie versterking;
VHF - Buis kunnende werken op hogere frequencies dan 5 MHz of bijzonder ontworpen voor ultra korte golflengten.

2. VOETTYPE (letter waarrond een cirkel onder of naast de functie) :

A8 Acht pinnen (Duits);
E Oud europeer;
L Loctal;
M Miniatuur;
N Noval;
O Octal;
R Rimlock;
S Speciaal;
SM Subminiatuur;
T Transcontinentaal (type P);
US Oud americaans.

3. OVEREENSTEMMING :

Het teken/duidt aan dat **dezelfde** buis onder twee benamingen bestaat (b.v. EBF80 / 6N8).

Het teken = duidt een volledige wisselbaarheid aan niettegenstaande enkele lichte struktuurverschillen (b.v. 5749 = 6BA6). De karakteristieken worden dan slechts één maal aangehaald en onder de meest gebruikte benaming.

Een buis tussen haakjes naast een andere betekent dat ze min of meer gelijkaardige eigenschappen bezitten doch dat ze verschillen uit hoofde van de gloeidraad, de inwendige capaciteiten of de voet.

4. STATISCHE KARAKTERISTIEKEN

(boven rechterzijde der schemas) :
S - Steilheid in mA/V;
Sc - Conversiesteilheid in geval van een mengbuis;
μ - Versterkingsfactor;
ρ - Inwendige weerstand;
V - Stuurroosterspanning;
Req - Gelijkwaardige ruisweerstand (buizen in VHF gebruikt).

5. SYMBOLEN IN DE SCHEMAS :

Een cijfer in een cirkel betekent de gelijkspanning tussen twee punten of tussen een punt en de massa, evenals de gloeispanning (gelijk of wissel).

Een cijfer in een rechthoek betekent de stroomsterkte uitgedrukt in ampere in de verhittingskring en elders in milliampere.

Een cijfer in een driehoek betekent de effective signaalspanning tussen twee punten of tussen één punt en de massa.

Het cijfer binnen de figuur geeft de maximum uitgangs vermogen in watts (in het algemeen voor 10 % totale vervorming). Het getal erbuiten geplaatst geeft de waarde van de aanbevole belastingsimpedancie (aanpassingswaarde).

De pijlen duiden de in- en uitgang der signalen aan.

Teken beduidend dat de buis in impulsregiem werkt.

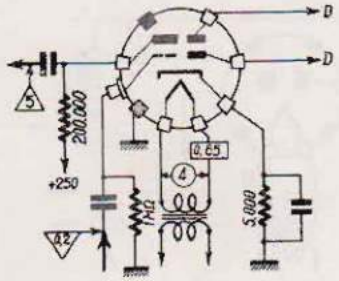

Inwendige verbinding (vrij laten !).


Inwendige scherm (moet met de chassis verbonden worden).


Mag gebruikt worden als steunpunt.

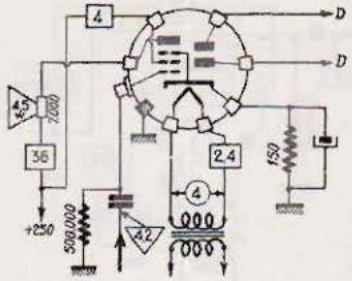
ABC1 (T)
D+BF

S = 2
ρ = 13500
V = -6



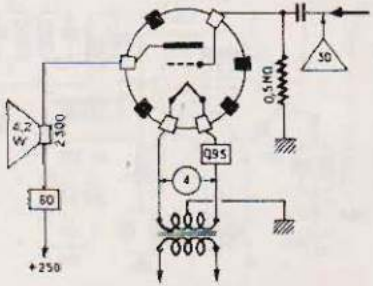
ABL1 (T)
D+P

S = 9
ρ = 58000
V = -6



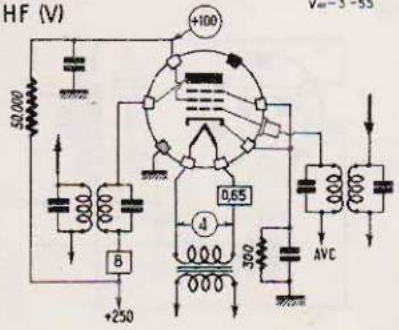
AD1 (T)
P

S = 6
ρ = 650
V = -45



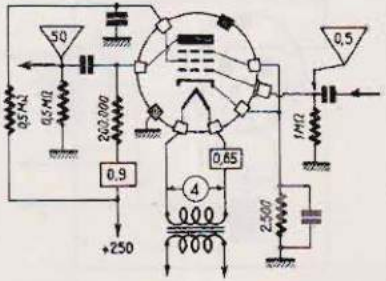
AF3 (T)
HF (V)

S = 1,8
ρ = 1,2MΩ
V = -3 -55



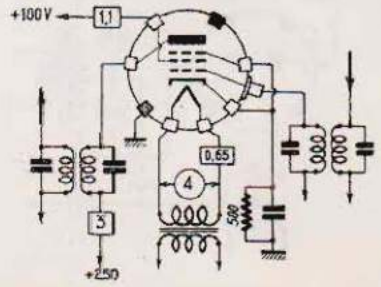
AF7 (T)
BF

S = 2,1
ρ = 2MΩ
V = -2



AF7 (T)
HF

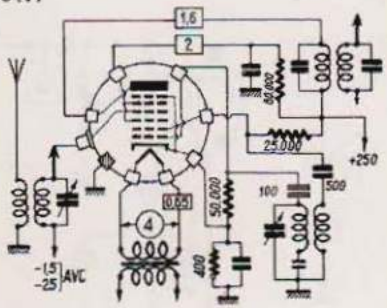
S = 2,1
ρ = 2MΩ
V = -2



AA61 = ECC40 _ AL2 = 4682

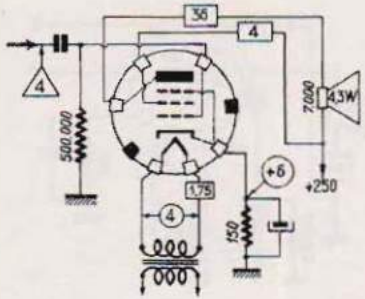
AK2 (T)

C(V)



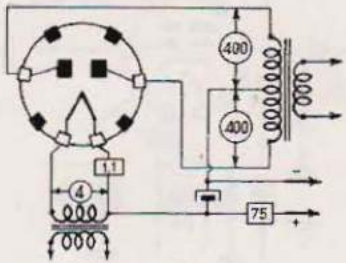
AL4 (T)

P



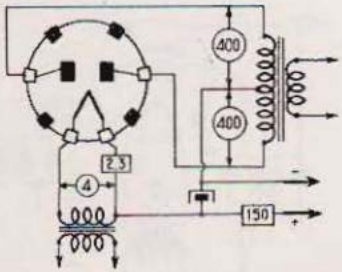
AZ1 (T)

R



AZ4 (T)

R



AZ11 (A8)

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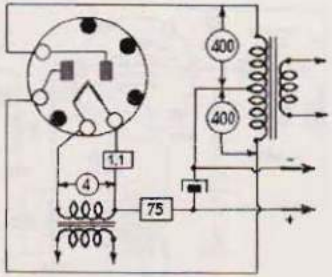
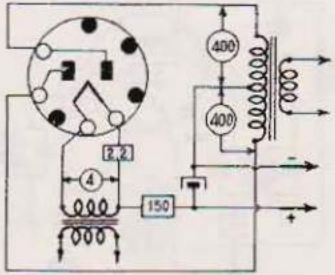


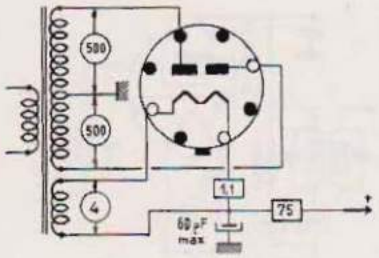
AZ12 (A8)

R



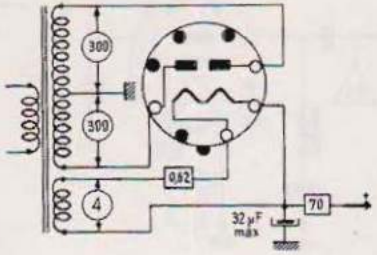
AZ 31 ⓪

R



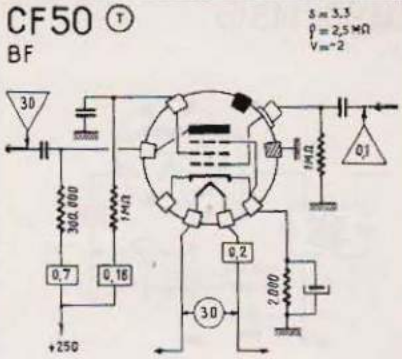
AZ 41 Ⓡ

R



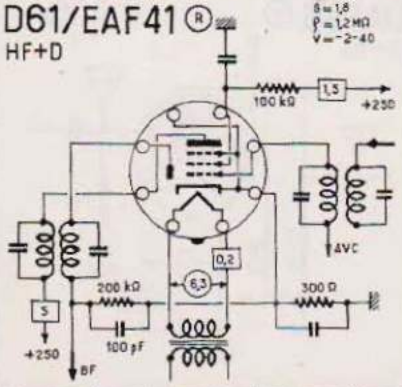
CF 50 Ⓣ

BF



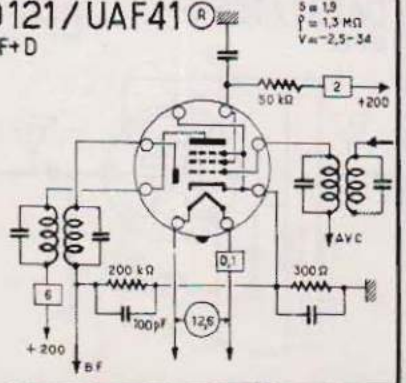
D61/EAF41 Ⓡ

HF+D



D121/UAF41 Ⓡ

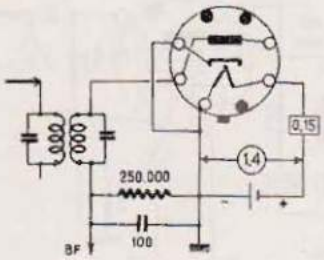
HF+D



BF61 = EL41
BF62 = EL42
BF451 = UL41
CF61 = ECH41
CF141 = UCH41

DA90/143 ⓪

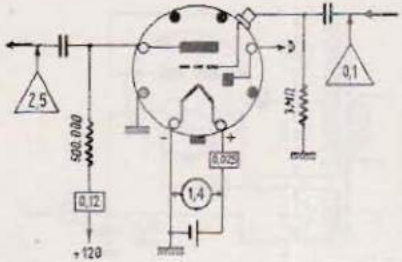
D



DAC21 ⓪

D+BF

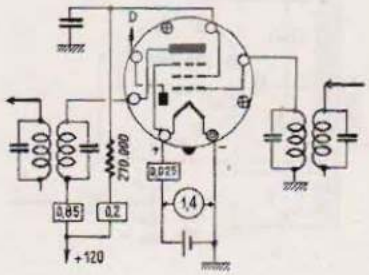
S = 0,4
ρ = 0,1 MΩ
V = 0



DAF40 Ⓡ

HF+D

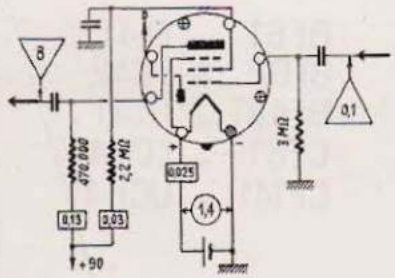
S = 0,7
ρ = 2,5 MΩ
V = 0



DAF41 Ⓡ

D+BF

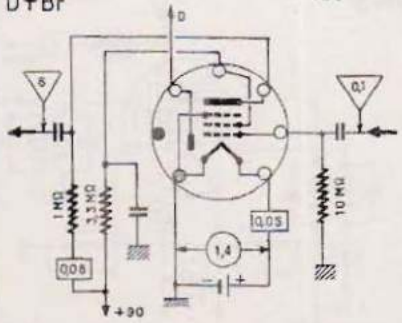
S = 0,8
ρ = 1,5 MΩ
V = 0



DAF91/1S5 Ⓜ

D+BF

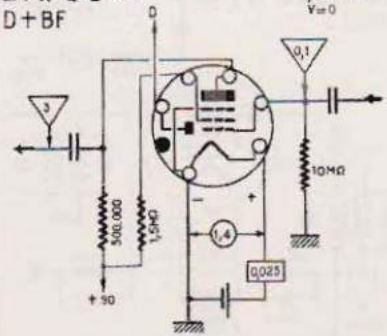
S = 0,62
ρ = 0,6 MΩ
V = 0



DAF96 Ⓜ

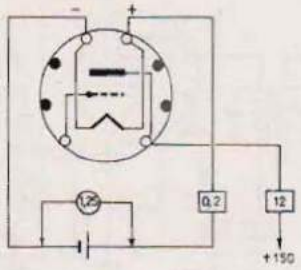
D+BF

S = 0,4
ρ = 1,6 MΩ
V = 0



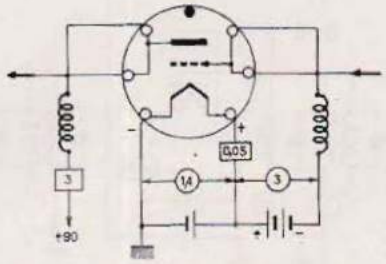
DC70 (SM)
0 (500 MHz)

S = 3,4
ρ = 4 000
V = -4,5



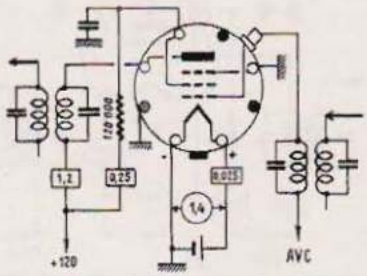
DC90 (M)
HF (VHF)

S = 1,1
V = -3



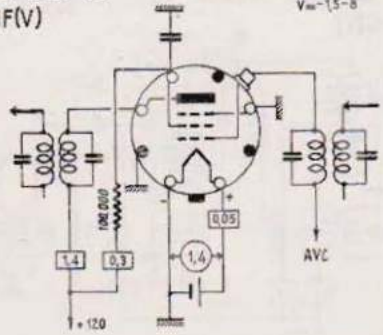
DF21 (O)
HF(V)

S = 0,7
ρ = 2,5 MΩ
V = 0-4,5



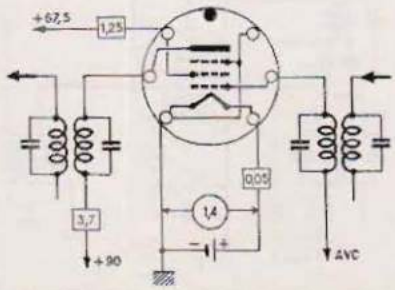
DF22 (O)
HF(V)

S = 1,1
ρ = 2,5 MΩ
V = -1,5-8



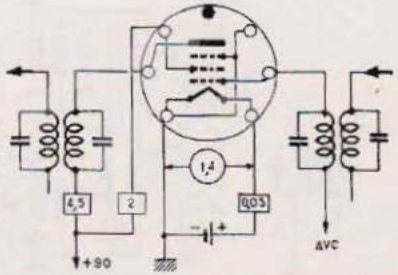
DF91/1T4 (M)
HF(V)

S = 0,9
ρ = 0,5 MΩ
V = 0-18



DF92/1L4 (M)
HF(V)

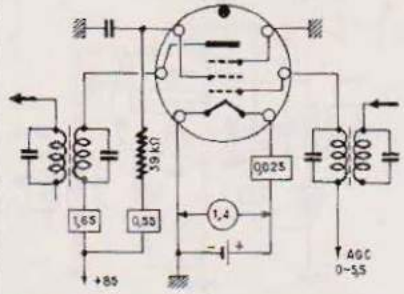
S = 1,02
ρ = 0,35 MΩ
V = 0-8



DF96/1AJ4 (M)

HF(V)

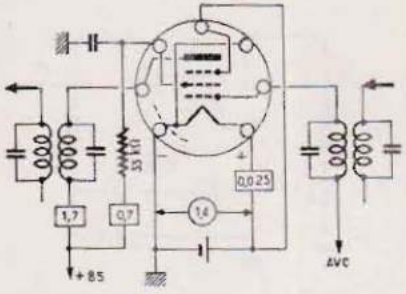
S = 0,85
ρ = 1 MΩ
V = 0



DF97/1AN5 (M)

HF(V)

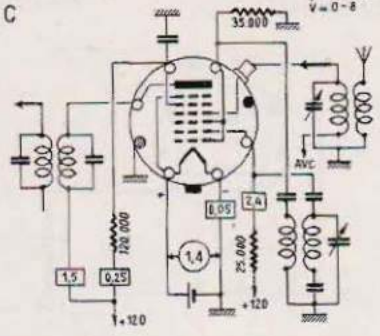
S = 0,94
ρ = 0,45 MΩ
V = 0-7



DK21 (O)

C

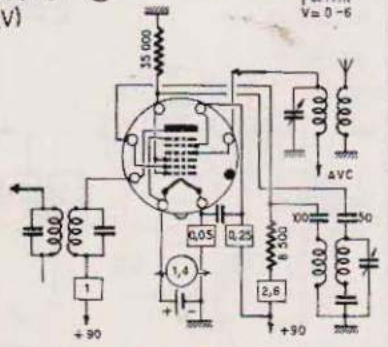
Sc = 0,5
ρ = 1,5 MΩ
V = 0-8



DK40 (R)

C(V)

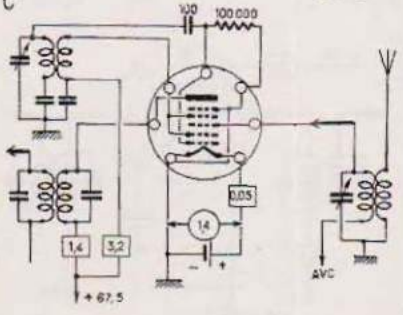
S = 0,42
ρ = 1 MΩ
V = 0-6



DK91/1R5 (M)

C

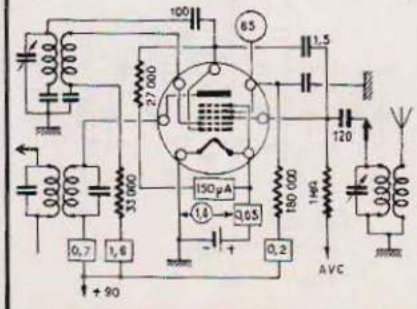
S = 0,3
ρ = 0,5 MΩ
V = 0-14



DK92/1AC6 (M)

C(V)

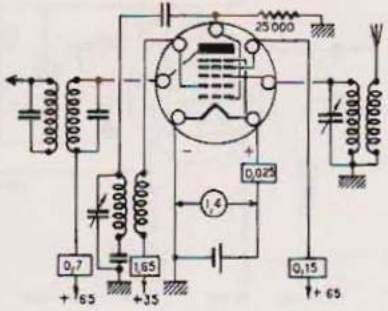
S = 0,325
ρ = 0,6 MΩ
V = 0-12



DK96/1AB6 Ⓜ

C

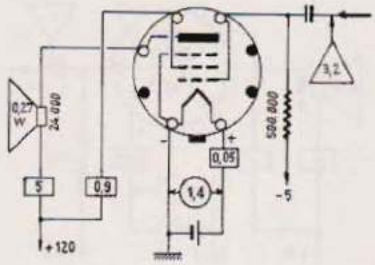
Sc= 0,3
ρ = 1 MΩ
V = 0



DL21 Ⓞ

P

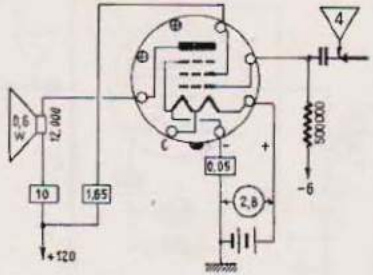
S = 1,4
ρ = 0,35 MΩ
V = -5



DL41 Ⓡ

P

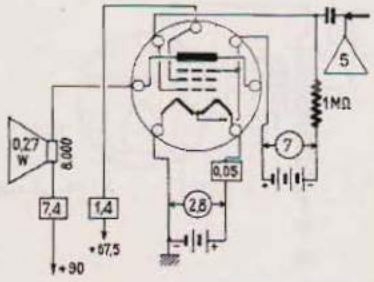
S = 2,55
ρ = 80 000
V = -5,7



DL92/3S4 Ⓜ

P

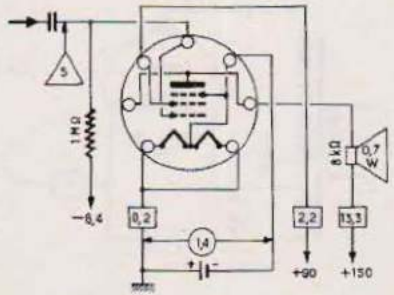
S = 1,6
ρ = 0,1 MΩ
V = -7



DL93/3A4 Ⓜ

P

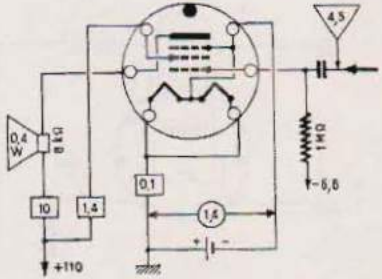
S = 1,9
V = -8,4



DL94/3V4 Ⓜ

P

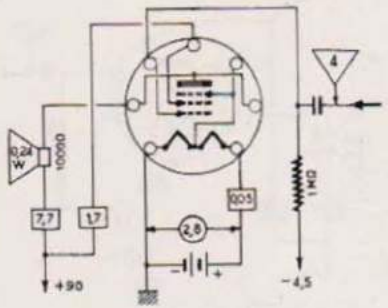
S = 2,2
ρ = 0,1 MΩ
V = -6,6



DL95/3Q4 Ⓜ

P

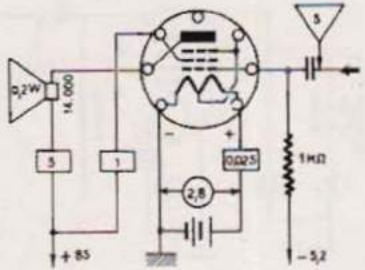
S = 2
R_{gk} = 0,12 MΩ
V_{bb} = −4,5



DL96/3C4 Ⓜ

P

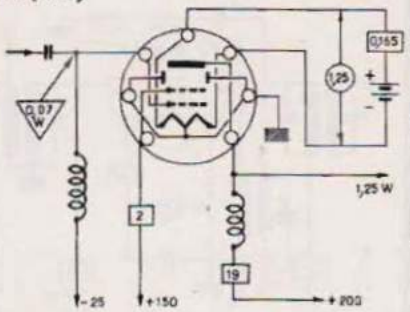
S = 1,4
V_{bb} = −5,2



DL98/3B4 Ⓜ

HF(CℓC)

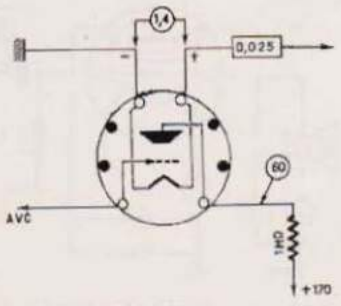
S = 1,7
μ = 4,1



DM70/DM71/1M3

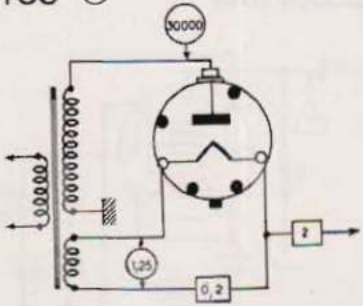
I (SM)

V_a = 0–10



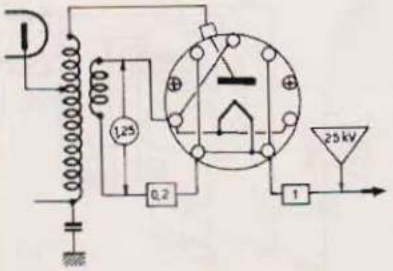
DY30 Ⓞ

R



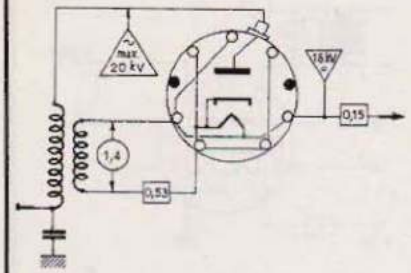
DY80/1X2A Ⓝ

R (T)



DY86/DY87/1S2 Ⓝ

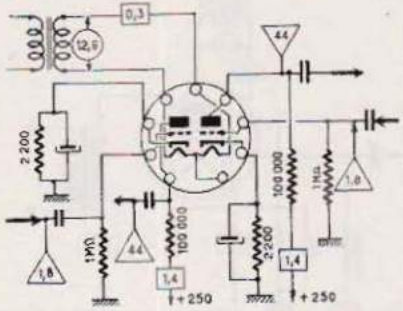
R(T)



E80CC Ⓝ

BF

S = 2,9
ρ = 11000
Vₐ = 5,6

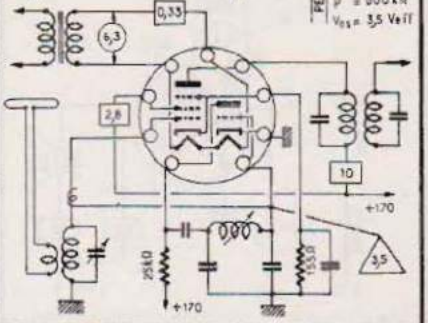


E80CF Ⓝ

C(T)

TRIODE
S = 5
μ = 18

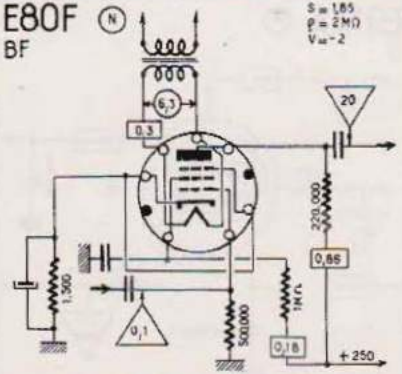
PENTODE
S = 6,2
ρ = 0,4 MΩ
Sg = 2,2
ρ = 800 kΩ
Vg1 = 3,5 Volt



E80F Ⓝ

BF

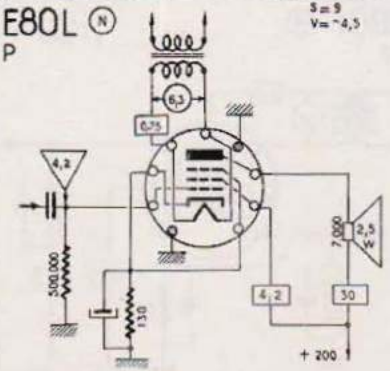
S = 1,85
ρ = 2 MΩ
Vₐ = 2



E80L Ⓝ

P

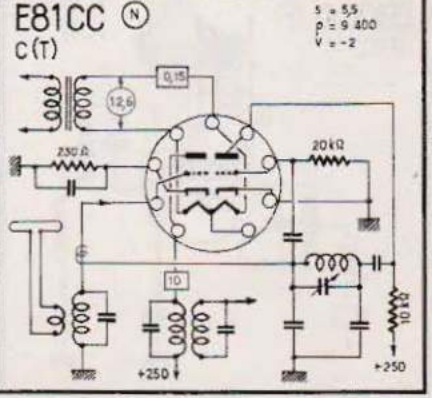
S = 9
Vₐ = 4,5



E81CC Ⓝ

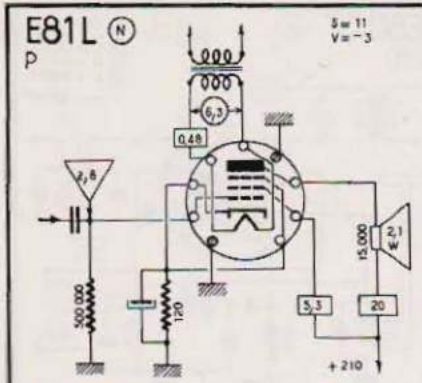
C(T)

S = 5,5
ρ = 9 800
Vₐ = 2



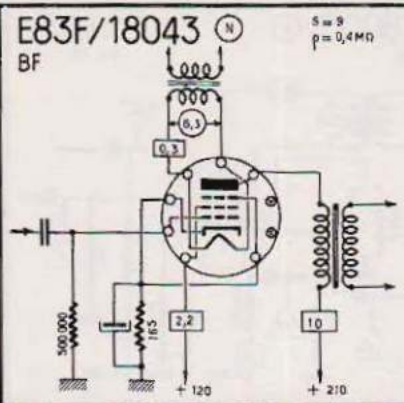
E81L (N)

P



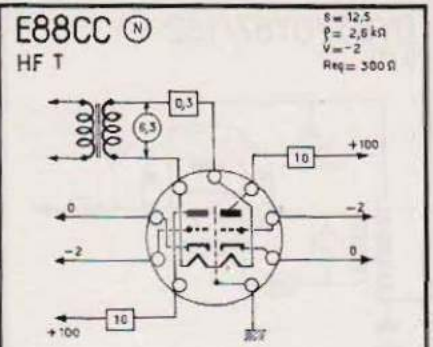
E83F/18043 (N)

BF



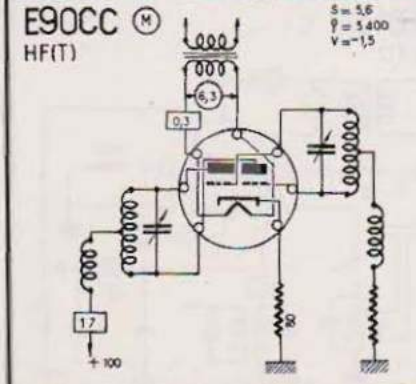
E88CC (N)

HF T



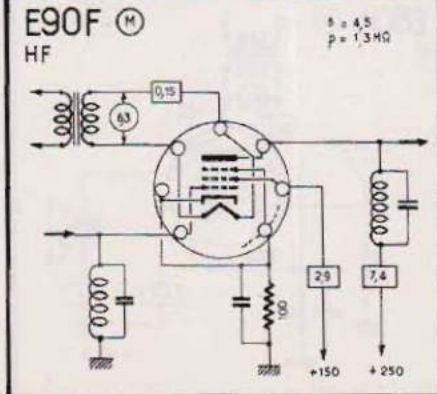
E90CC (M)

HF(T)



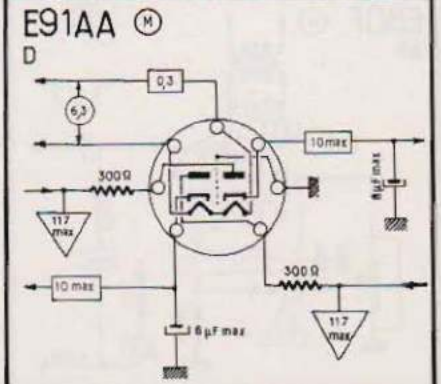
E90F (M)

HF



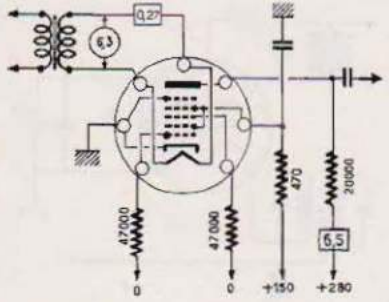
E91AA (M)

D



E91H (M)

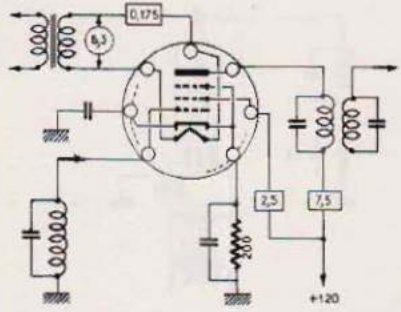
S



E95F (M)

HF

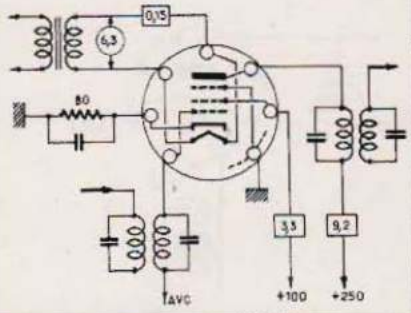
S = 5
ρ = 0,34 MΩ



E99F (M)

HF(V)

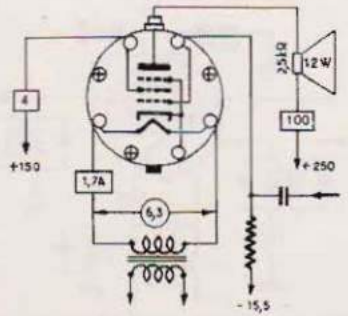
S = 3,6
ρ = 1 MΩ
V = 0-20 V



E130L (O)

P

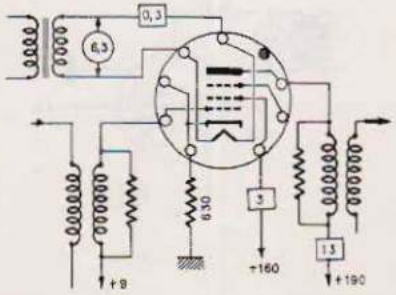
S = 25
ρ = 10 kΩ
V = -15,5



E180F (N)

VF(T)

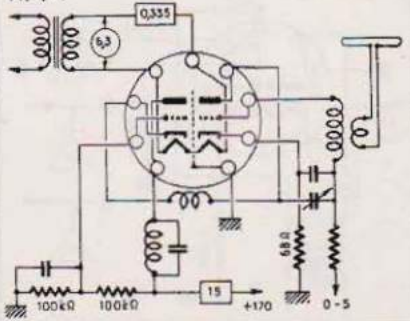
S = 16,5
ρ = 35 kΩ
V = -0,9



E188CC (N)

HF(T)

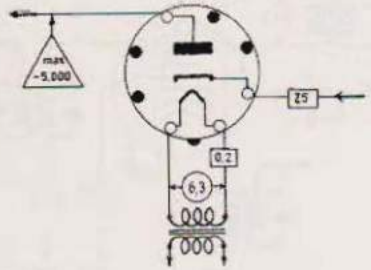
S = 12,5
ρ = 33
V = -1,2



EA40 (R)

D (T)

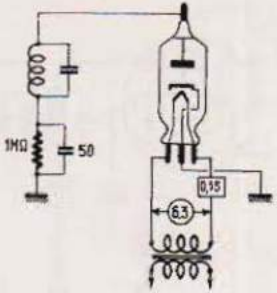
ρ = 300 Ω



EA50/2B35 (S)

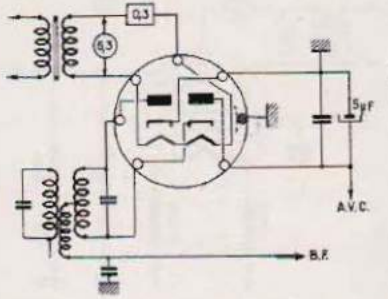
D

Imax = 5mA



EAA91/EB91/6AL5 (M)

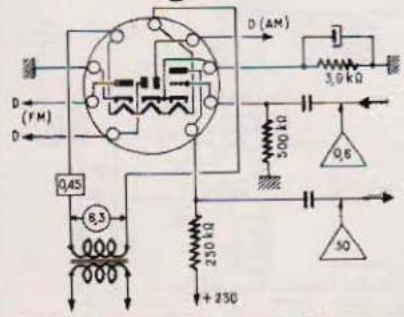
D (FM)



EABC80/6T8/6AK8 (N)

D+BF (FM)

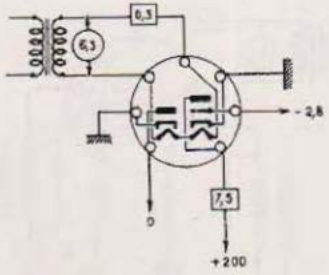
S = 1,2
ρ = 58000
Vm = -3



EAC91 (M)

D (UHF)+D

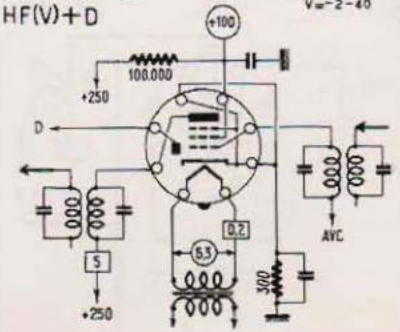
S = 2,8
ρ = 12800
Vm = -2,8



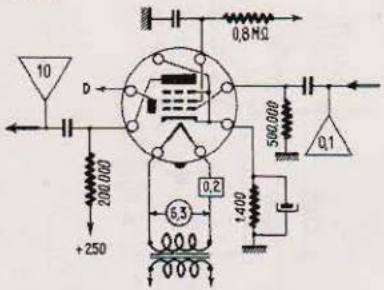
EAF41 (R)

HF(V)+D

S = 1,6
ρ = 1,2 MΩ
Vm = -2 - 40

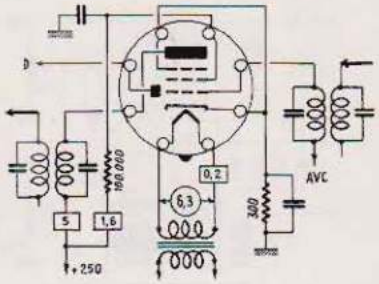


EAF41 Ⓡ
BF+D

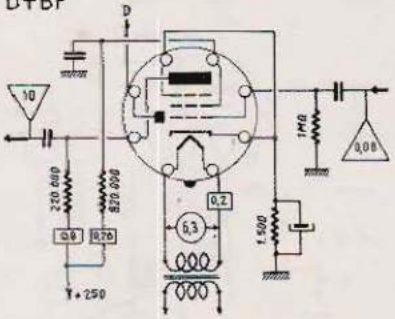


EAF42/6CT7 Ⓡ
HF+D

S = 2
ρ = 1,4 MΩ
V = -2 -40

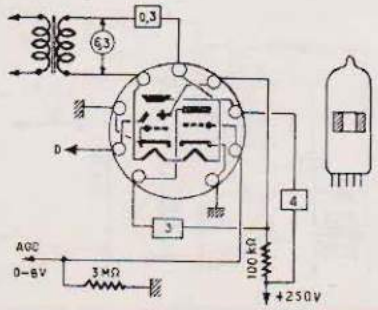


EAF42 Ⓡ
D+BF



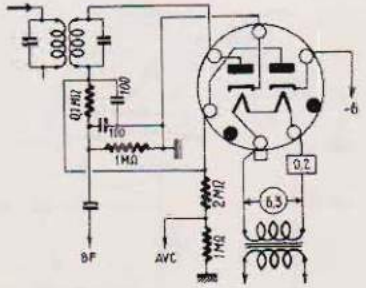
EAM86 Ⓝ
I+D

TRIODE
S = 3,8
μ = 58

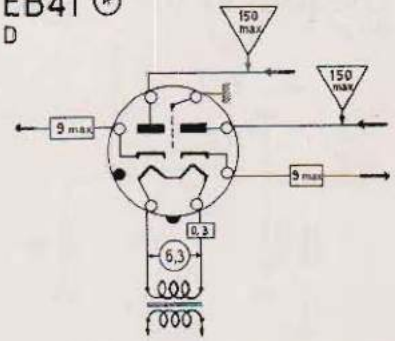


EB11 Ⓐ⑧
D

Imax = 0,8mA



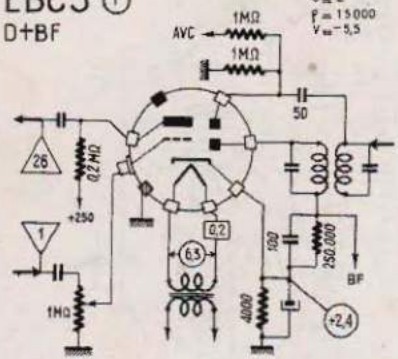
EB41 Ⓟ
D



EB91 = EAA91

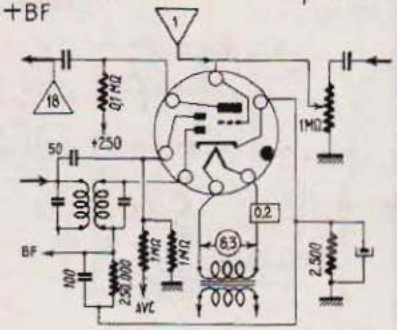
EBC3 (T)
D+BF

S = 2
ρ = 15000
Va = 5,5



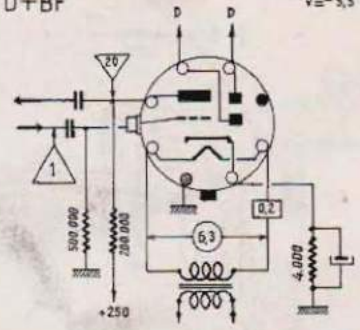
EBC11 (A8)
D+BF

S = 2
ρ = 11500



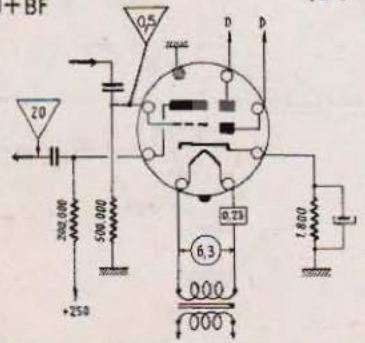
EBC33 (D)
D+BF

S = 2
ρ = 15000
Va = 5,5



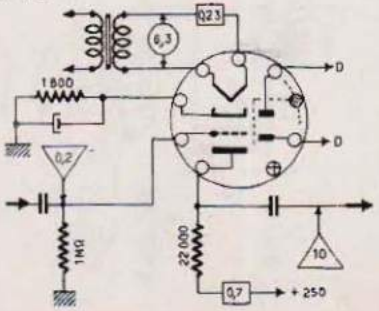
EBC41/6CV7 (R)
D+BF

S = 1,2
ρ = 58000
Va = 3



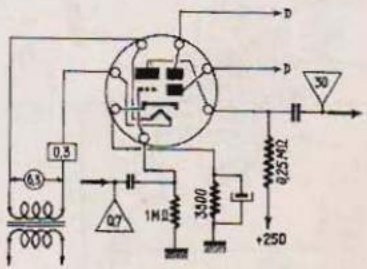
EBC81/6BD7 (N)
BF+D

S = 1,2
ρ = 58000
Va = 3



EBC90/6AT6 (M)
D+BF

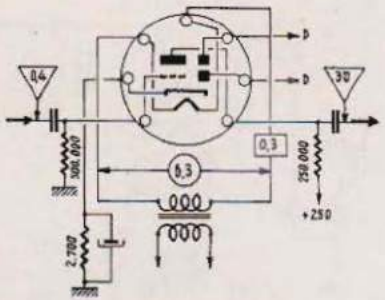
S = 1,2
ρ = 58000 Ω
Va = 3
I = 1



EBC91/6AV6 (H)

D+BF

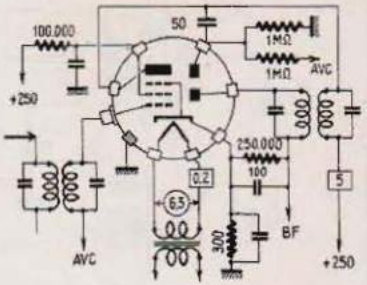
S = 1,6
Ri = 62000
V = -2



EBF 2 (T)

HF(V)+D

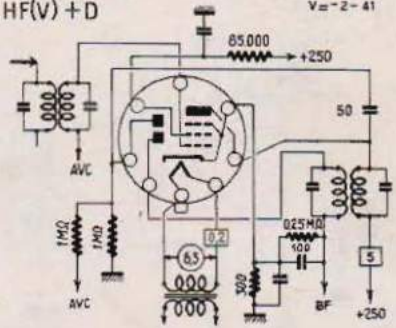
S = 1,8
Ri = 1,5 MΩ
V = -2 -50



EBF11 (A8)

HF(V)+D

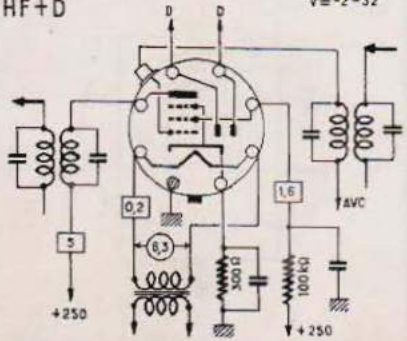
S = 1,8
Ri = 2MΩ
V = -2 - 41



EBF32/6B8 (O)

HF+D

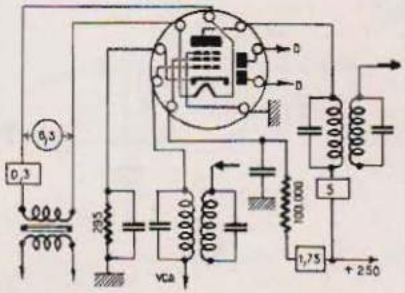
S = 1,8
Ri = 1,3 MΩ
V = -2 -32



EBF80/6N8 (N)

HF(V)+D

S = 2,2
Ri = 1,5 MΩ
V = -2 -35

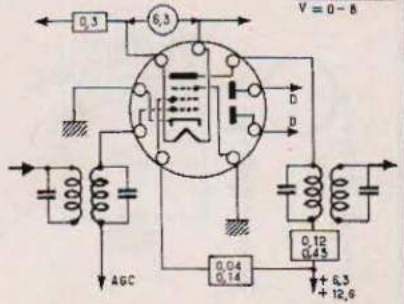


EBF83 (N)

HF(V)+D

Va 6,3	12,6
S = 0,45	1
S = 0,65	1MΩ

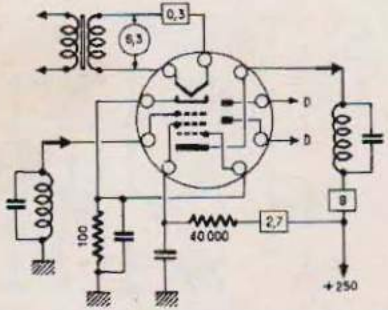
V = 0 - 8



EBF89/6DC8 (N)

HF + D(T)

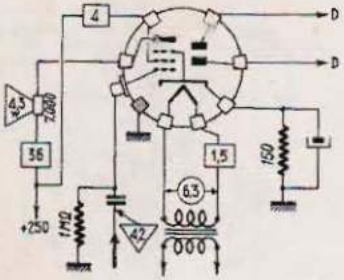
S = 3,8
ρ = 1 MΩ
V = -2



EBL1 (T)

D+P

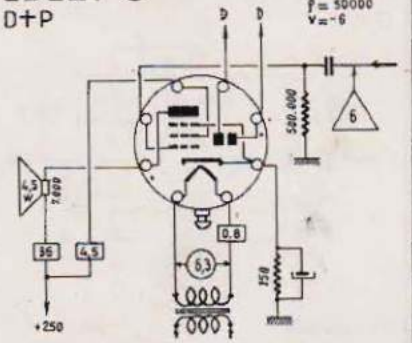
S = 9,5
ρ = 50000
V = -6



EBL21 (L)

D+P

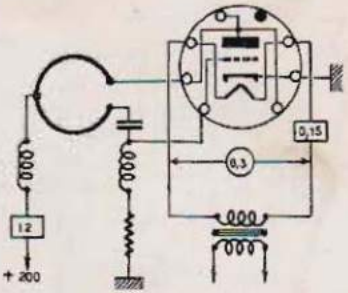
S = 9
ρ = 50000
V = -6



EC70 (SM)

O(UHF)

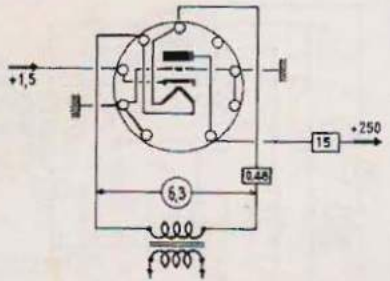
S = 3,5
ρ = 4000
V = -8



EC80/6Q4 (N)

UHF

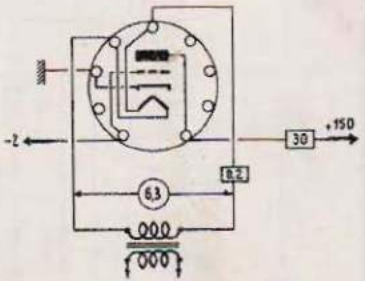
S = 12



EC81/6R4 (N)

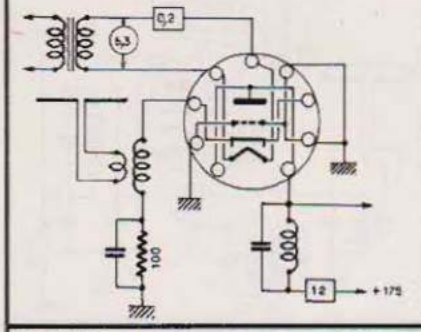
UHF

S = 5,5



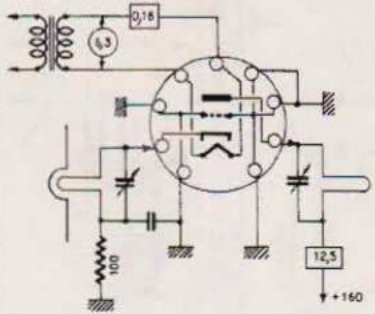
EC86 (N)
VHF

S = 14
μ = 68
V = -1,5



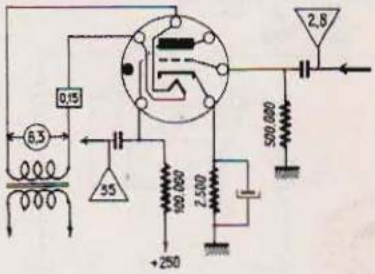
EC88 (N)
VHF (400 MHz)

S = 13,5
μ = 65



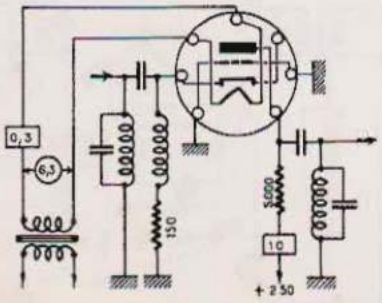
EC90/6C4 (M)
BF

S = 2,2
P = 7720
V = -8,5



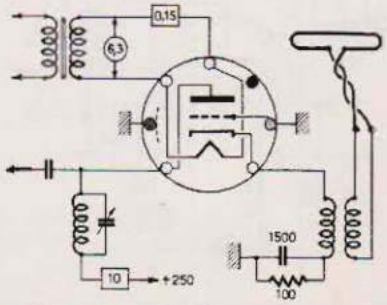
EC91 (M)
VHF (250 MHz)

S = 8,5
P = 12000
V = -1,5



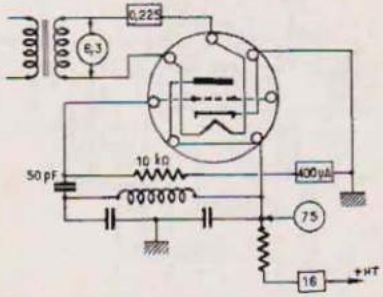
EC92/6AB4 (M)
HF(T)

S = 5
P = 12000
V = -2



EC93/6BS4 (M)
0(T) 470_890 MHz

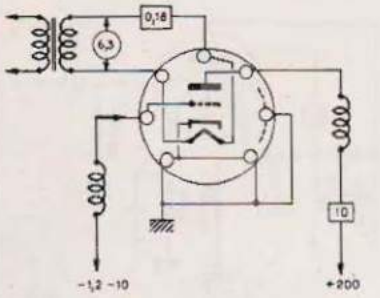
S = 8
V = -4



EC95 (M)

VHF(V)

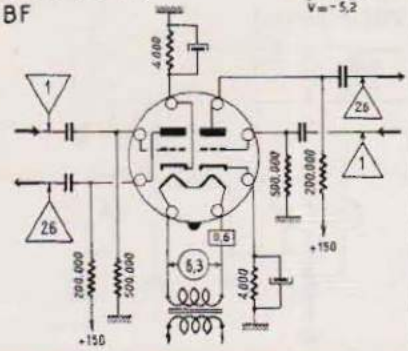
S = 10,5
μ = 80



ECC40 (R)

BF

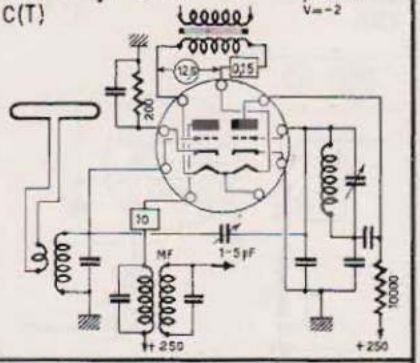
S = 2,7
ρ = 11000
Vm = -5,2



ECC81/12AT7 (N)

C(T)

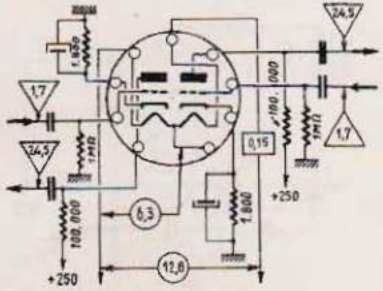
S = 5,5
ρ = 9400
Vm = -2



ECC82/12AU7 (N)

BF

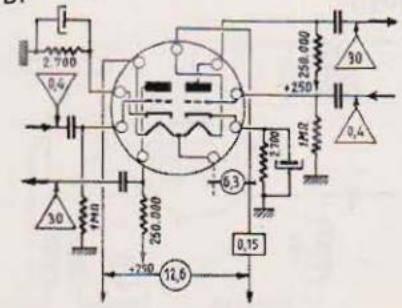
S = 2,2
ρ = 1700
Vm = -8,5



ECC83/12AX17 (N)

BF

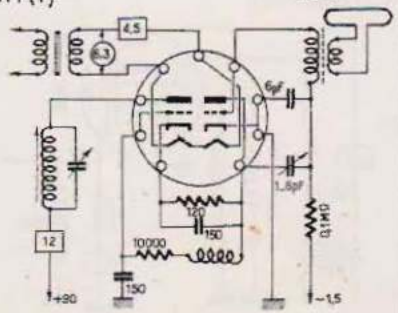
S = 1,6
ρ = 62000
Vm = -2



ECC84/6CW7 (N)

HF(T)

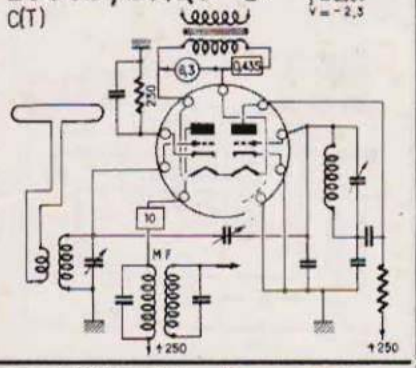
S = 6
ρ = 10000
Vm = -1,5



ECC85/6AQ8 (N)

C(T)

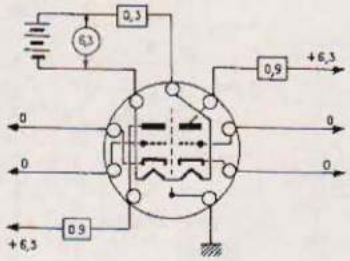
S = 6
ρ = 9,500
V = −2,3



ECC86 (N)

HF(Auto)

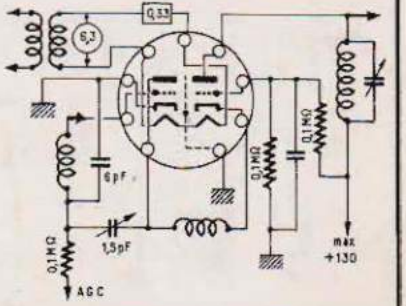
S = 2,6
V = −0,4
μ = 14
Rg = 5 kΩ



ECC88 (N)

HF(V)

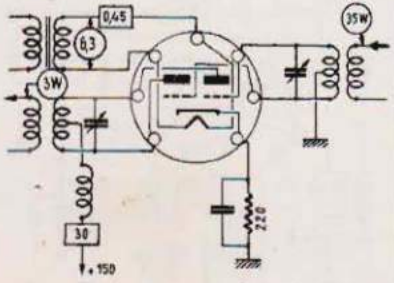
S = 12,5



ECC91/6J6 (M)

HF(Cl.C)

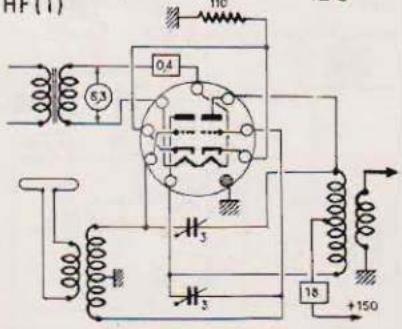
S = 5,3
ρ = 7,100
V = −10



ECC180/6BQ7 (N)

HF(T)

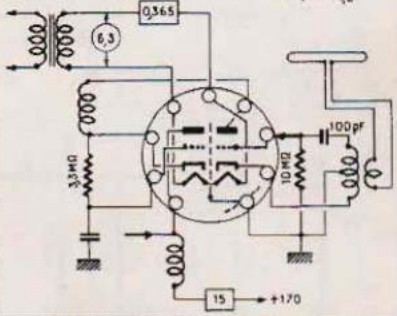
S = 6
ρ = 5,800
V = −2



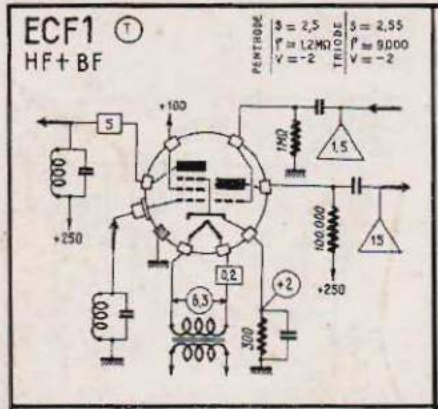
ECC189 (N)

VHF (T_FM)

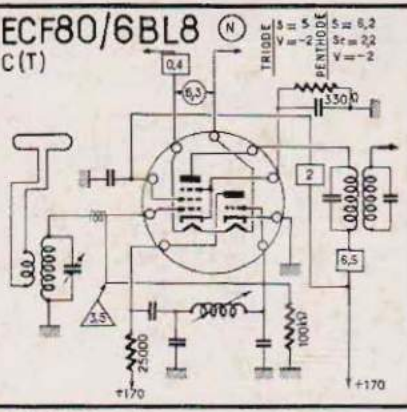
S = 12,5
μ = 34
ρ = 2,6 kΩ
V = −1,2



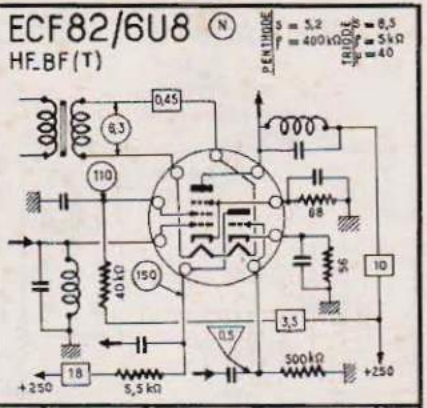
ECF1 (T)
HF + BF



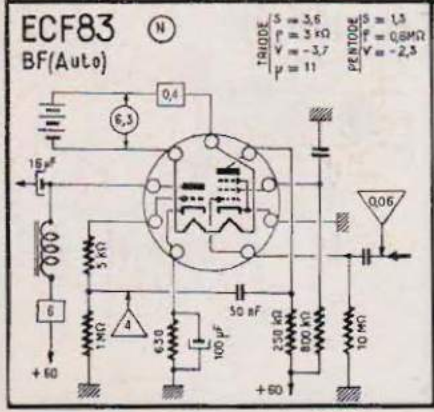
ECF80/6BL8 (N)
C(T)



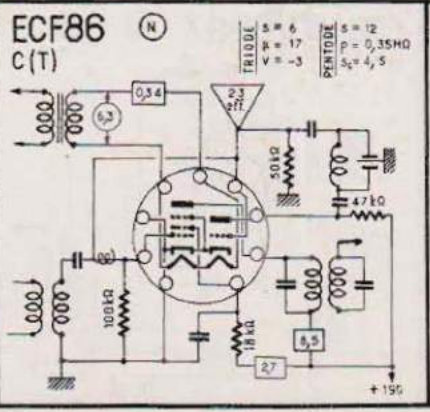
ECF82/6U8 (N)
HF-BF(T)



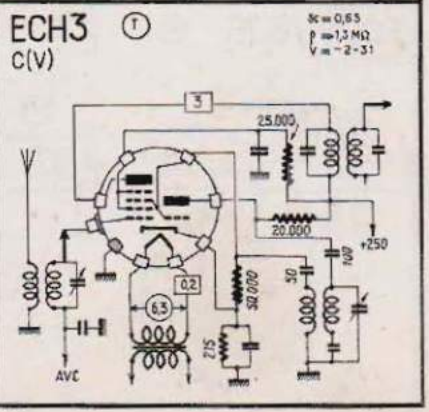
ECF83 (N)
BF(Auto)



ECF86 (N)
C(T)

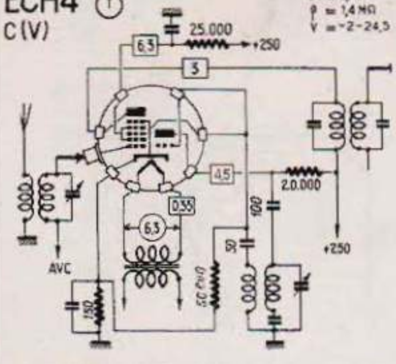


ECH3 (T)
C(V)



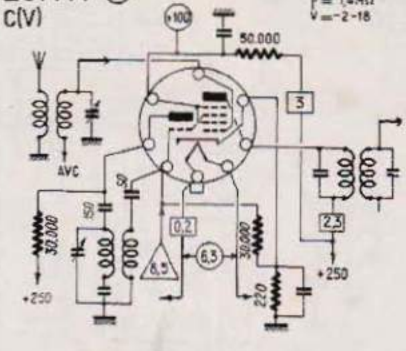
ECH4 (T)
C(V)

Sc = 0,75
ρ = 1,4 MΩ
V = -2-24,5



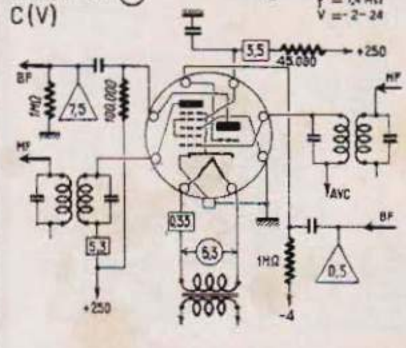
ECH11 (A8)
C(V)

S = 0,65
ρ = 1,4MΩ
V = -2-18



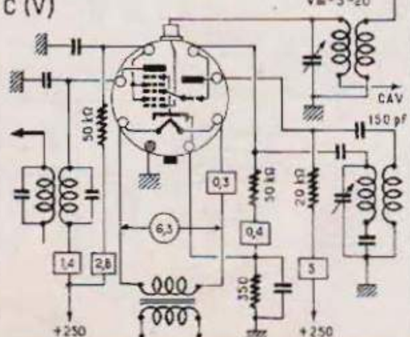
ECH21 (L)
C(V)

Sc = 0,75
ρ = 1,4 MΩ
V = -2-24



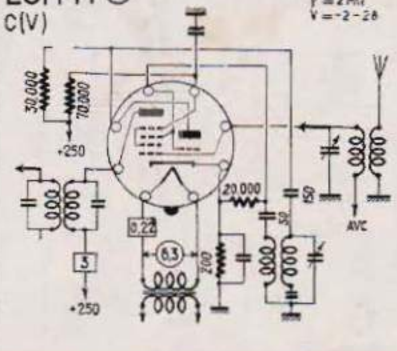
ECH35/6J8 (O)
C (V)

S = 0,29
ρ = 4 MΩ
V = -3-20



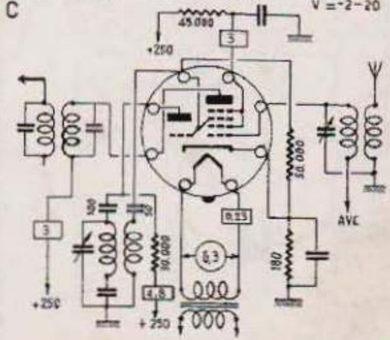
ECH41 (R)
C(V)

Sc = 0,5
ρ = 2 MΩ
V = -2-28



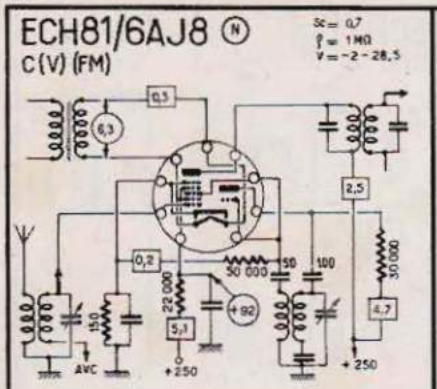
ECH42/6CU7 (R)
C

Sc = 0,75
ρ = 1,7 MΩ
V = -2-20



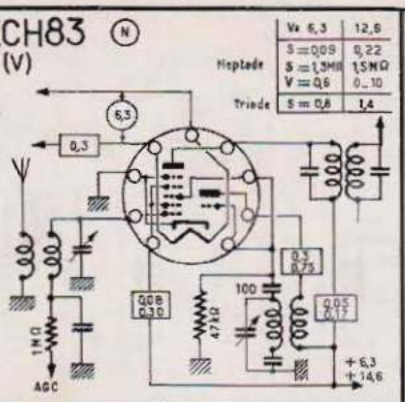
ECH81/6AJ8 (N)

C(V) (FM)



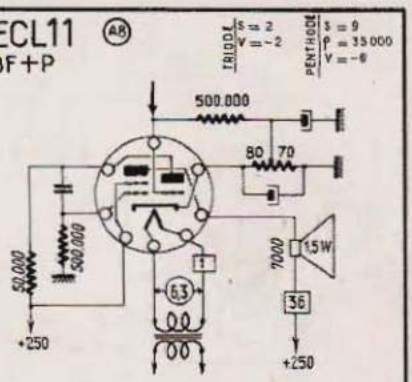
ECH83 (N)

C(V)



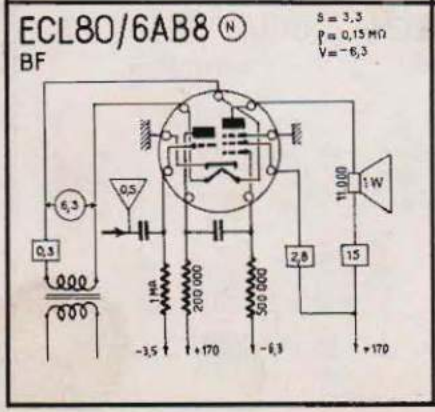
ECL11 (AB)

BF+P



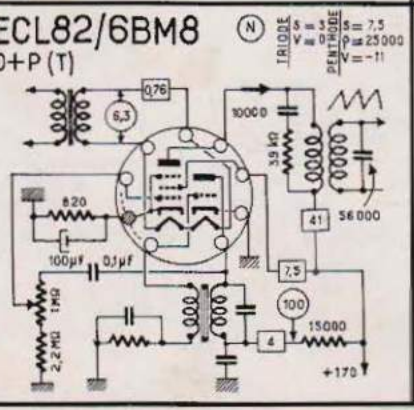
ECL80/6AB8 (N)

BF



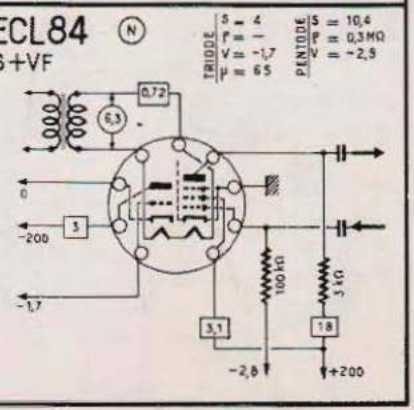
ECL82/6BM8 (N)

0+P (T)



ECL84 (N)

S+VF

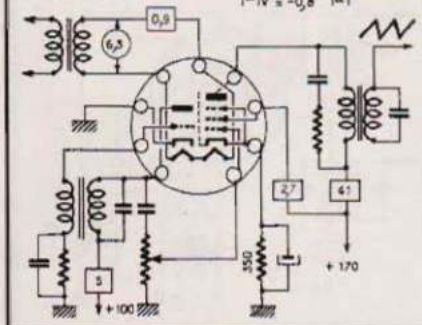


ECL85 (N)

0+P(T)

TRIODE: S = 4,5 / μ = 30 / Ri = 7,6 kΩ / V = −0,8

PENTODE: S = 7,5 / Ri = 25 kΩ / V = −15

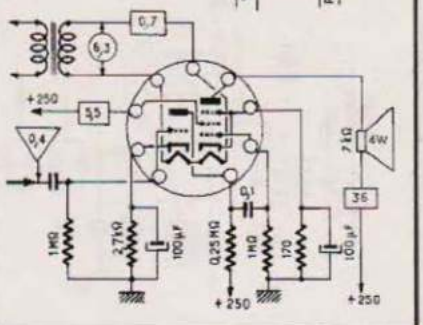


ECL86 (N)

BF +P

TRIODE: S = 1,6 / μ = 100 / Ri = 1,7

PENTODE: S = 10 / Ri = 45 kΩ / V = −7

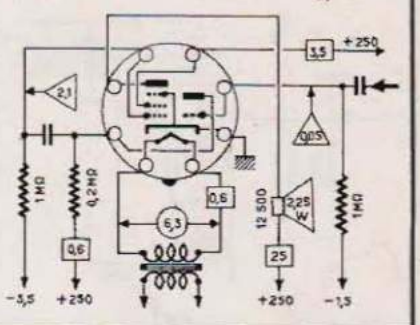


ECL113 (R)

BF+P

TRIODE: V = 1,5

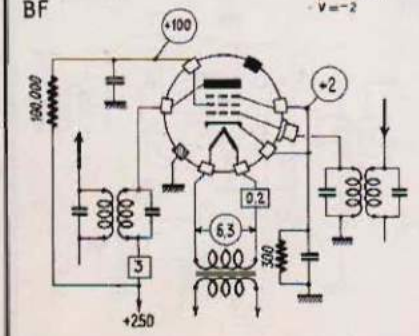
PENTODE: S = 8,5 / Ri = 40 000 / V = 3,5



EF6 (T)

BF

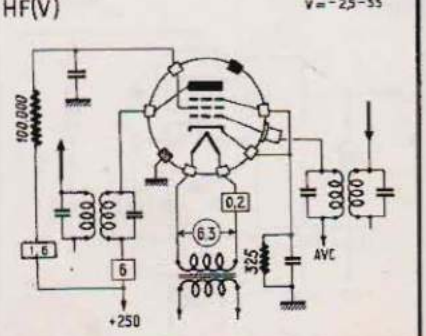
S = 2 / Ri = 2,5 MΩ / V = −2



EF9 (T)

HF(V)

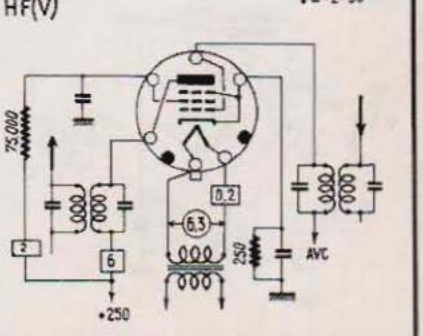
S = 2,2 / Ri = 1,25 MΩ / V = −2,5−55



EF11 (AB)

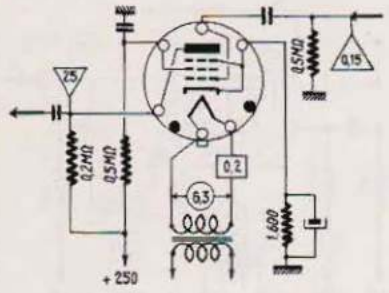
HF(V)

S = 2,2 / Ri = 2 MΩ / V = −2−55



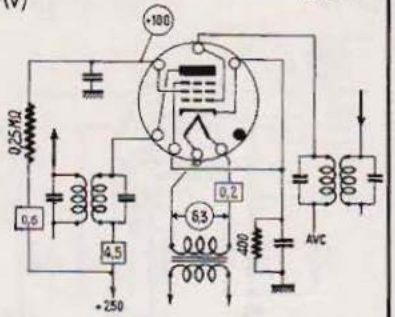
EF12 (A8)
BF

S = 2,1
P = ~2 MΩ
V = -2



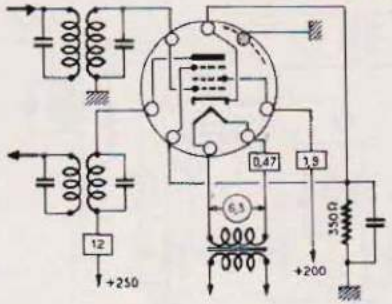
EF13 (A8)
HF(V)

S = 2,3
P = 0,5 MΩ
V = -2-17



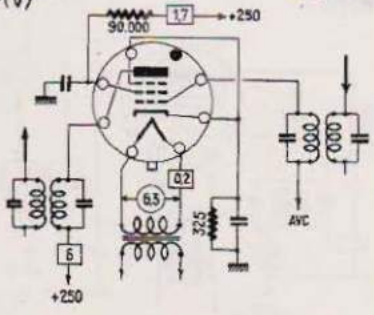
EF14 (A8)
HF(T)

S = 7
P = 0,18 MΩ
V = -5
Ra = 1000 Ω



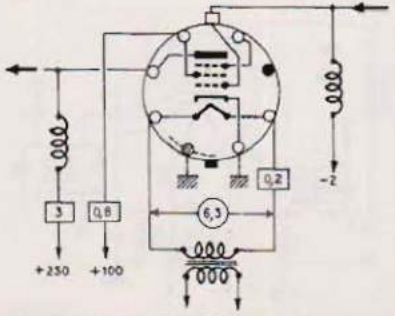
EF22 (L)
HF(V)

S = 2,2
P = 1,2 MΩ
V = 2,5-46



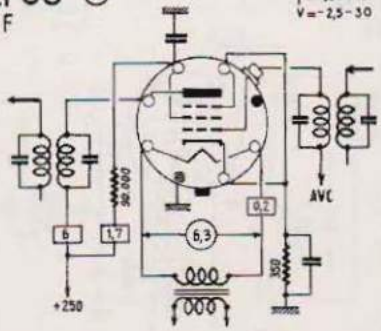
EF37A (O)
HF(M)

S = 1,8
P = 2,5 MΩ
V = -2



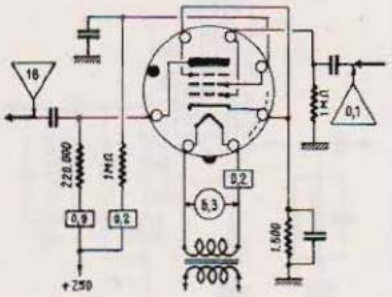
EF39 (O)
HF

S = 2,2
P = 1,25 MΩ
V = -2,5-30



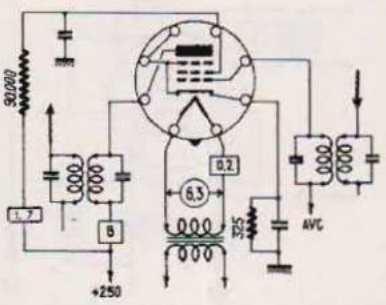
EF40 Ⓡ
BF

S = 1,85
ρ = 2,5MΩ
V=-2



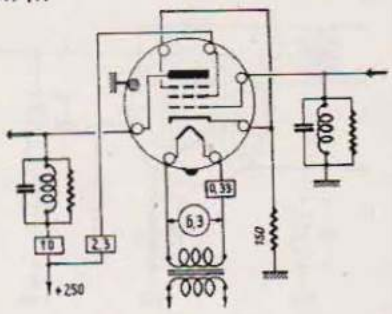
EF41/6CJ5 Ⓡ
HF(V)

S = 2,2
ρ = 1MΩ
V=-2,5-39



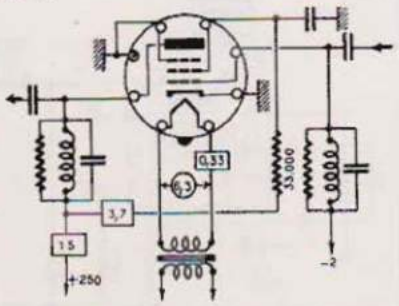
EF42 Ⓡ
HF(T)

S = 3,5
ρ = 0,5MΩ
V=-2



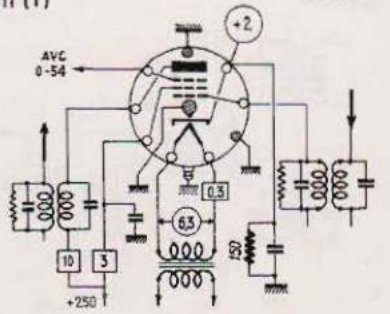
EF43 Ⓡ
HF(T)

S = 6,4
ρ = 0,7MΩ
V=-2



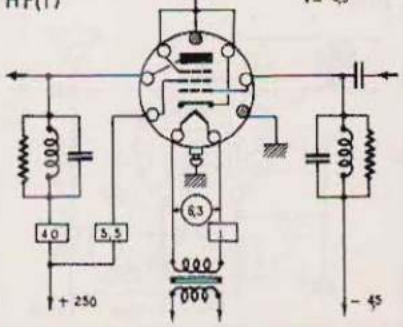
EF50 Ⓢ
HF(T)

S = 6,5
ρ = 1MΩ
V=-2



EF55 Ⓛ
HF(T)

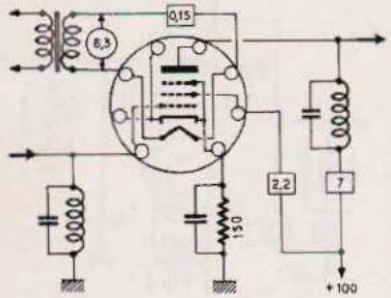
S = 12
ρ = 55000
V=-4,5



EF72 (SM)

HF

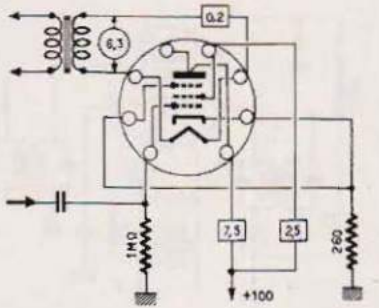
S = 5
ρ = 0,25 MΩ
V = −1,4



EF73 (SM)

BF

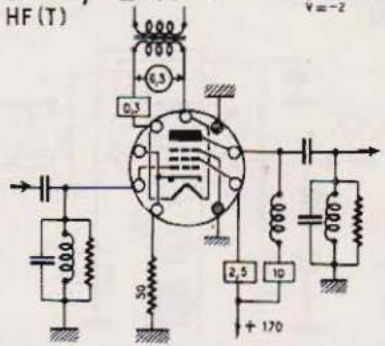
S = 3,25
ρ = 250
V = −2



EF80/6BX6 (N)

HF (T)

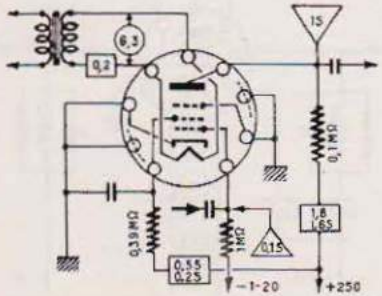
S = 7,4
ρ = 0,4 MΩ
V = −2



EF83 (N)

BF(V)

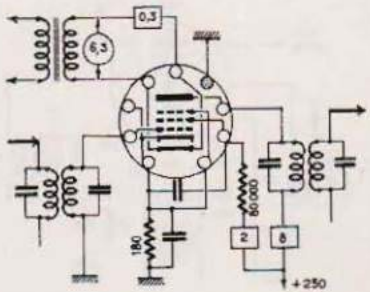
S = 1,6
ρ = 1,6 MΩ
V = −1,6



EF85/6BY7 (N)

H(T)(FM)

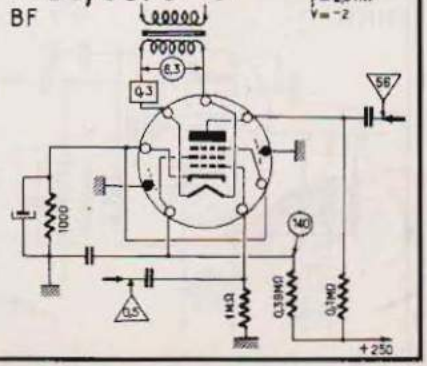
S = 5,7
ρ = 0,5 MΩ
V = −1,8



EF86/6CF8 (N)

BF

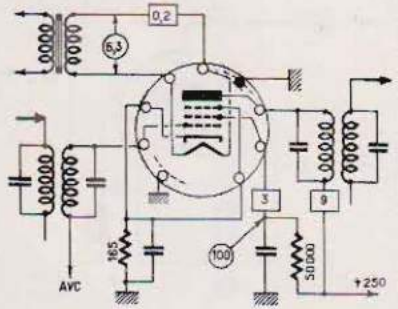
S = 1,85
ρ = 2,5 MΩ
V = −2



EF89/6DA6 (N)

HF(V)

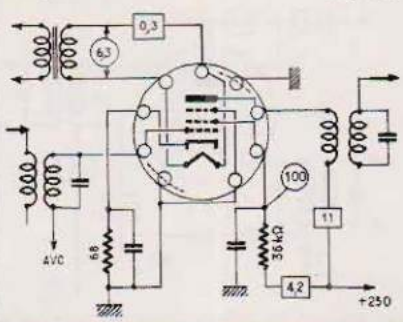
S = 3,6
ρ = 1,5 MΩ
V = −2 −15



EF89F (N)

HF(V)

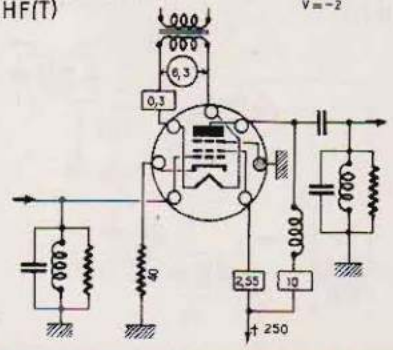
S = 4,4
ρ = 1 MΩ
V = −1 −15



EF91/6AM6 (M)

HF(T)

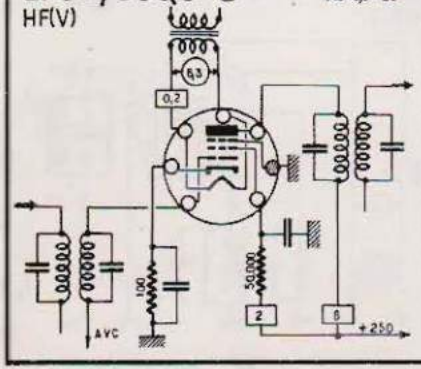
S = 7,65
ρ = 1 MΩ
V = −2



EF92/6CQ6 (M)

HF(V)

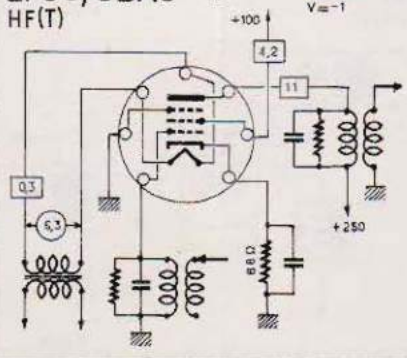
S = 2,5
V = −0,6 −20



EF93/6BA6 (M)

HF(T)

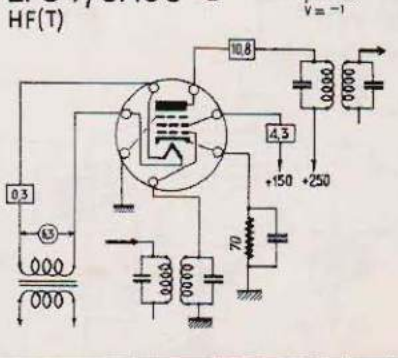
S = 4,4
ρ = 1,5 MΩ
V = −1



EF94/6AU6 (M)

HF(T)

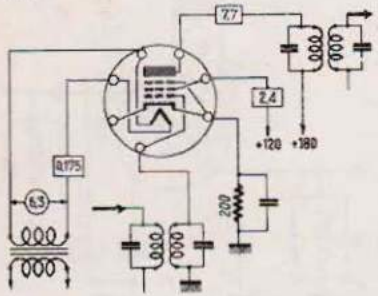
S = 5,2
ρ = 1 MΩ
V = −1



EF95/6AK5 Ⓜ

HF (T)

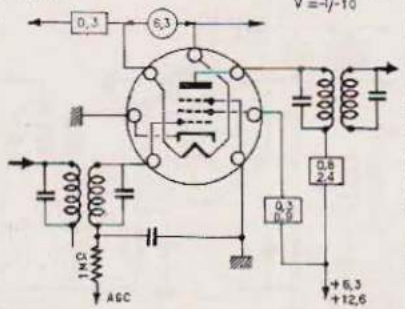
S = 5,1
ρ = 0,65 MΩ
V = −2



EF97 Ⓜ

HF (V)

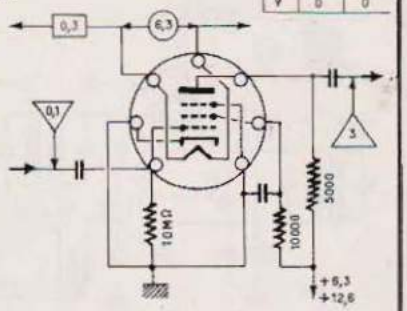
Va	6,3	12,6
S	0,9	1,6
ρ	50 kΩ	50 kΩ
V	−1/−10	



EF98 Ⓜ

BF

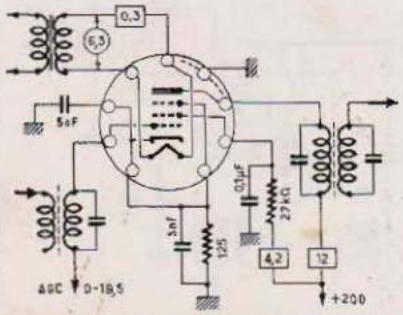
Va	6,3	12,5
S	1,8	3
ρ	50 kΩ	50 kΩ
V	0	0



EF183 Ⓝ

HF V (T)

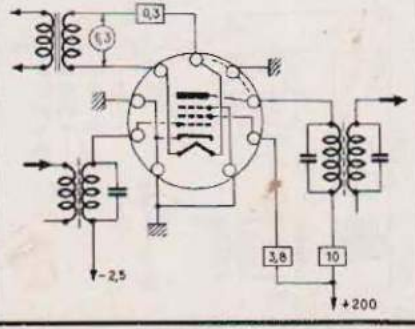
S = 12,5
ρ = 0,3 MΩ
V = −2 − 19,5



EF184 Ⓝ

HF(T)

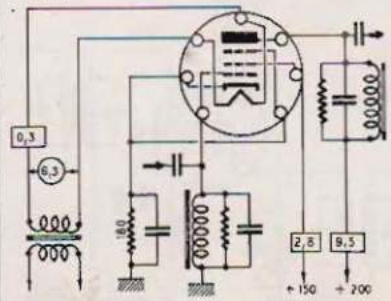
S = 15
ρ = 0,35 MΩ
V = −2,5



EF190/6CB6 Ⓜ

HF(T)

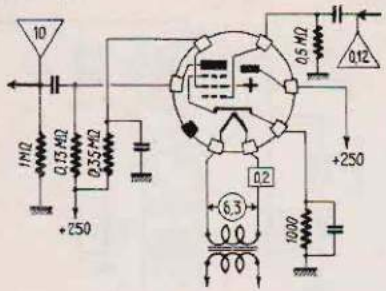
S = 6,2
ρ = 0,6 MΩ
V = −8



EFM1 ①

BF+I(V)

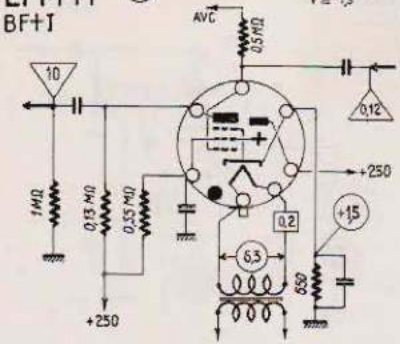
V=-2 -20



EFM11 (A8)

BF+I

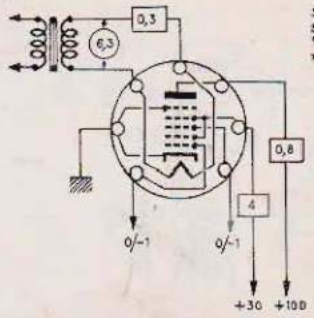
ρ = 0,7 MΩ
V=-1,5



EH90/6CS6 (M)

HF

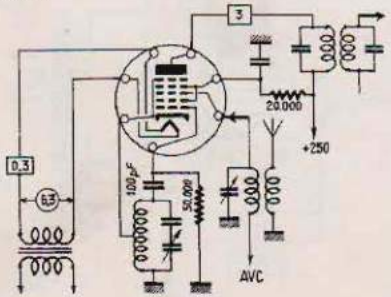
Sg1 = 0,55
ρ = 1MΩ
Vg1 = -?
Vg3 = 0
Sg3 = 1,25
S = 0,7MΩ
Vg1 = 0
Vg3 = -1



EK90/6BE6 (M)

C(V)

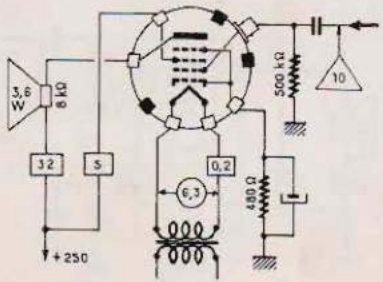
Sc = 0,455
ρ = 1MΩ
V=-1,5



EL2 ①

P

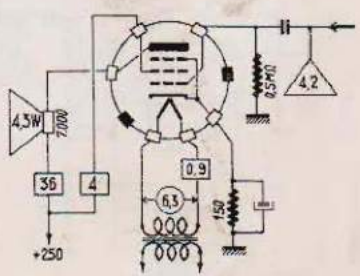
S = 2,8
ρ = 70.000
V=-18



EL3N ①

P

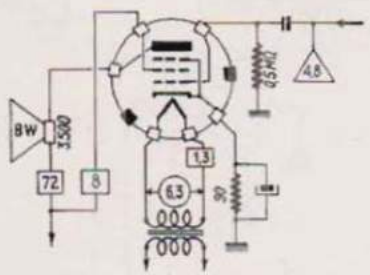
S = 9,5
ρ = 50.000
V=-6



EL6/4699 ①

P

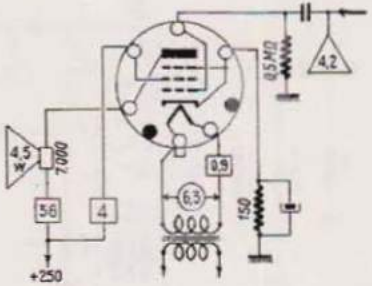
S = 14,5
ρ = 20000
V = -7



EL11 (A8)

P

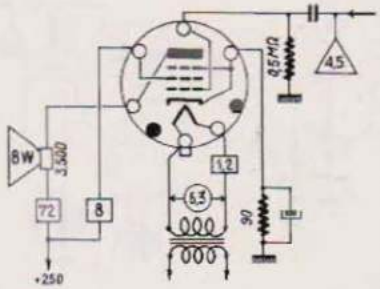
S = 5
ρ = 50000
V = -6



EL12 (A8)

P

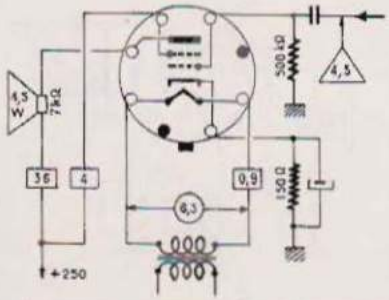
S = 15
ρ = 25000
V = -7



EL33/6V6 ⓪

P

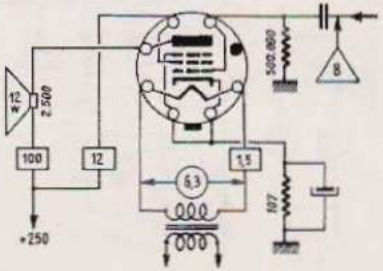
S = 9
ρ = 50000
V = -6



EL34/6CA7 ⓪

P

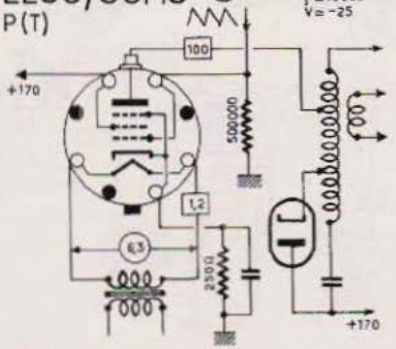
S = 11
ρ = 15000
V = -12



EL36/6CM5 ⓪

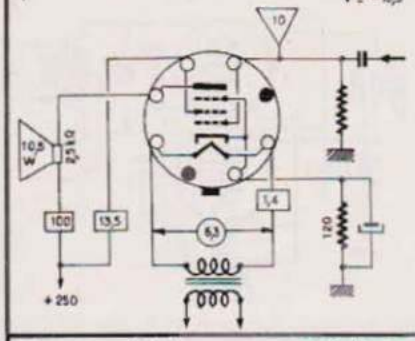
P(T)

S = 8
ρ = 10000
V = -25



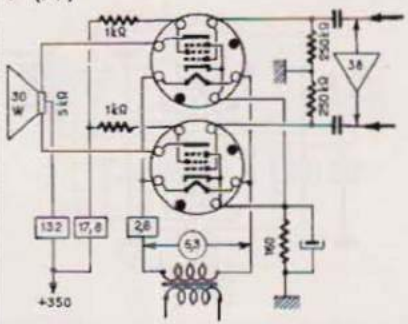
EL37 ⓪

P



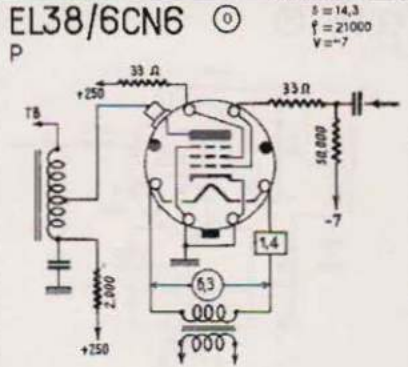
EL37 ⓪

P (PP)



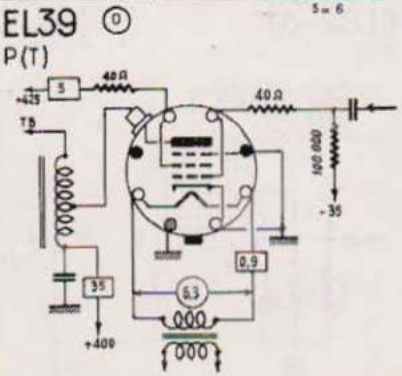
EL38/6CN6 ⓪

P



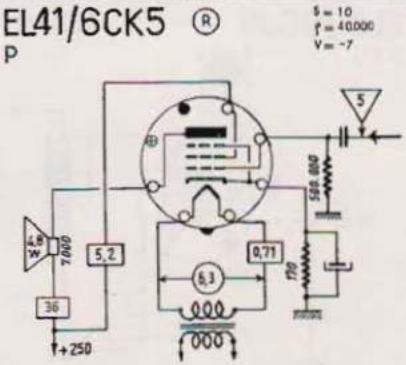
EL39 ⓪

P(T)



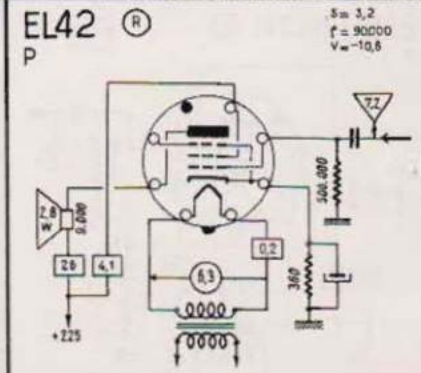
EL41/6CK5 Ⓡ

P



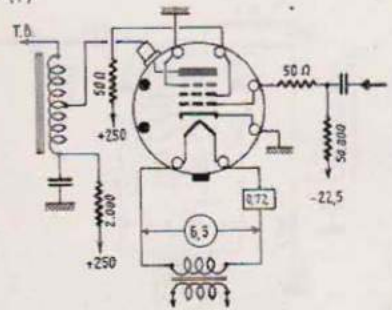
EL42 Ⓡ

P



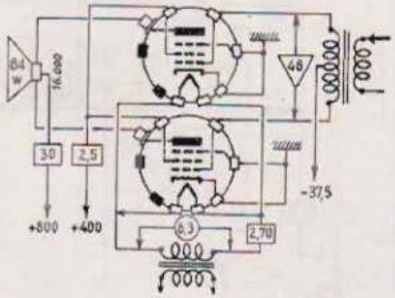
EL44 (R)
P(T)

S = 5
V = -22,5



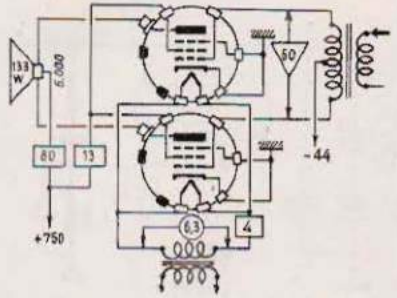
EL50 (T)
P(Cl. AB)

S = 4
ρ = 50.000
V = -37



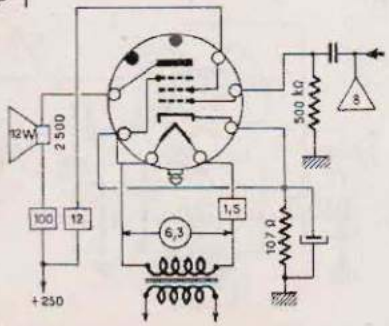
EL51 (T)
P(Cl. AB)

S = 7
ρ = 55.000
V = -44



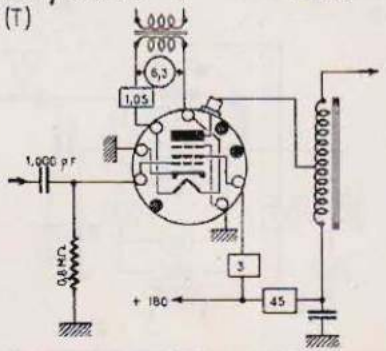
EL60 (EL34) (L)
P T

S = 11
ρ = 15.000
V = -12



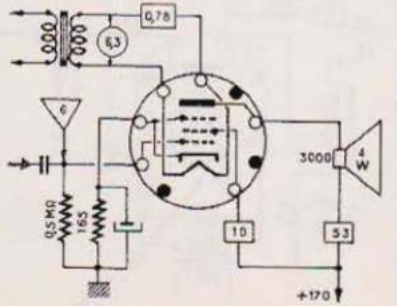
EL81/6CJ6 (N)
P(T)

S = 8,5
V = -23,5



EL82 (N)
P(T)

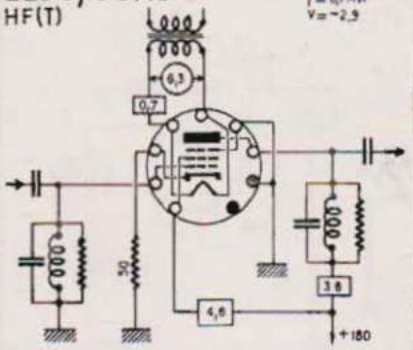
S = 9,5
ρ = 20.000
V = -10,4



EL83/6CK6 (N)

HF(T)

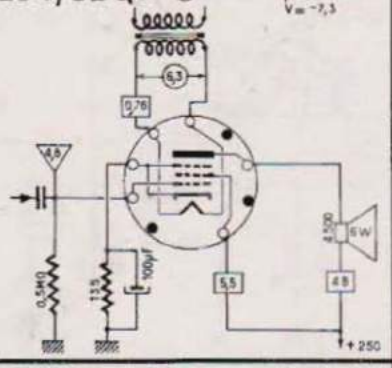
S = 10
ρ = 0,1 MΩ
V = −2,9



EL84/6BQ5 (N)

P

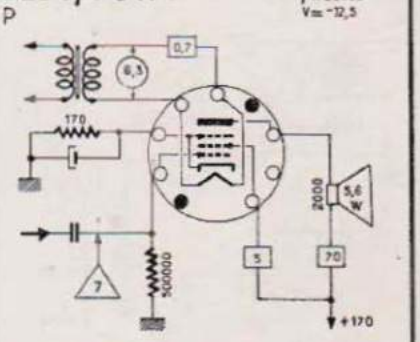
S = 11,3
ρ = 38000
V = −7,5



EL86/6CW5 (N)

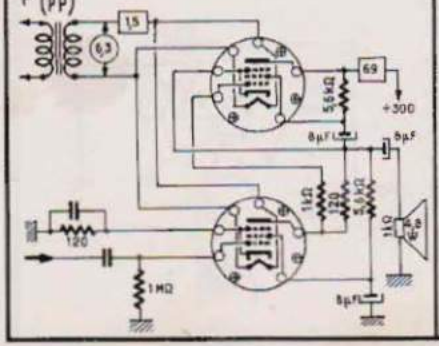
P

S = 10
ρ = 25000
V = −12,5



EL86 (N)

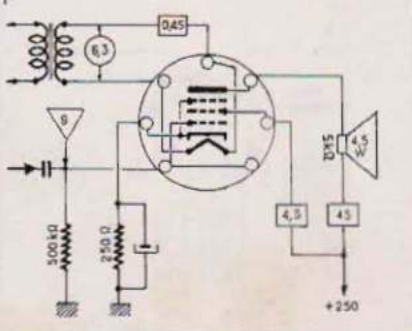
P (pp)



EL90/6AQ5 (M)

P

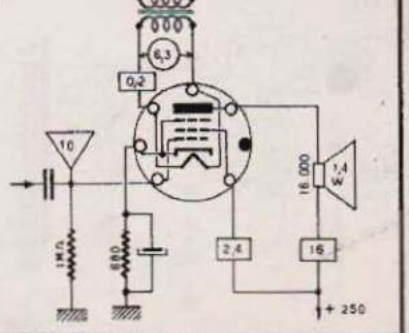
S = 4,1
ρ = 32000
V = −12,5



EL91/6AM5 (M)

P

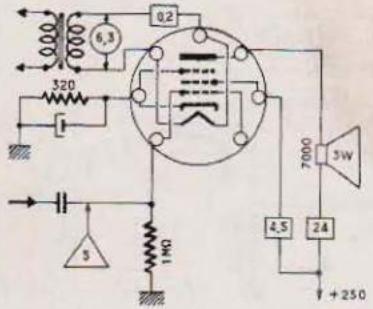
S = 2,6
ρ = 0,13 MΩ
V = −12,5



EL95/6DL5 (M)

P

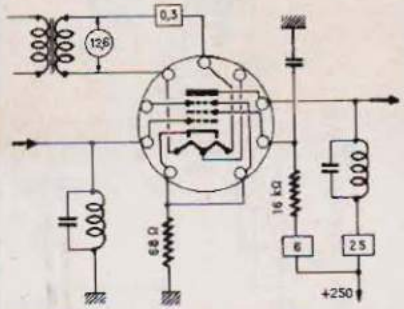
S = 5
ρ = 75.000
V = -9



EL180/12BY7 (N)

HF VF(T)

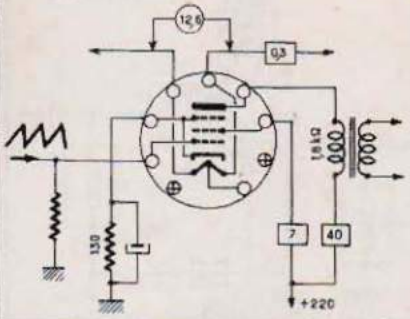
S = 12
ρ = 110 kΩ
V = -0,5



EL183 (N)

VF(T)

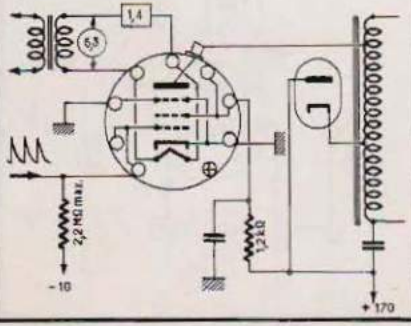
S = 25
ρ = 20 kΩ
V = -2,1



EL500 (MN)

P(T)

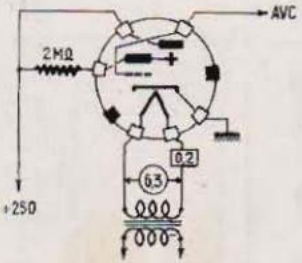
V = -10



EM1/EM3 (T)

I

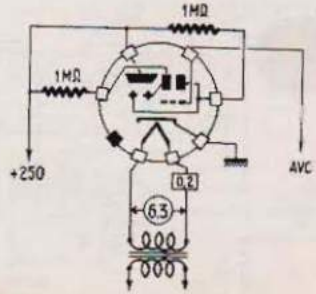
V = 0-5



EM4 (T)

I

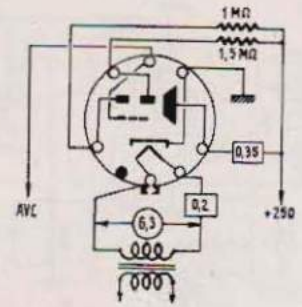
V = 0-16



EM11 (A6)

V= 0-16
V'= 0-5

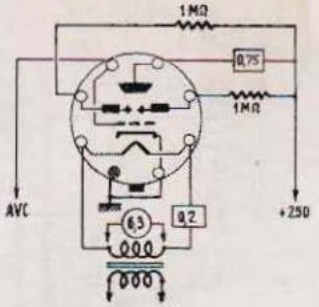
I



EM34/6CD7 (O)

V= 0-16
V'= 0-5

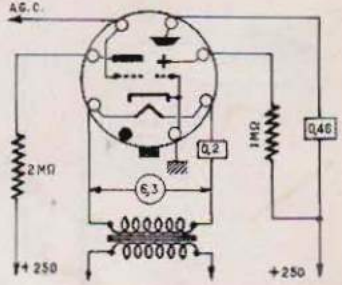
I



EM35 (O)

V= 0-20

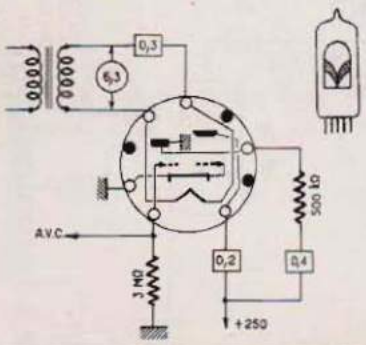
I



EM80/6BR5 (N)

V= -1 -16

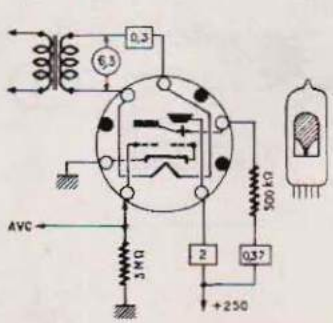
I



EM81/6DA5 (N)

V= -1 -10,5

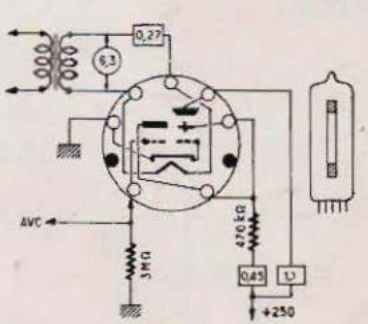
I



EM84 (N)

V= 0-22

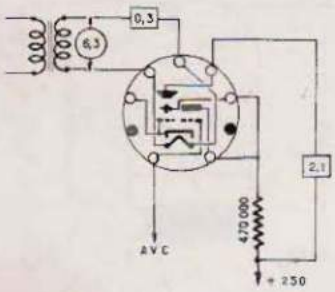
I



EM85/6DU6 (N)

V= 0 -16

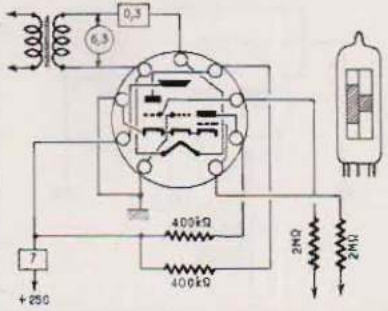
I



EMM801 (N)

V= 0-20

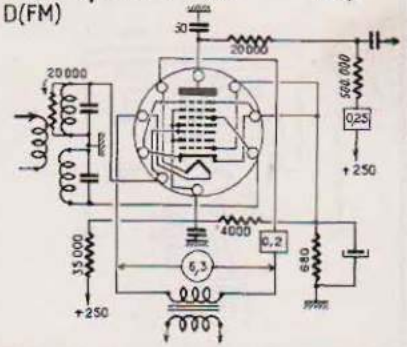
I(FM)



EQ80/6BE7 (N)

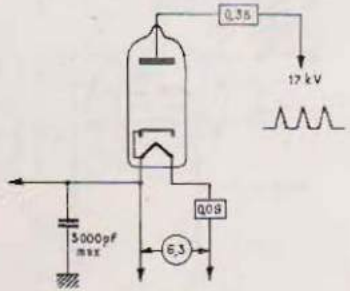
P = 3 MΩ
V = -4,5

D(FM)



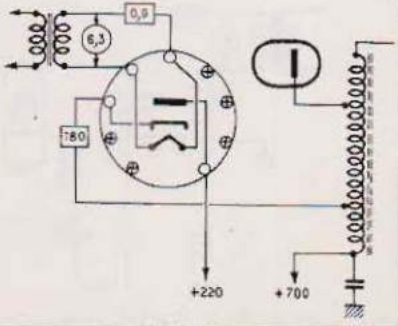
EY51/6X2 (S)

R(T)THT



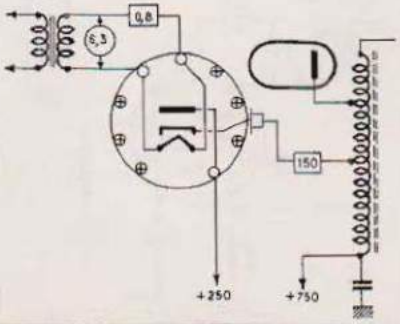
EY80 (N)

D(T)



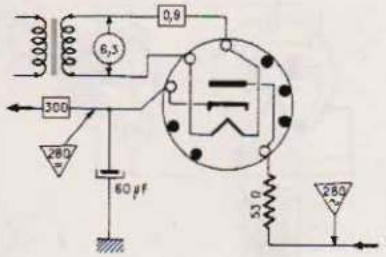
EY81 (N)

D(T)



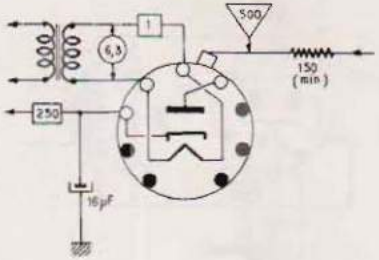
EY82/6N3 (N)

R



EY84 (N)

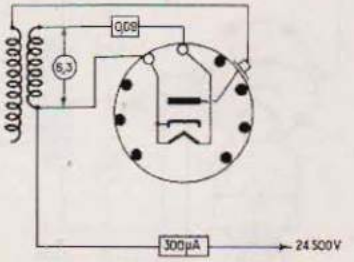
R



EY86/6S2 (EY87)

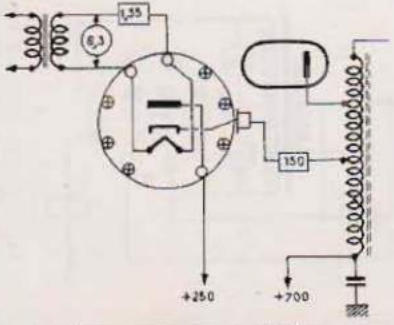
R(T) (N)

V afx. = 27.500



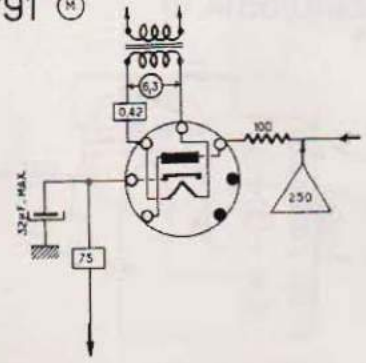
EY88 (N)

D(T)



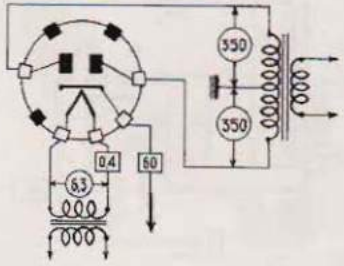
EY91 (M)

R



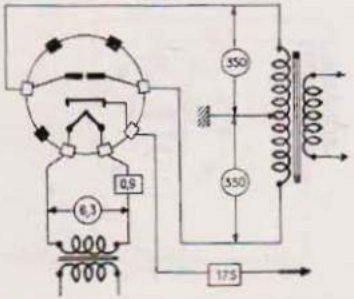
EZ2 (T)

R



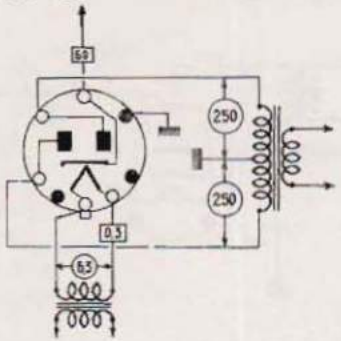
EZ4 ①

R



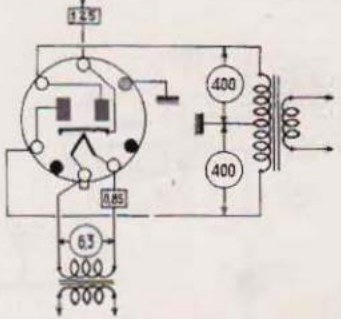
EZ11 ⑧

R



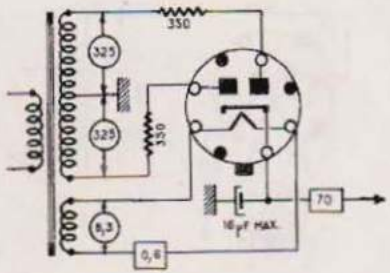
EZ12 ⑧

R



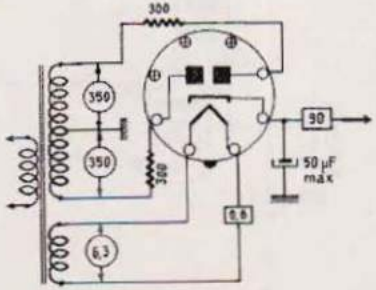
EZ35 ⓪

R



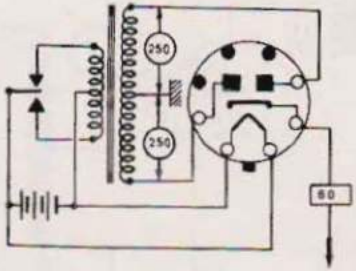
EZ40/6BT4 Ⓡ

R



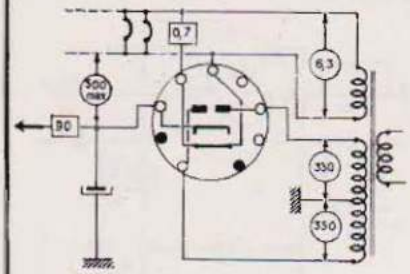
EZ41 Ⓡ

R



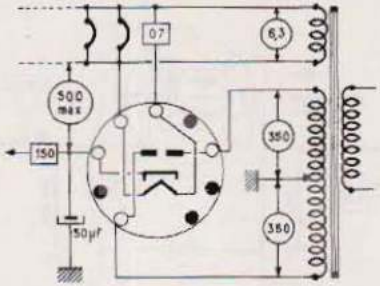
EZ80/6V4 (N)

R



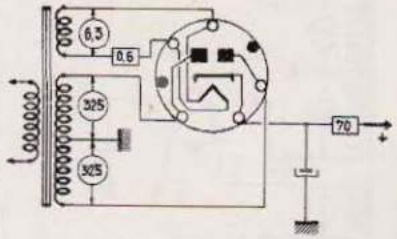
EZ81/6CA4 (N)

R



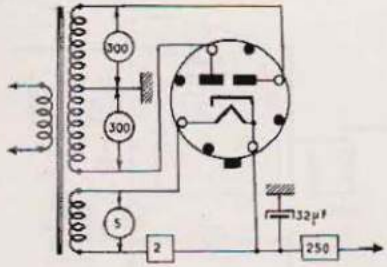
EZ90/6X4 (M)

R



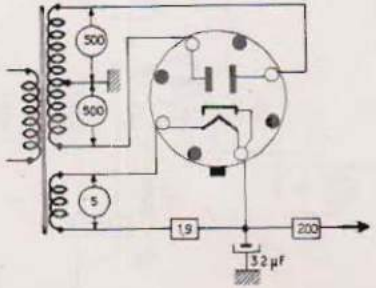
GZ32/5V4 (O)

R



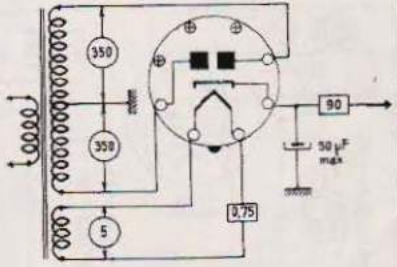
GZ34/5AR4 (D)

R



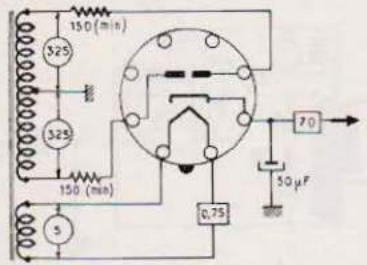
GZ40 (R)

R



GZ41 Ⓡ

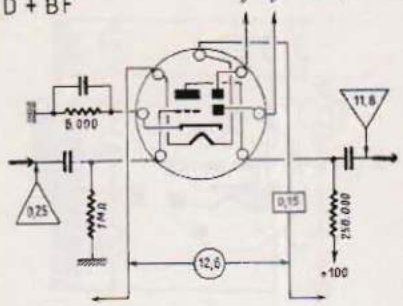
R



HBC90 / 12AT6 Ⓜ

D + BF

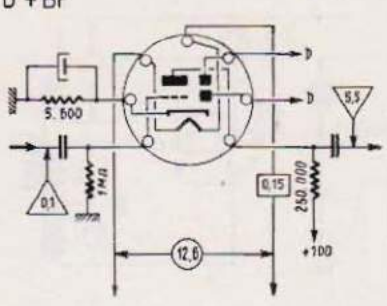
S = 1,2
ρ = 58.000
V = −3



HBC91 / 12AV6 Ⓜ

D + BF

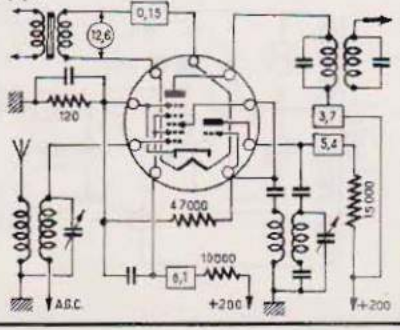
S = 1,6
ρ = 62.500
V = −2



HCH81 / 12D8 Ⓝ

C(V)

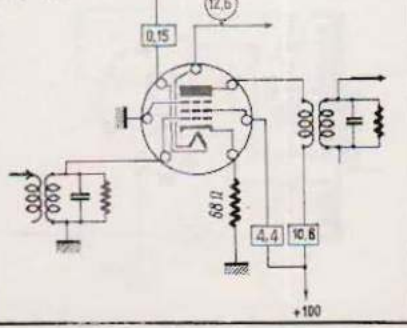
Sc = 0,77
ρ = 1 MΩ
V = −2,3−28



HF93 / 12BA6 Ⓜ

HF (T)

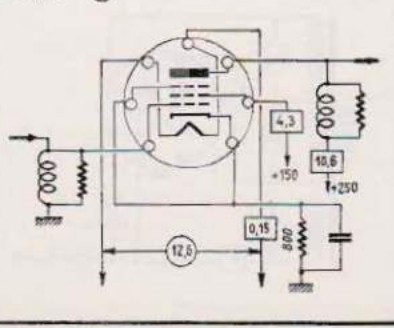
S = 4,3
ρ = 0,25 MΩ
V = −1



HF94 / 12AU6

HF (T) Ⓜ

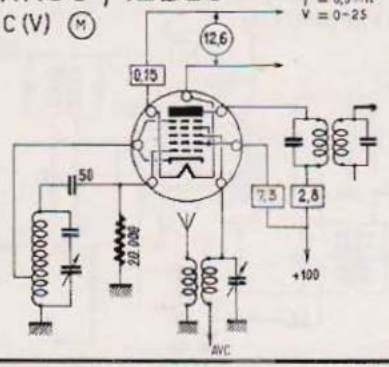
S = 5,2
ρ = 1 MΩ
V = −1



HK90 / 12BE6

C (V) (M)

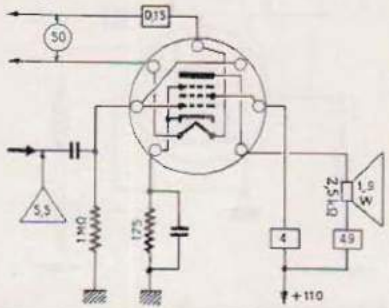
Sc = 0,45
g = 0,5 MΩ
V = 0–25



HL92 / 50C5

P (M)

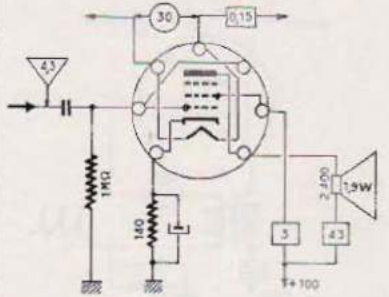
S = 7,5
g = 10000
V = –7,5



HL94 / 30A5 (M)

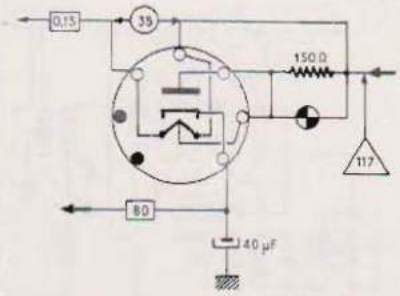
P

S = 3,2
g = 2,2 kΩ
V = –6,7



HY90 / 35W4 (M)

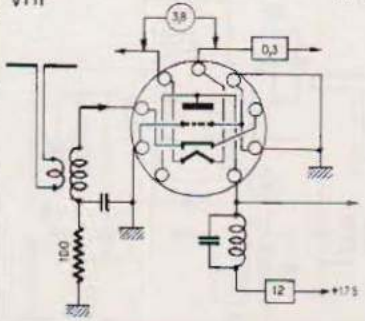
R



PC86 (N)

VHF

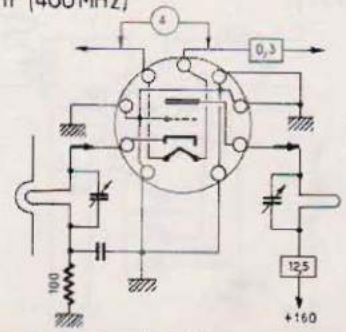
S = 14
µ = 66
V = –1,5



PC88 (N)

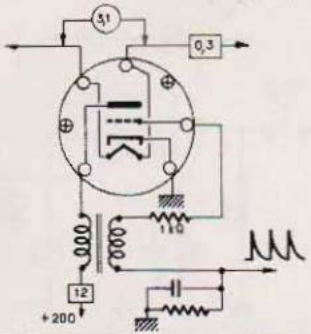
VHF (400 MHz)

S = 13,5
µ = 65



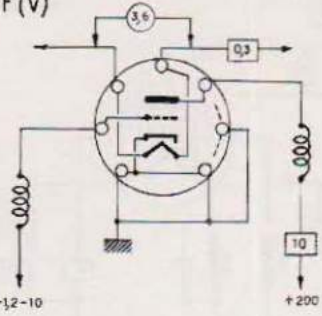
PC92 Ⓜ
0 (T)

S = 2,2
μ = 67
V = −0,9



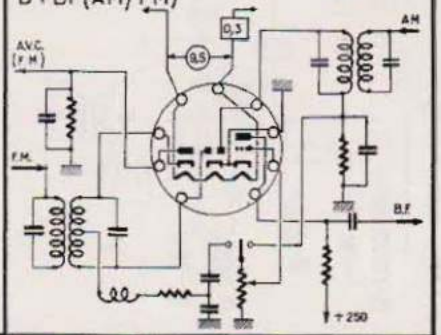
PC95 Ⓜ
VHF (V)

S = 10,5
μ = 80



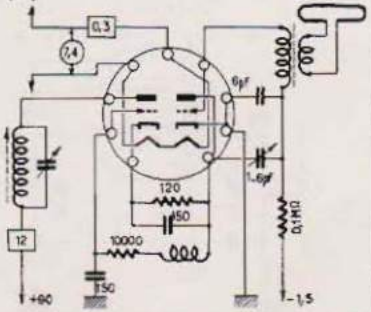
PABC80 / 9AK8 Ⓝ
D+BF (AM/FM)

S = 1,2
ρ = 58000
Vm = −3



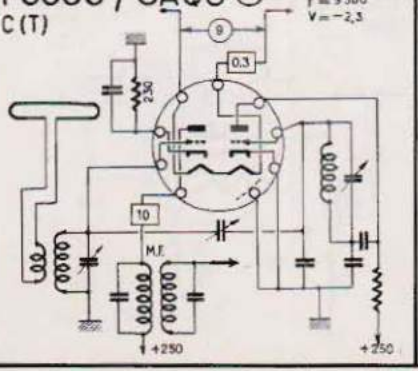
PCC84 / 7AN7 Ⓝ
HF (T)

S = 6
ρ = 10000
V = −1,5



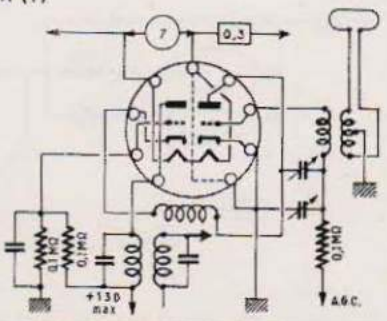
PCC85 / 9A08 Ⓝ
C (T)

S = 6
ρ = 9500
V = −2,3



PCC88 Ⓝ
HF (T)

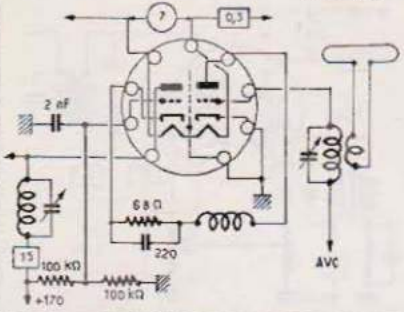
S = 12,5



PCC89 (N)

HF(V) (T)

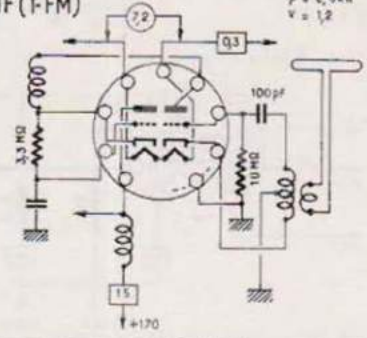
S = 12,5
ρ = 2,8 kΩ
V = 1,2 –12
Req = 300 Ω



PCC189 (N)

VHF (T-FM)

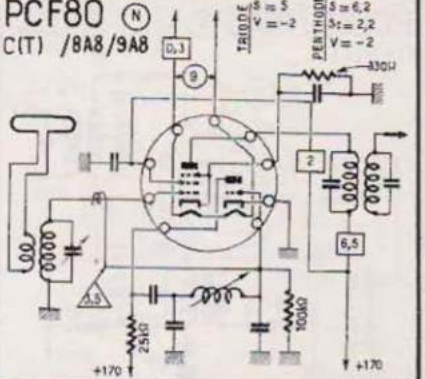
S = 12,5
ρ = 3,4
ρ = 2,6 kΩ
V = 1,2



PCF80 (N)

C(T) /8A8/9A8

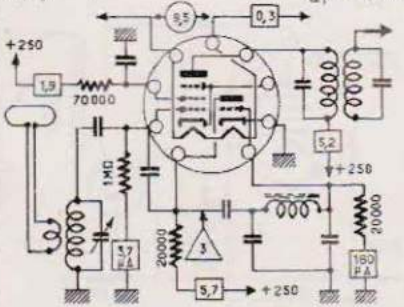
TRIODE S = 5 V = –2
PENTHODE S = 6,2 S1 = 2,2 V = –2



PCF82/9U8 (N)

C(T)

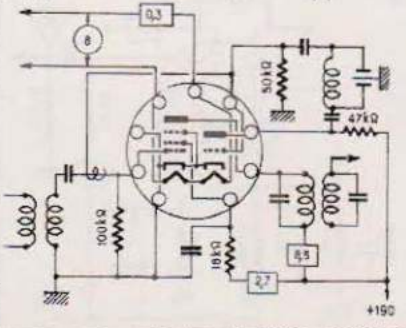
TRIODE S = 8,5 ρ = 5 kΩ V = –1
PENTHODE S = 5,2 S1 = 1,9 ρ = 0,4 MΩ V = + 0,9 –10



PCF86 (N)

C(T)

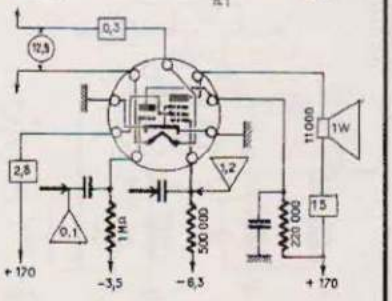
TRIODE S = 6 ρ = 17 V = –3
PENTHODE S = 12 ρ = 0,35 MΩ S1 = 4,5



PCL81 (N)

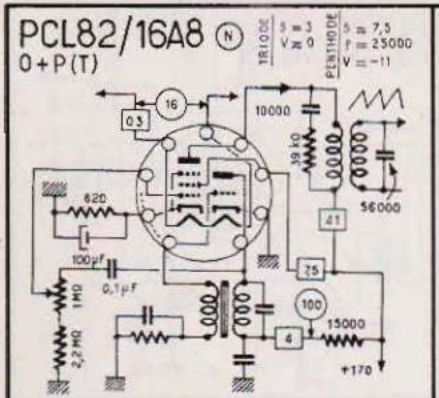
BF + P(T)

PENTHODE S = 3,3 ρ = 0,15 MΩ V = –6,3
TRIODE S = 1,9



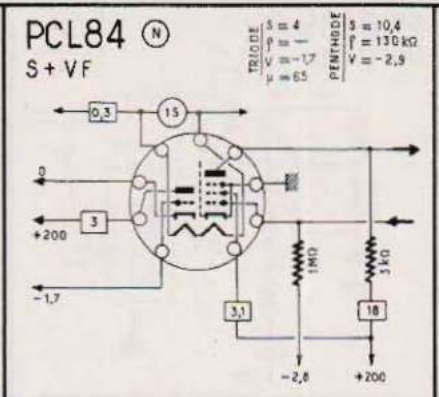
PCL82/16A8 (N)

0+P(T)



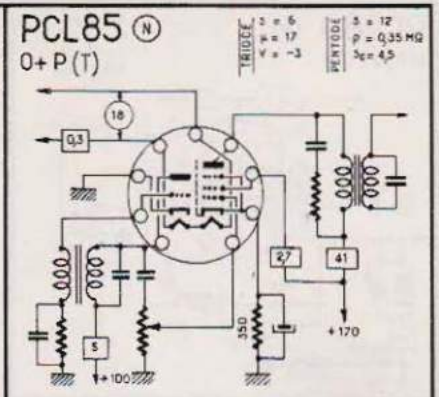
PCL84 (N)

S+VF



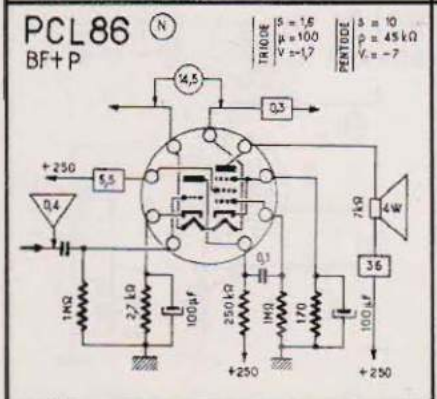
PCL85 (N)

0+P(T)



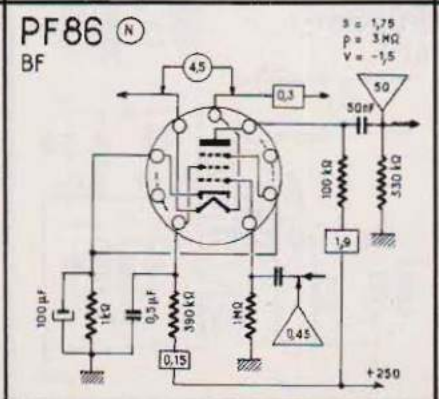
PCL86 (N)

BF+P



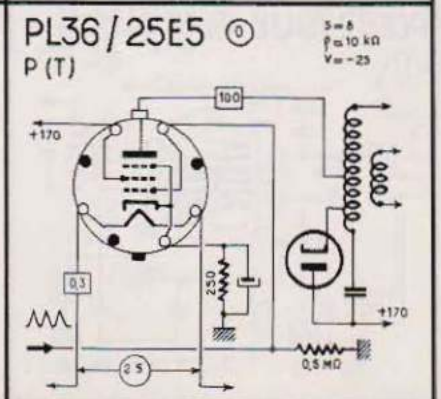
PF86 (N)

BF



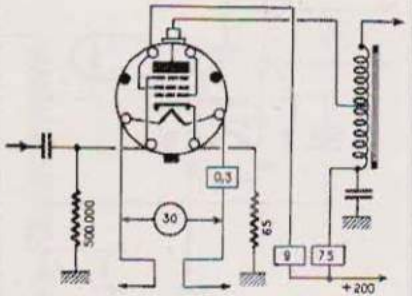
PL36/25E5 (O)

P(T)



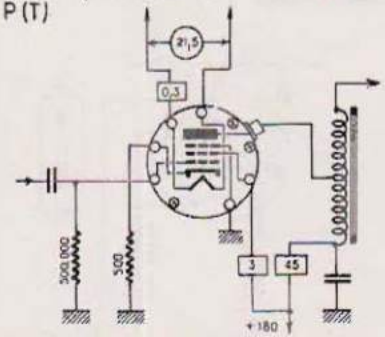
PL38 ⓞ
P(T)

S = 13,5
ρ = 20.000
V = −5,5



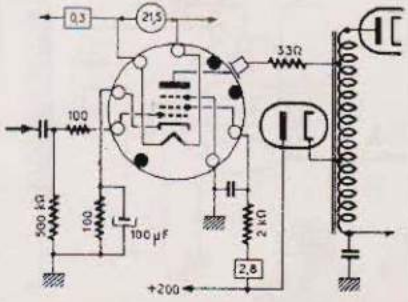
PL81 / 21A6 Ⓝ
P(T)

S = 6,5
V = −23,5



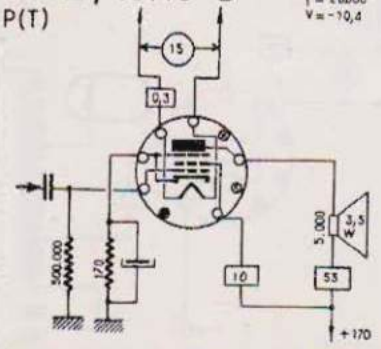
PL81F Ⓝ
P(T)

S = 6
ρ = 11 kΩ
V = − 28



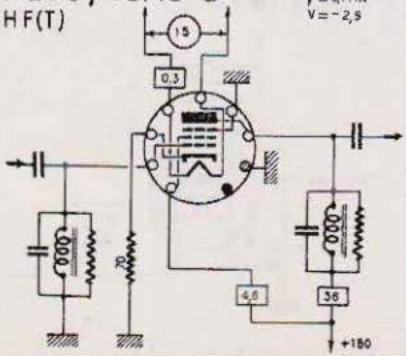
PL82 / 16A5 Ⓝ
P(T)

S = 9,5
ρ = 20000
V = −10,4



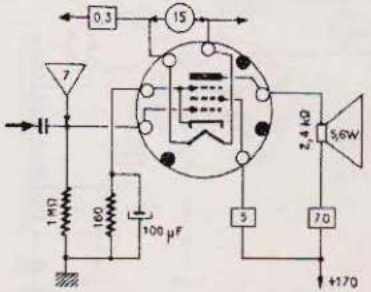
PL83 / 15A6 Ⓝ
HF(T)

S = 10
ρ = 0,1 MΩ
V = −2,5



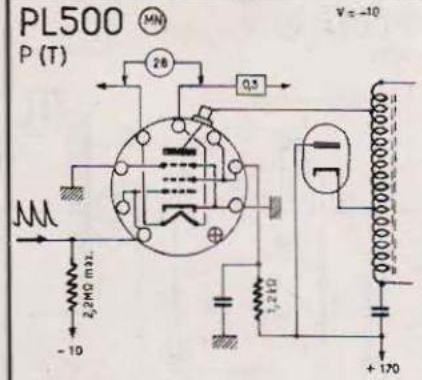
PL84 Ⓝ
P

S = 10
ρ = 23 kΩ
V = −12,5



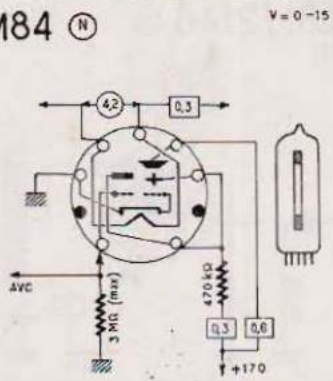
PL500 (MN)

P (T)



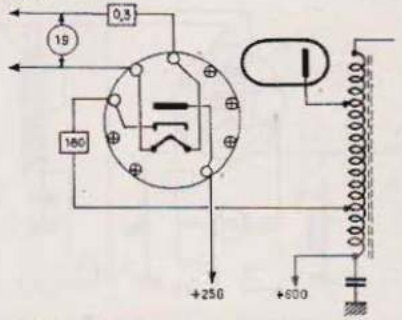
PM84 (N)

I



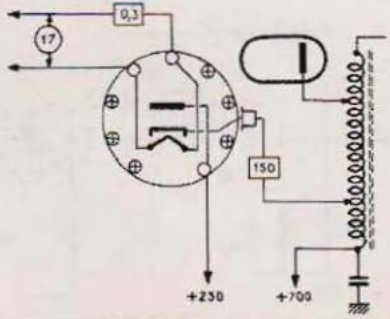
PY80/19W3 (N)

D(T)



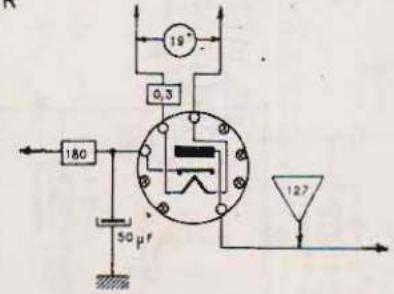
PY81 (N)

D(T)



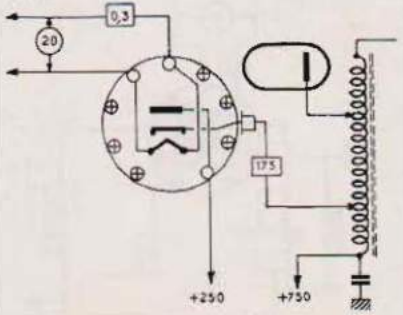
PY82/19Y3 (N)

R

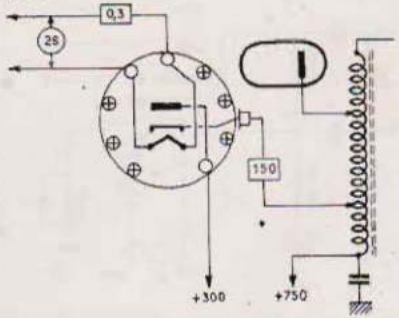


PY83 (N)

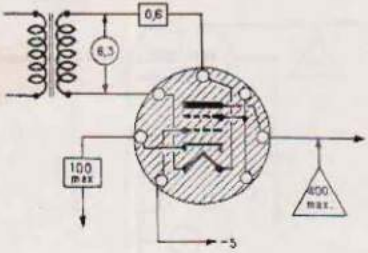
D(T)



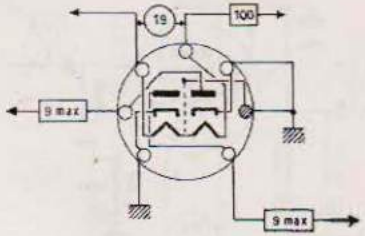
PY88 (N)
D(T)



RL21/2D21 (M)
THYR.

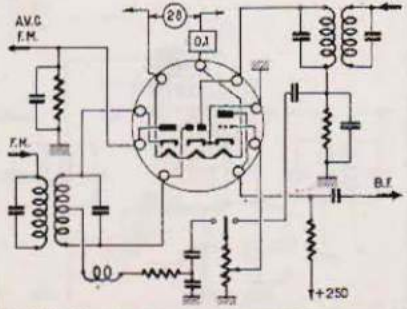


UAA91 (M)
D



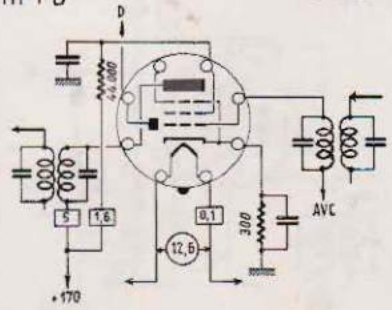
UABC80 (N)
D+BF(AM/FM)

S = 1,2
P = 58.000
V = -3



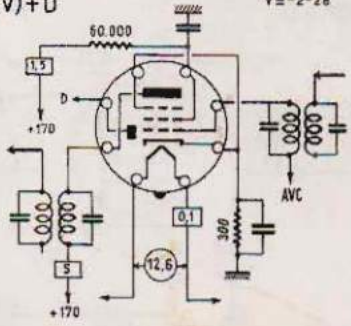
UAF41 (R)
HF+D

S = 1,6
P = 1,2 MΩ
V = -2 -22



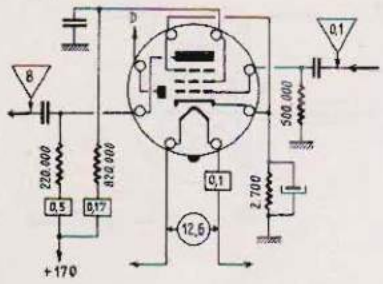
UAF42 (R)
HF(V)+D

S = 2
P = 0,9 MΩ
V = -2 -28



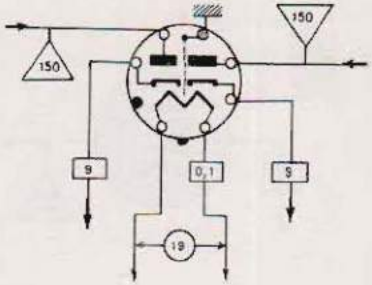
UAF42/12S7 Ⓡ

D+BF



UB41 Ⓡ

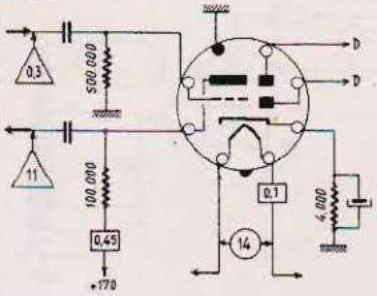
D



UBC41/14L7 Ⓡ

D+BF

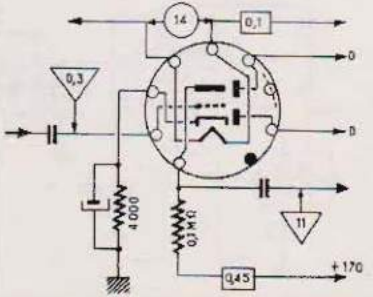
S = 1,65
ρ = 42000
V = 1,5



UBC81 Ⓝ

BF+D

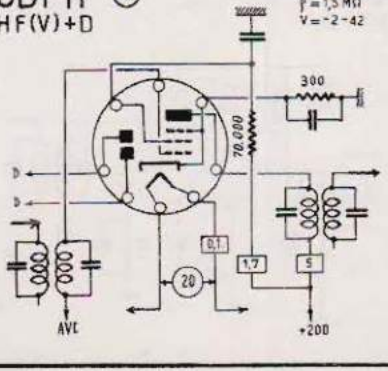
S = 1,65
ρ = 42.000
V = 1,5



UBF11 Ⓐⓑ

HF(V)+D

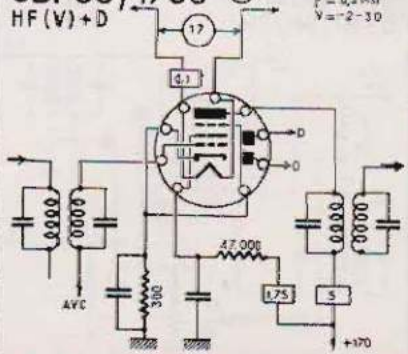
S = 1,6
ρ = 1,5 MΩ
V = -2-42



UBF80/17C8 Ⓝ

HF(V)+D

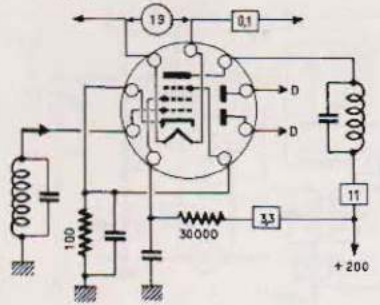
S = 2,2
ρ = 0,5 MΩ
V = -2-30



UBF89 (N)

HF+D(T)

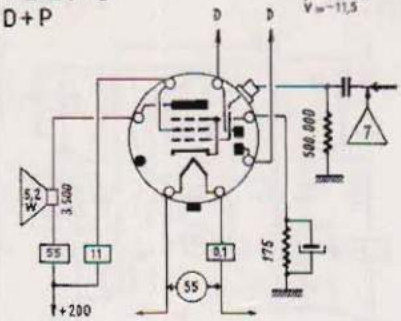
S = 4,5
P = 0,6 MΩ
V = −1,5



UBL1 (O)

D+P

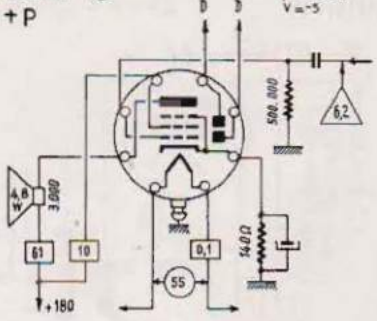
S = 8,5
P = 20.000
V = −11,5



UBL21 (L)

D+P

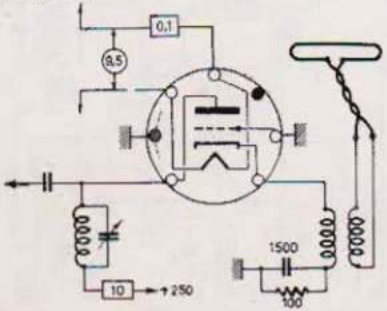
S = 9
P = 22.000
V = −5



UC92 (N)

HF(VHF)

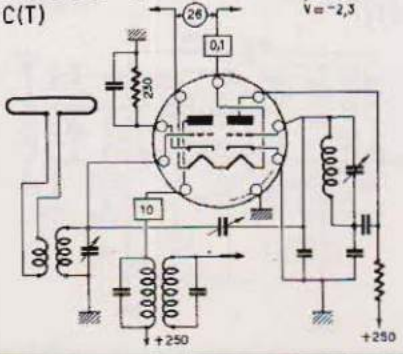
S = 5
P = 12.000
V = −2



UCC85 (N)

C(T)

S = 6
P = 3.500
V = −2,3

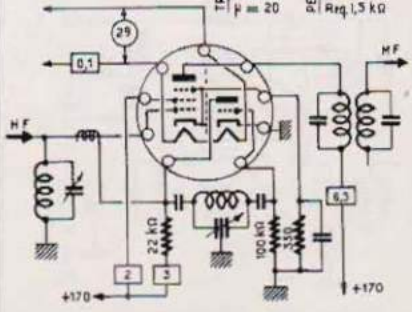


UCF80 (N)

C

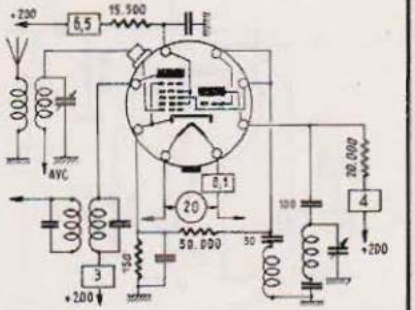
TRIODE
S = 5
V = −2
P = 20

PENTHODE
S = 6,2
S = 0,4 MΩ
V = −2
Rrg. 1,5 kΩ



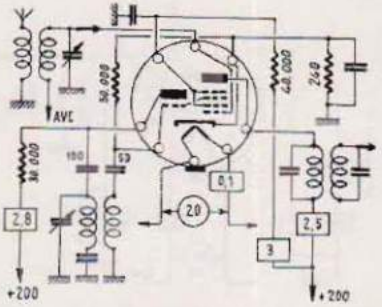
UCH4 ⓞ
HF(V)+BF

HEXODE: S = 2,2 ρ = 0,7 MΩ V = -21-27
TRIODE: S = 3,2 ρ = 8000 V = -2



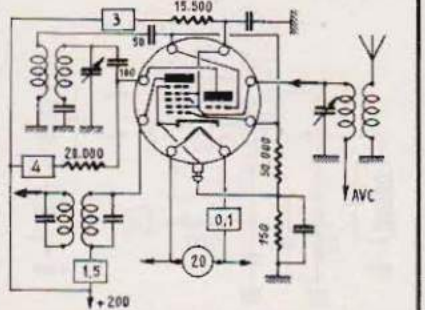
UCH11 ⓐⓑ
C(V)

Sc = 0,75 ρ = 1 MΩ V = -2-18



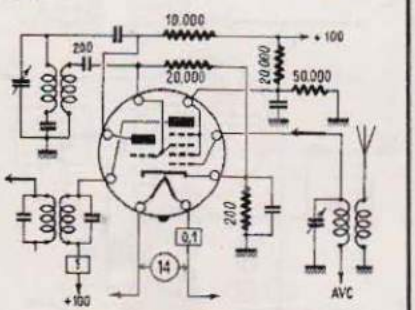
UCH21 Ⓛ
C(V)

Sc = 0,58 ρ = 1 MΩ V = -2-28



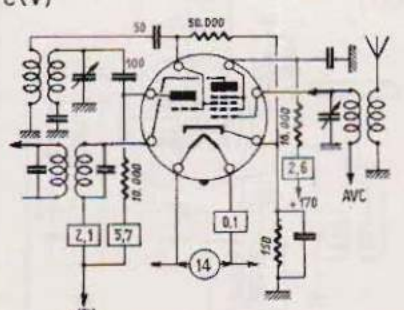
UCH41 Ⓡ
C(V)

Sc = 0,5 ρ = 1 MΩ V = -1-14



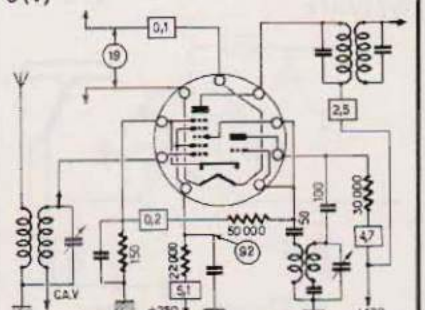
UCH42 / 14K7 Ⓡ
C(V)

Sc = 0,67 ρ = 1 MΩ V = -1,8-25



UCH81 / 19D8 Ⓝ
C(V)

S = 0,7 ρ > 1 MΩ V = -2 -24

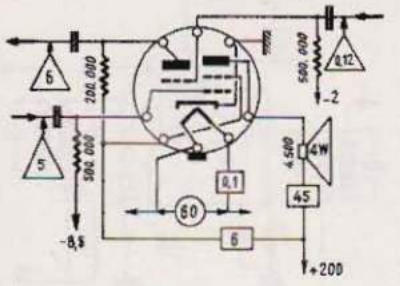


UCL11 (A6)

BF + P

P: S = 9, ρ = 18.000, V = −8,5

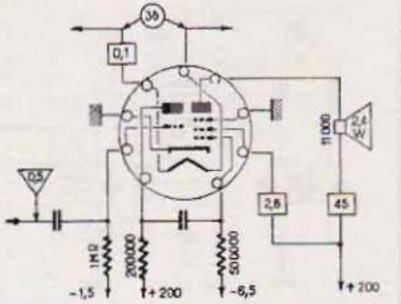
BF: S = 2,7, ρ = 30.000, V = −2



UCL81 (N)

BF + P

S = 8,7, ρ = 18.000, V = −6,5

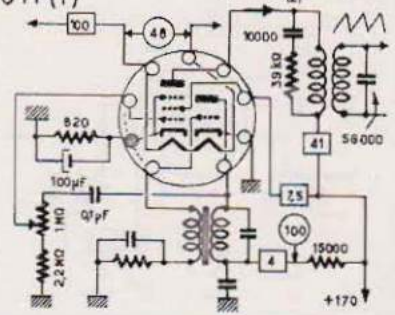


UCL82 (N)

0+P(T)

Triode: S = 3, V = 0

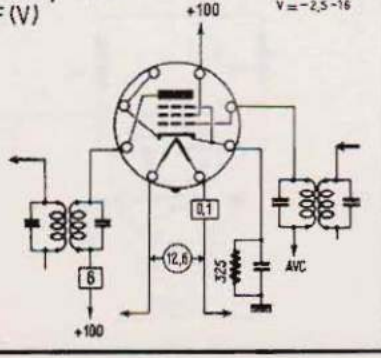
Pentode: S = 7,5, ρ = 25.000, V = −11



UF41 / 12AC5 (R)

HF(V)

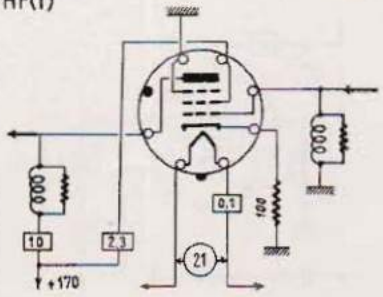
S = 1,5, ρ = 0,6 MΩ, V = −2,5 −16



UF42 (R)

HF(T)

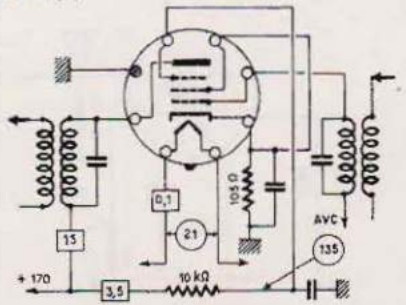
S = 8,5, ρ = 0,3 MΩ



UF43 (R)

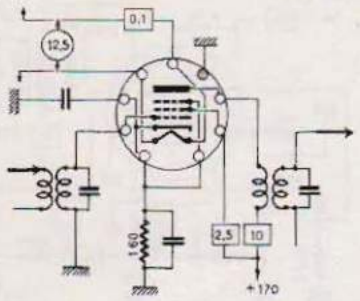
HF(T)(V)

S = 6,3, ρ = 0,3 MΩ, V = −0,2 −19



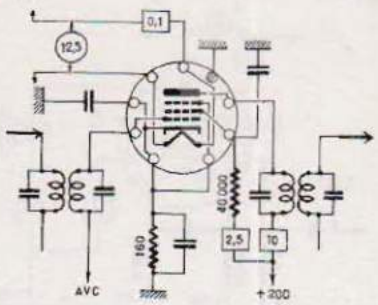
UF80 (N)
HF(T)

S = 7,4
ρ = 0,4 MΩ
V = −2



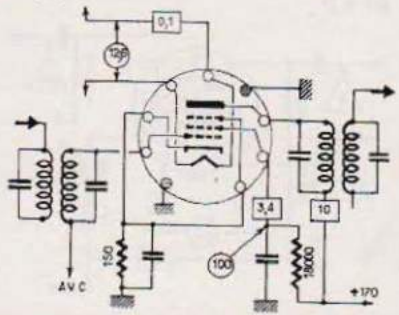
UF85 (N)
HF(V)

S = 6,1
ρ = 0,4 MΩ
V = −2 − 35



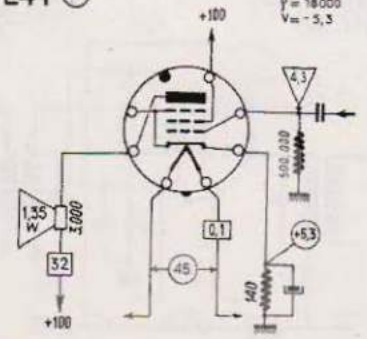
UF89 (UF41) (N)
HF(V)

S = 3,6
ρ = 0,5 MΩ
V = −3 −10



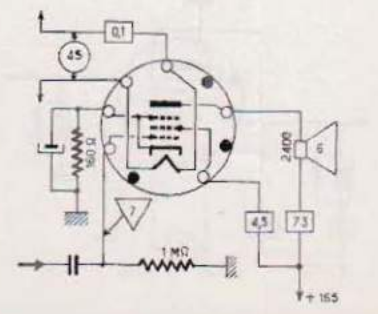
UL41 (R)
P

S = 8,5
ρ = 18000
V = −5,3



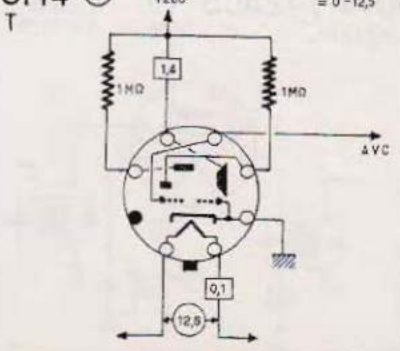
UL84/45B5 (R)
P

S = 10,5
ρ = 20 kΩ
V = −12



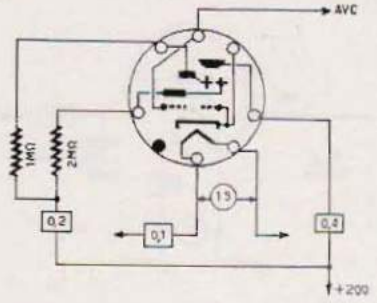
UM4 (0)
T

V = 0 −4,2
= 0 −12,5



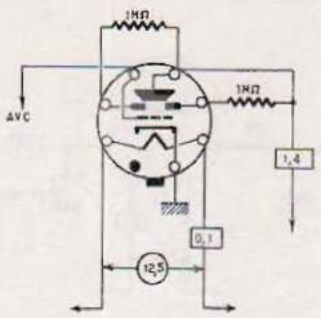
UM11 (A6)

I



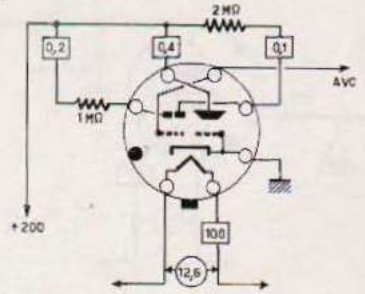
UM34 (O)

I



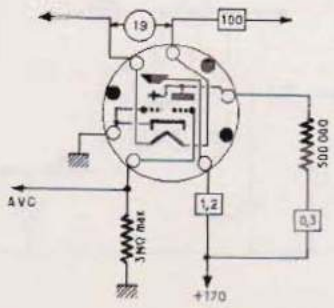
UM35 (O)

I



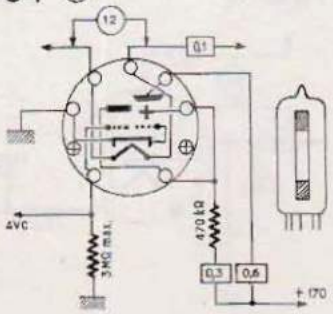
UM80 = UM81 (N)

I



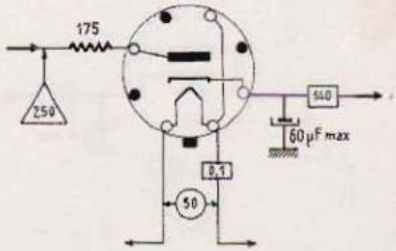
UM84 (N)

I

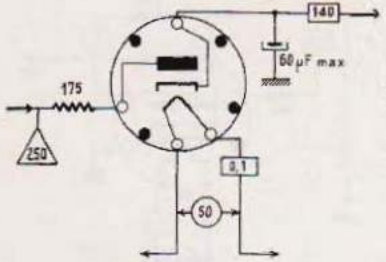


UY1N (O)

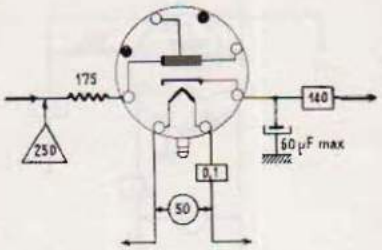
R



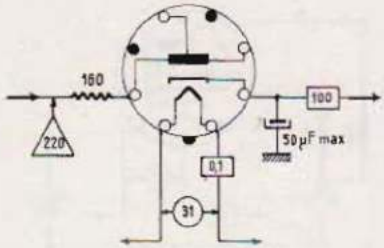
UY11 (48)
R



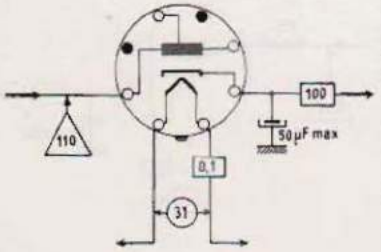
UY21 (L)
R



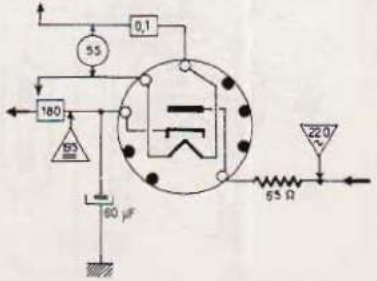
UY41 / 31A3 (R)
R



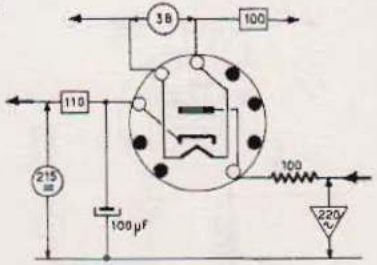
UY42 (R)
R



UY82 (M)
R

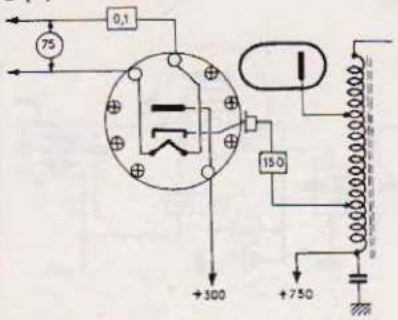


UY85 / 38A3 (N)
R



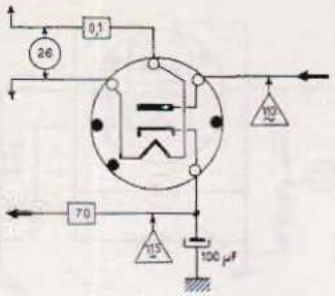
UY88 (N)

D (T)



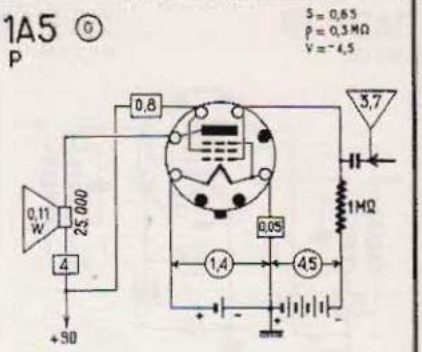
UY92 (M)

R



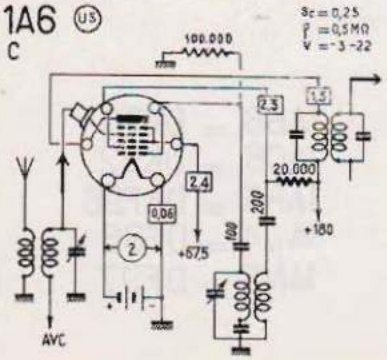
1A5 (O)

P



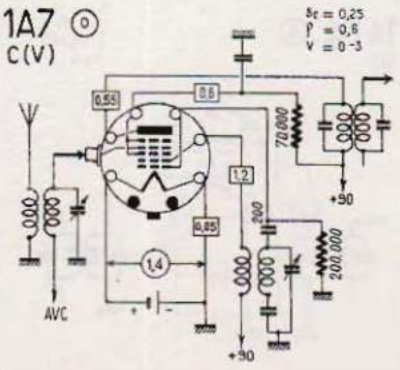
1A6 (U3)

C



1A7 (O)

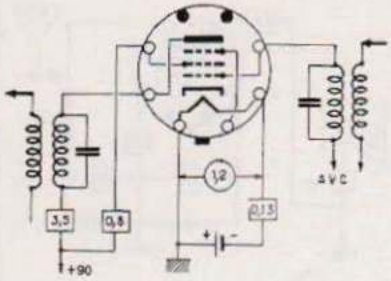
C(V)



V41 = AZ41
V51 = GZ40
V61 = EZ40
V311 = UY41
V312 = UY42
1A3 = DA90

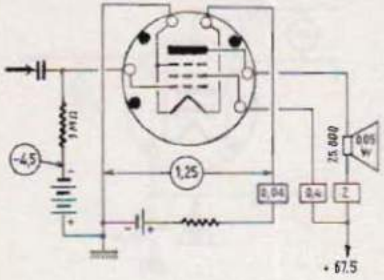
1AB5 ⓪
HF(V)

S = 11
ρ = 275 kΩ
V = −1,3 −12



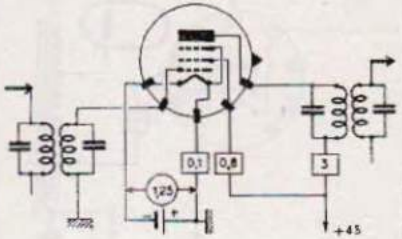
1AC5 (SM)
P

S = 0,75
ρ = 0,15 MΩ
V = −4,5



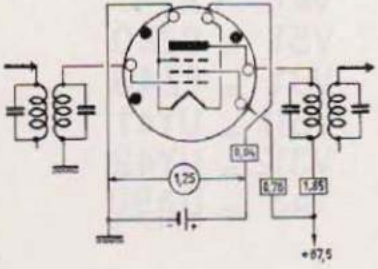
1AD4 (S)
HF

S = 2
ρ = 0,75 MΩ
V = 0



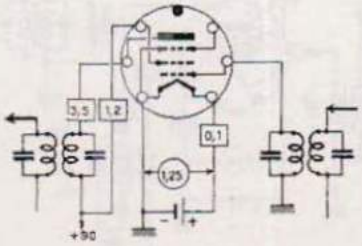
1AD5 / 1W5 (SM)
HF

S = 0,735
ρ = 0,7 MΩ
V = 0



1AE4 (M)
HF

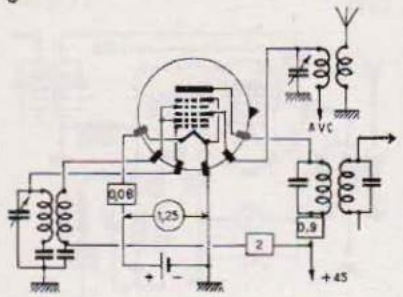
S = 1,55
ρ = 0,5 MΩ
V = 0



1AB6 = DK96
1AC6 = DK92
1AH5 = DAF96
1AJ4 = DF96
1AN5 = DF97

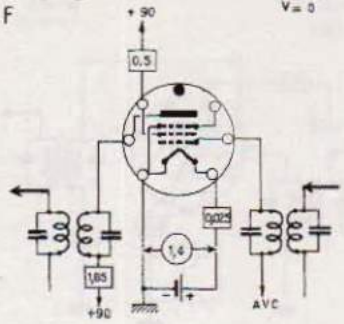
1AE5 Ⓢ
C

S = 0,2
ρ = 0,2 MΩ
V = 0



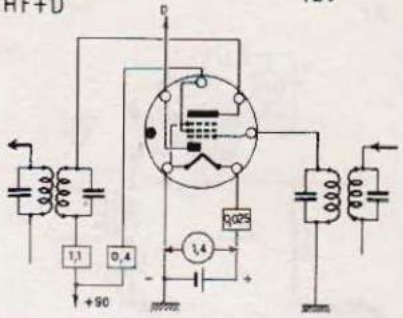
1AF4 Ⓜ
HF

S = 0,95
ρ = 1,8 MΩ
V = 0

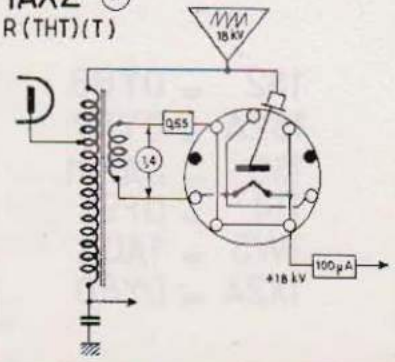


1AF5 Ⓜ
HF+D

S = 0,6
ρ = 2 MΩ
V = 0

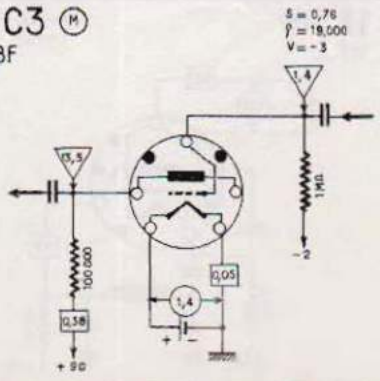


1AX2 Ⓝ
R (THT) (T)



1C3 Ⓜ
BF

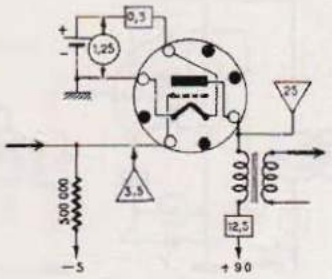
S = 0,76
ρ = 19,000
V = -3



1AU4	=	DF96
1C8	=	1E8
1L4	=	DF92
1M3, 1M6	=	DM70
1R5	=	DK91

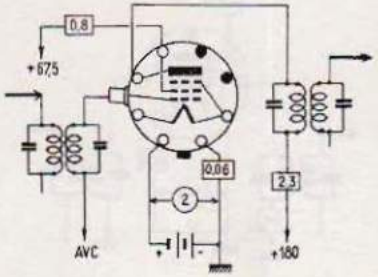
1D3 (SM)
BF

S = 3,4
I = 2560
V = −5



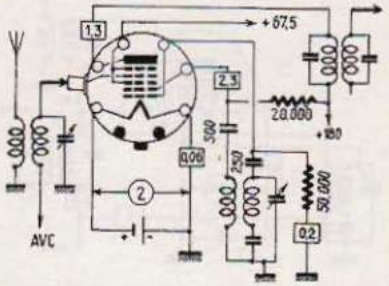
1D5 (O)
HF (V)

S = 0,75
I = 1MΩ
V = −3 −15



1D7 (O)
C(V)

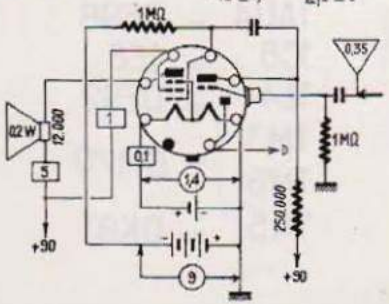
Sc = 0,3
I = 0,5 MΩ
V = −3 −22,5



1D8 (O)
D+BF+P

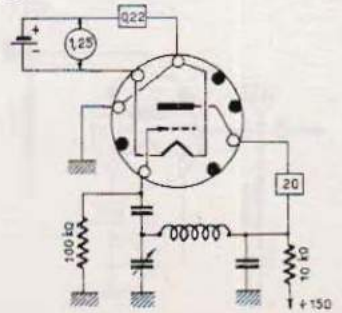
TRIODE
S = 0,57
I = 50000
V = 0
I = 1,1

PENTHODE
S = 0,92
I = 0,2MΩ
V = −3
I = 5



1E3 (M)
HF_O

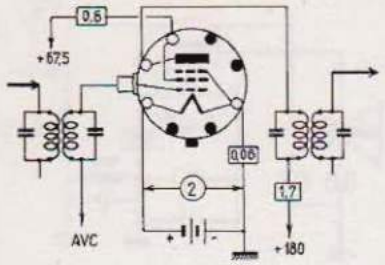
S = 3,5
V = −3,5



1S2 = DY86
1S2A = DY87
1S5 = DAF91
1T4 = DF91
1W5 = 1AD5
1X2A = DY80

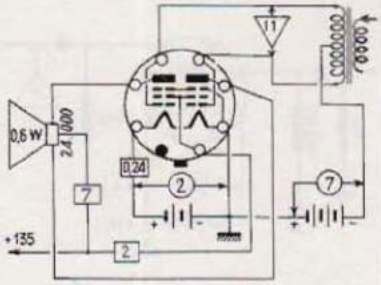
1E5 ⓪
HF(V)

S = 0,65
ρ = 1,5 MΩ
V = -3 - 8



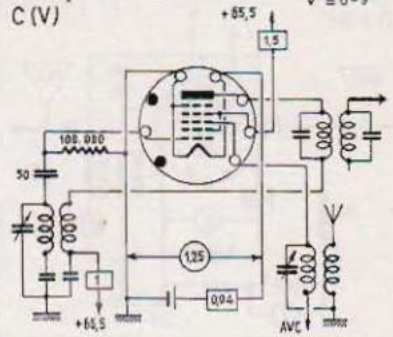
1E7 ⓪
P

S = 1,4
ρ = 0,26 MΩ
V = -7



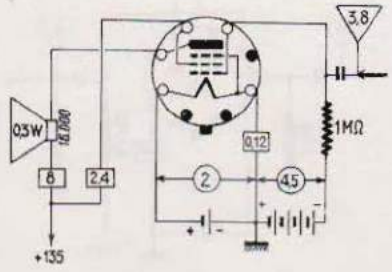
1E8 / 1C8 (SM)
C (V)

Sr = 0,15
ρ = 0,4 MΩ
V = 0 - 9



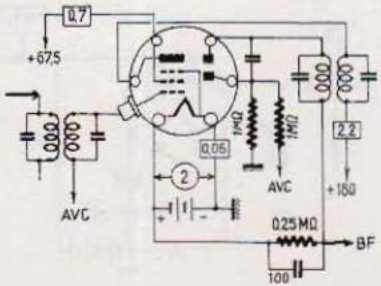
1F5 ⓪
P

S = 1,7
ρ = 0,2 MΩ
V = -4,5



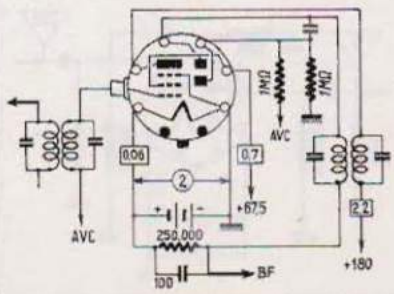
1F6 (US)
HF (V) + D

S = 0,65
ρ = 1 MΩ
V = -1,5 - 12

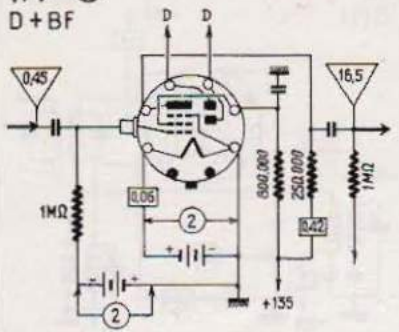


1F7 ⓪
HF (V) + D

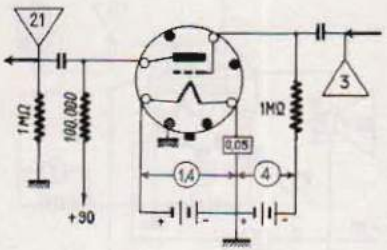
S = 0,65
ρ = 1 MΩ
V = -1,5 - 12



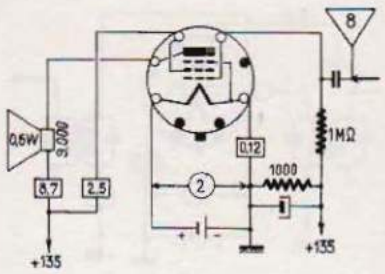
1F7 ⓪
D + BF



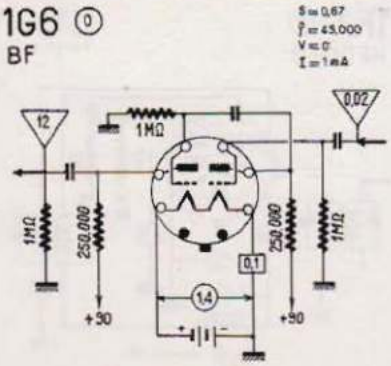
1G4 ⓪
BF



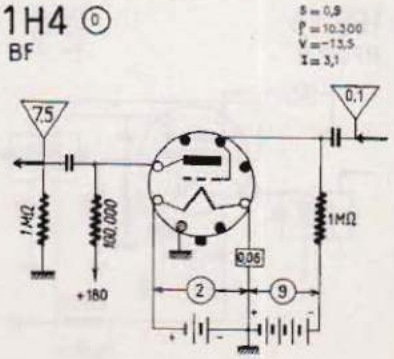
1G5 ⓪
P



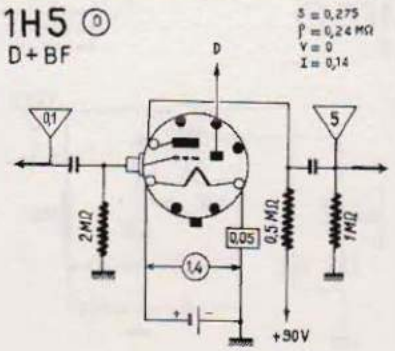
1G6 ⓪
BF

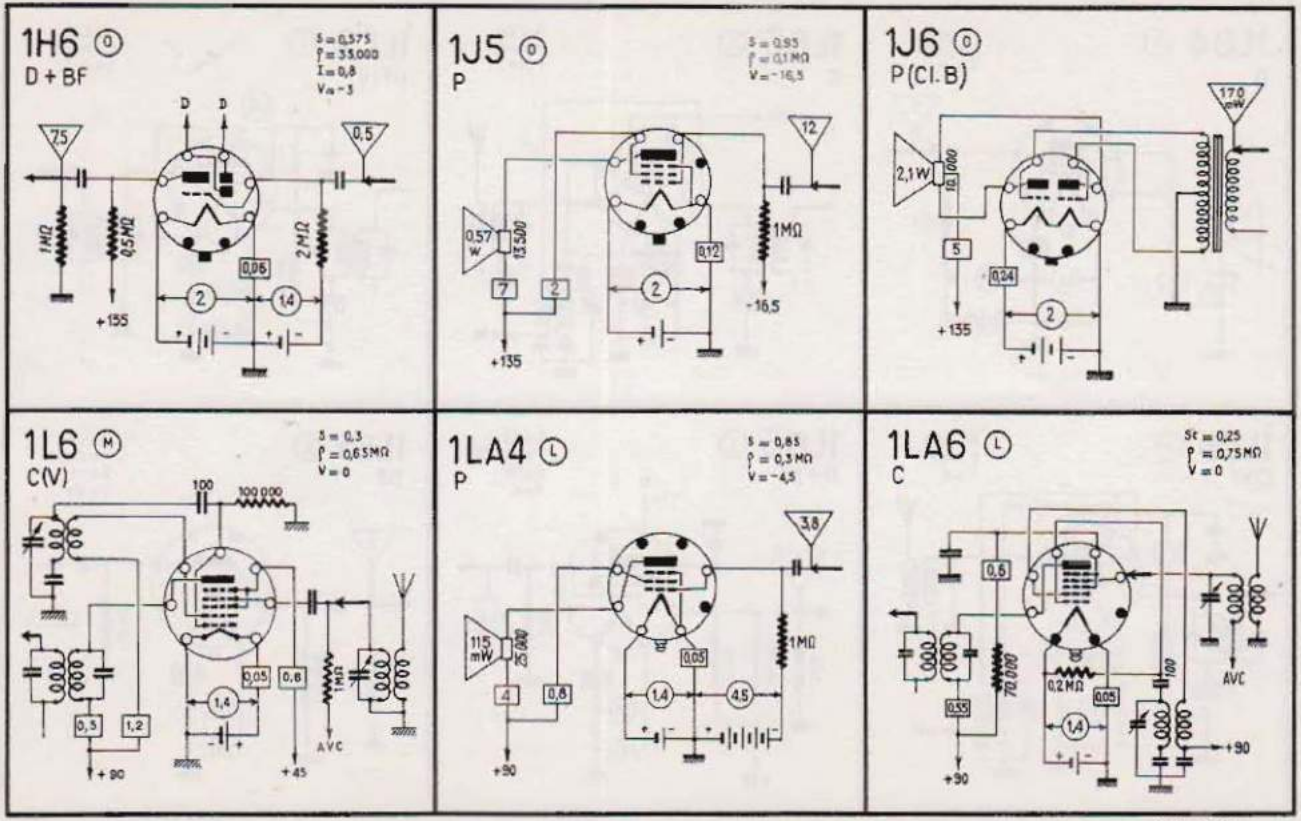


1H4 ⓪
BF



1H5 ⓪
D + BF



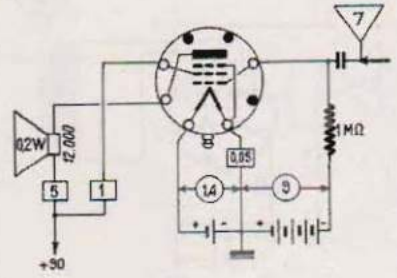

1H6 ⓪
D + BF
S = 0,375
ρ = 35.000
I = 0,8
Va = 3
D D
7,5
0,5
1MΩ
0,5MΩ
2MΩ
0,06
2
1,4
+135
1J5 ⓪
P
S = 0,95
ρ = 0,1MΩ
V = -16,5
0,57 mW
13.500
12
1MΩ
0,12
7
2
-16,5
+135
1J6 ⓪
P(Cl. B)
2,1 W
10.000
170 mW
5
0,24
2
+135
1L6 Ⓜ
C(V)
S = 0,3
ρ = 0,65MΩ
V = 0
100
100.000
0,05
0,8
1,4
0,3
1,2
AVC
+90
+45
1LA4 Ⓛ
P
S = 0,85
ρ = 0,3MΩ
V = -4,5
3,8
115 mW
25.000
1MΩ
0,05
0,8
4
1,4
4,5
+90
1LA6 Ⓛ
C
S = 0,25
ρ = 0,75MΩ
V = 0
0,5
0,2MΩ
70.000
100
0,05
0,55
1,4
AVC
+90
+90

1L4 = DF92

1LB4 Ⓛ

P

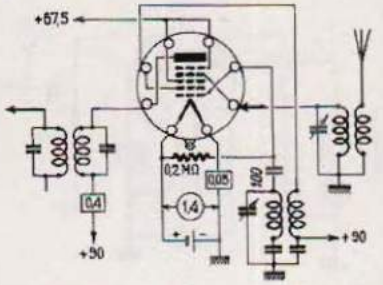
S = 0,925
ρ = 0,2 MΩ
V = -3



1LB6 Ⓛ

C

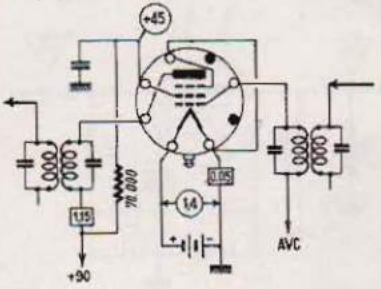
Sc = 0,1
ρ = 2 MΩ
V = 0



1LC5 Ⓛ

HF(V)

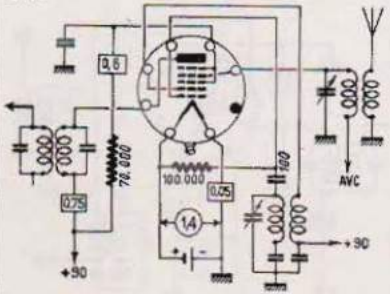
S = 0,77
ρ = 1,5 MΩ
V = 0-3



1LC6 Ⓛ

C(V)

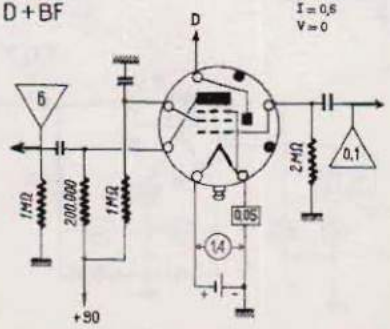
Sc = 0,25
ρ = 0,3
V = 0



1LD5 Ⓛ

D+BF

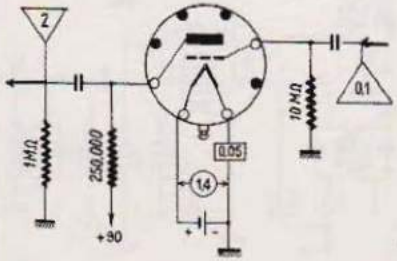
S = 0,6
ρ = 0,95 MΩ
I = 0,6
V = 0

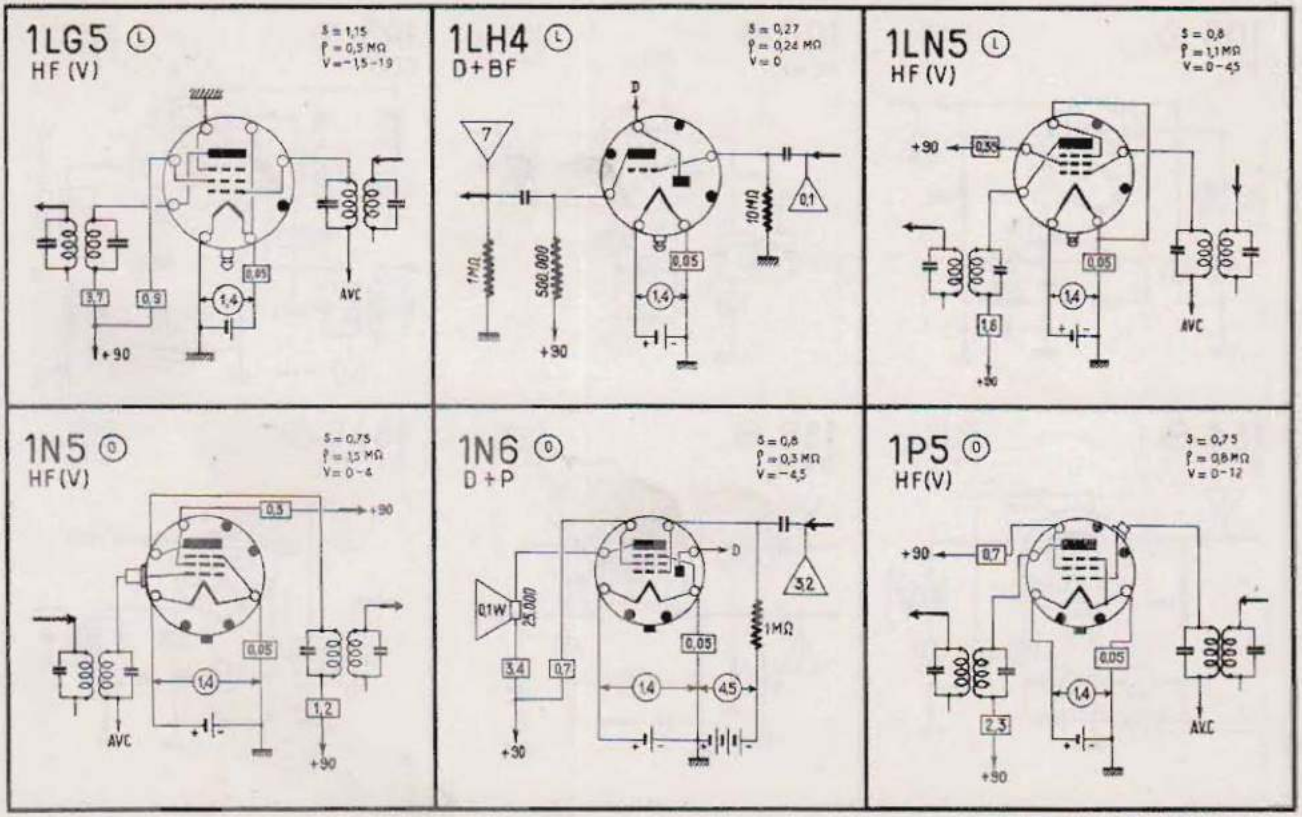


1LE3 Ⓛ

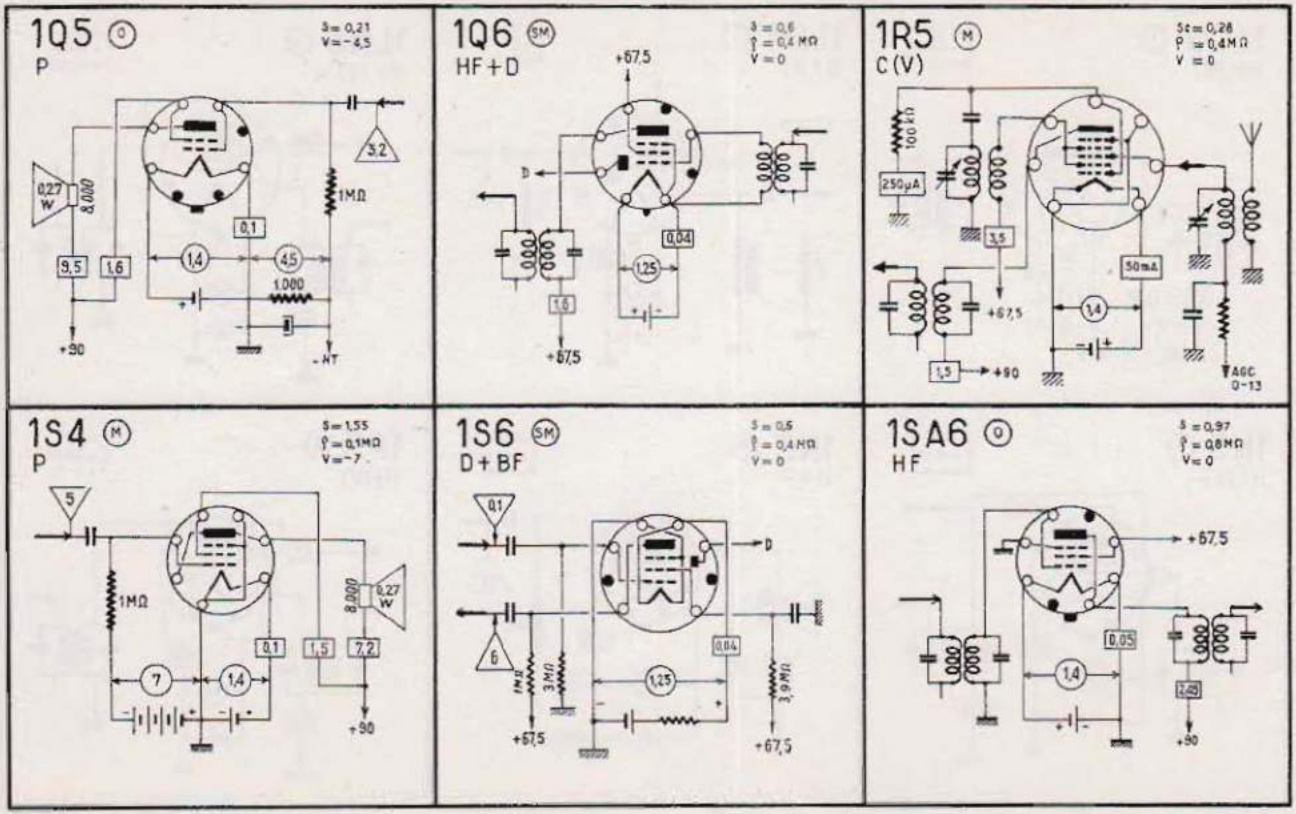
BF

S = 1,3
ρ = 11200
V = -3
I = 4,3

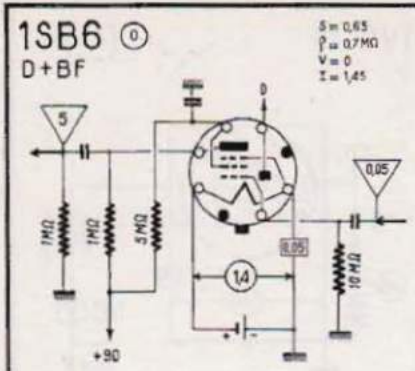




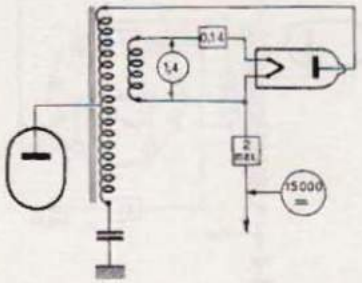
1M3 / 1N3 = DM70 / DM71


1Q5
P
S = 0,21
V = -4,5
0,27 W
8.000
9,5
1,6
0,1
1,4
4,5
1.000
1MΩ
3,2
+90
-HT
1Q6
HF+D
+67,5
D
0,04
1,25
1,6
+67,5
1R5
C(V)
Sc = 0,28
P = 0,4MΩ
V = 0
100 kΩ
250µA
3,5
50mA
+67,5
1,4
1,5
+90
AGC
0-13
1S4
P
S = 1,55
P = 0,1MΩ
V = -7
5
1MΩ
8.000
0,27 W
0,1
1,5
7,2
7
1,4
+90
1S6
D+BF
S = 0,5
P = 0,4MΩ
V = 0
0,1
D
6
1MΩ
3MΩ
0,04
1,25
3,9MΩ
+67,5
+67,5
1SA6
HF
S = 0,97
P = 0,8MΩ
V = 0
+67,5
0,05
1,4
2,49
+90

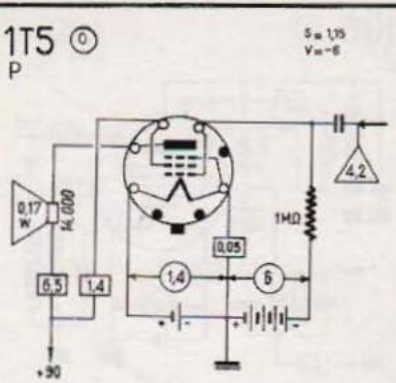
1SB6 ⓪
D+BF



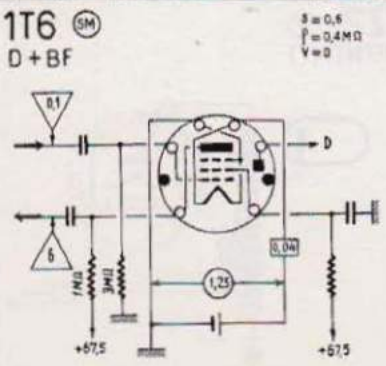
1T2 Ⓢ
R(THT)



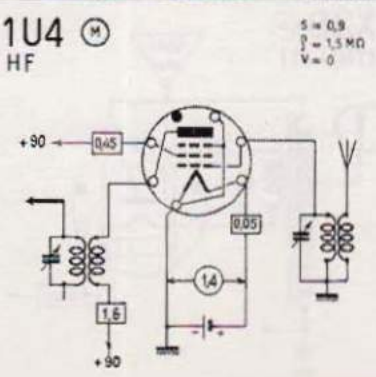
1T5 ⓪
P



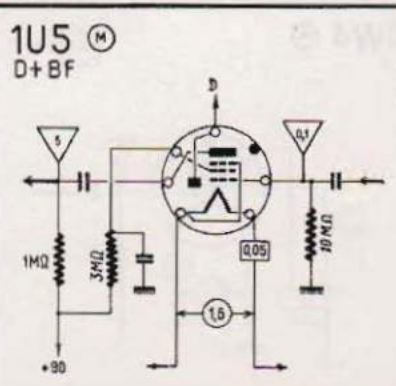
1T6 Ⓢ
D+BF



1U4 Ⓜ
HF

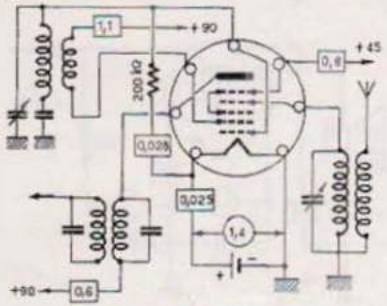


1U5 Ⓜ
D+BF



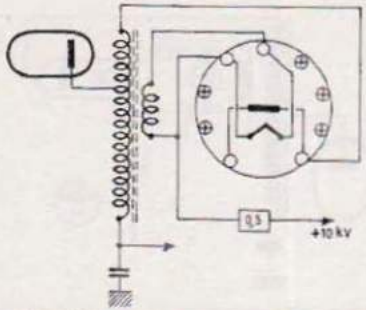
1U6 (M)

C



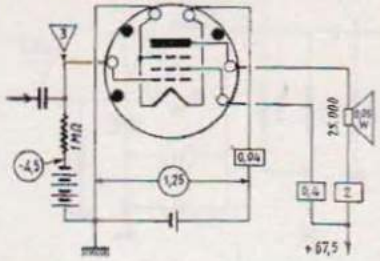
1V2 (N)

R(THT) (V)



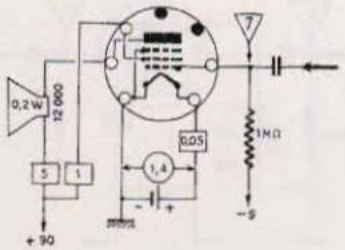
1V5 (SM)

P



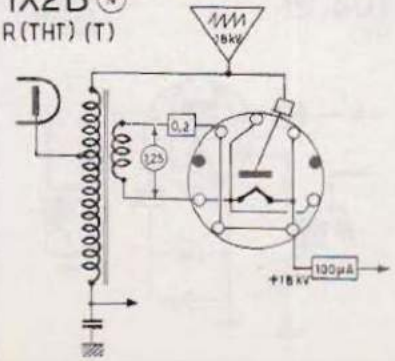
1W4 (M)

P



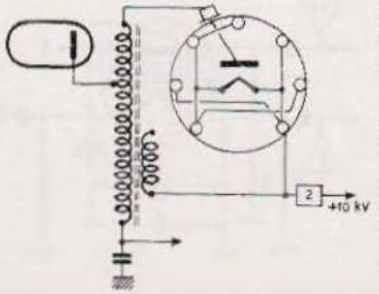
1X2B (N)

R(THT) (T)



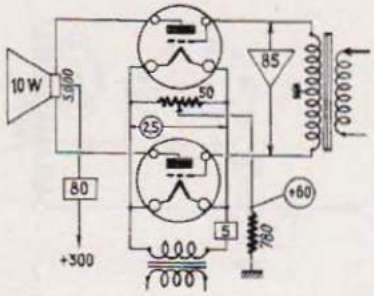
1Z2 (M)

R(THT) (T)



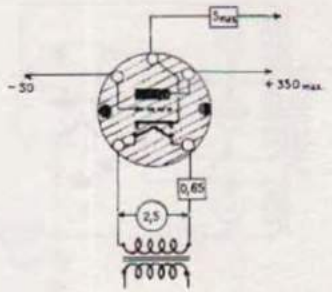
2A3 (US)
P(Cl.A)

S = 5,25
ρ = 800
Sr = −45



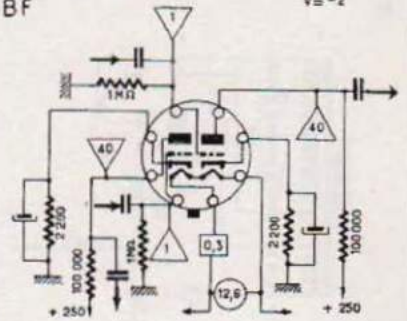
2C4 (M)
THYR.

V = 50

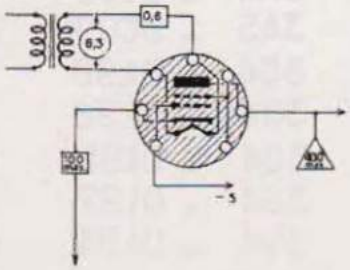


2C52 (O)
BF

S = 1,9
ρ = 52 700
V = −2

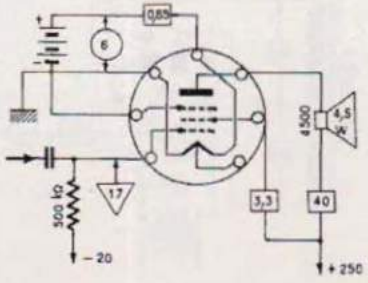


2D21 (M)
THYR.



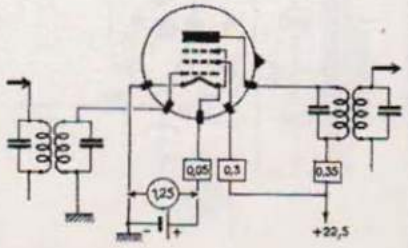
2E30 (M)
P

S = 3,7
ρ = 63 kΩ
V = −20



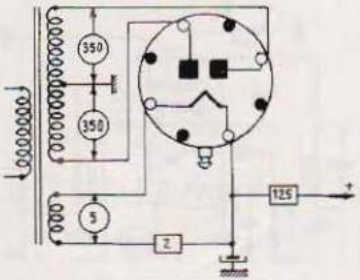
2E31 (SM)
HF

S = 0,5
ρ = 350 000
V = 0



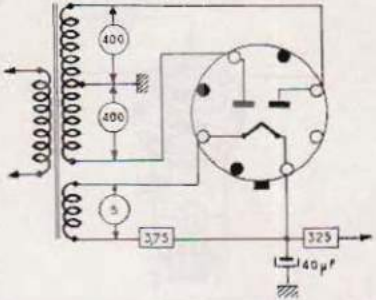
3AZ4 (L)

R



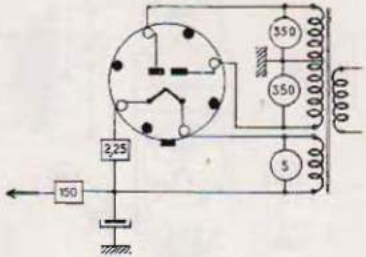
5AU4 (O)

R



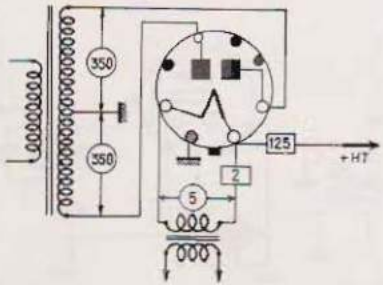
5AX4 (O)

R



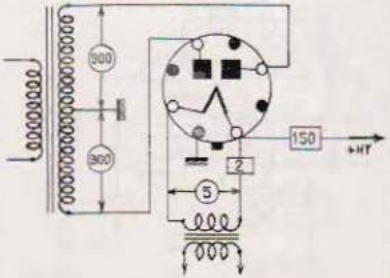
5AZ4 (O)

R



5R4 (O)

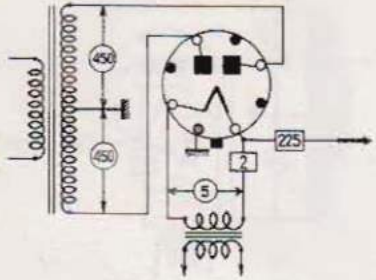
R



2B35 = EA50
3A4 = DL93
3A5 = DCC90
3C4 = DL96
3B4 = DL98
3Q4 = DL95
3S4 = DL92
3V4 = DL94

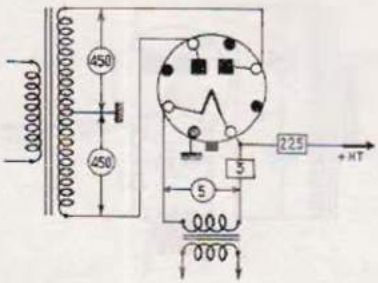
5T4 ⓪

R



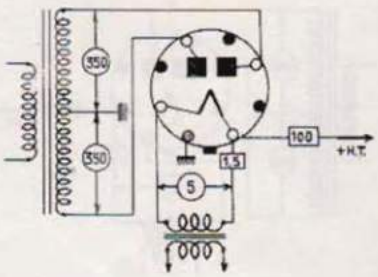
5U4 ⓪

R



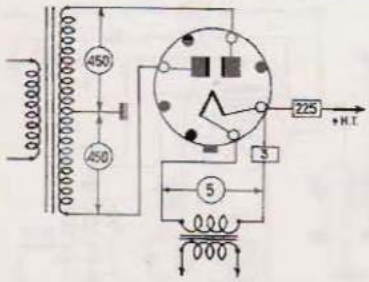
5W4 ⓪

R



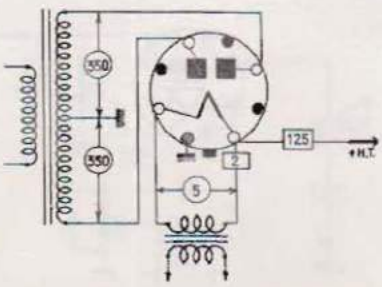
5X4 ⓪

R



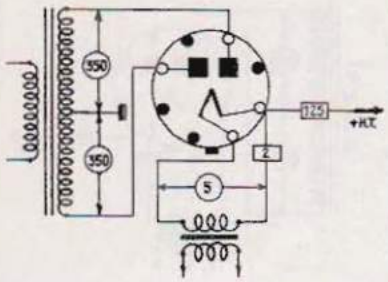
5Y3 ⓪

R

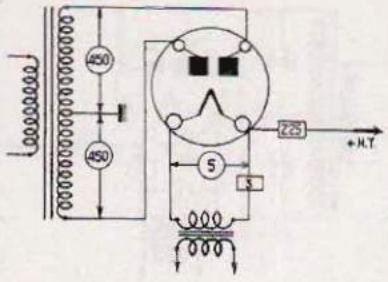


5AQ4 = GZ32
5AR4 = GZ34
5P29 = EL38
5V4 = GZ32

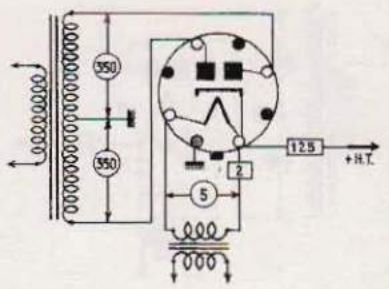
5Y4 ⓪
R



5Z3 US
R

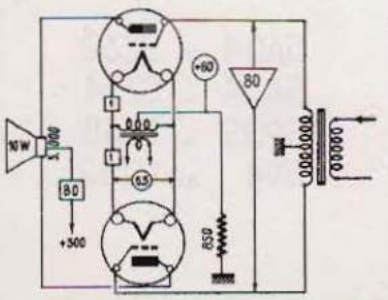


5Z4 ⓪
R



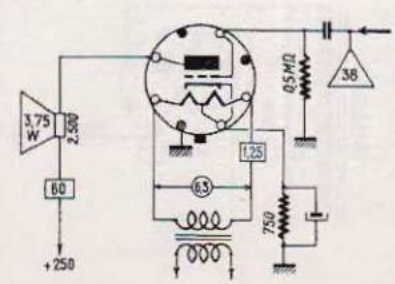
6A3 US
P(Cl. A)

V=−60



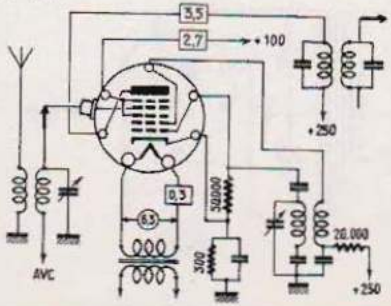
6A5 (6A3) ⓪
P

S = 5,25
ρ = 800
V = −45



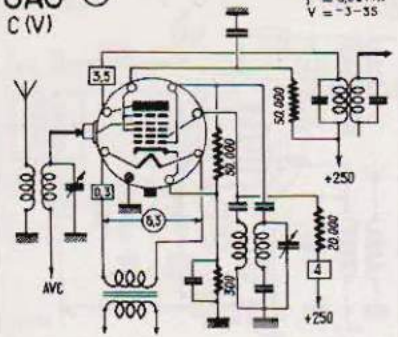
6A7 (6A8) US
C (V)

Sc = 0,55
ρ = 0,36 MΩ
V = −3-35



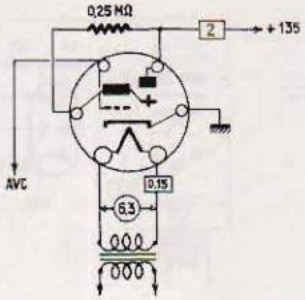
6A8 ⓪
C (V)

Sc = 0,55
ρ = 0,36 MΩ
V = −3 −35



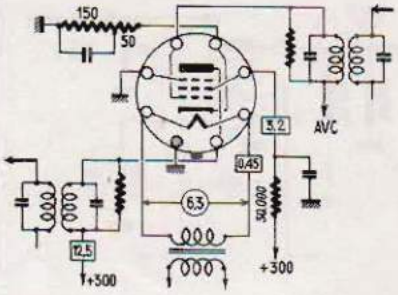
6AB5 (US)
I

V = 0 −10



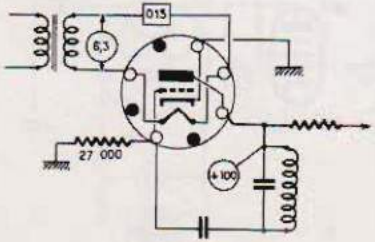
6AB7 ⓪
HF (V) (T)

S = 5
ρ = 0,7
V = −3 −22,5



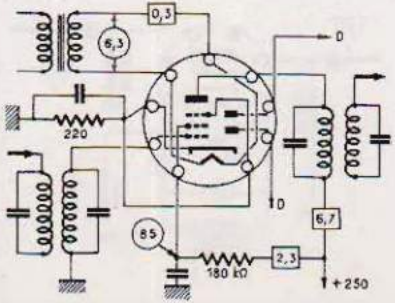
6AD4 (SM)
0 (T) (FM)

S = 2
ρ = 35.000
V = −1



6AD8 (N)
HF + D

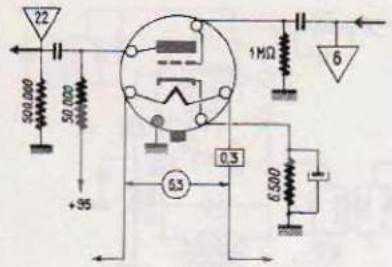
S = 1,1
ρ = 1 MΩ
V = −2



6AB4 = EC92
6AB8 = ECL80
6AJ8 = ECH81

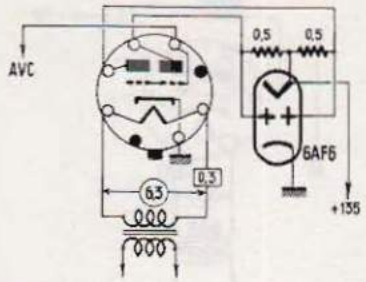
6AE5 ⓞ
BF

S = 1,2
P = 3.500
V = −15
I = 7



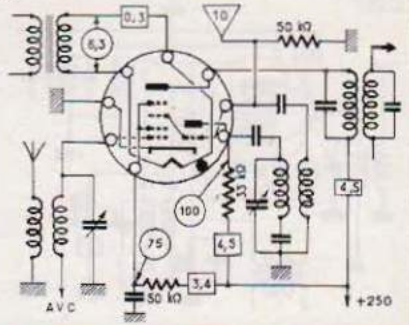
6AE6 ⓞ
I

S = 1
P = 35000
V = −1,5 − 35



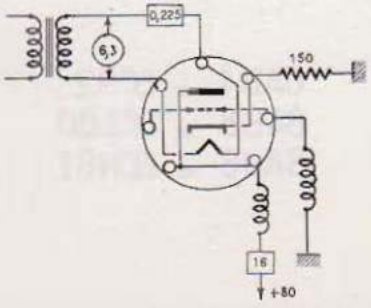
6AE8 Ⓝ
C

Sc = 0,78
P = 700 kΩ
V = 0



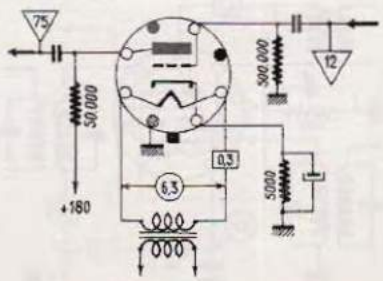
6AF4 Ⓜ
O(VHF)

S = 6,6
P = 2.270
μ = 15



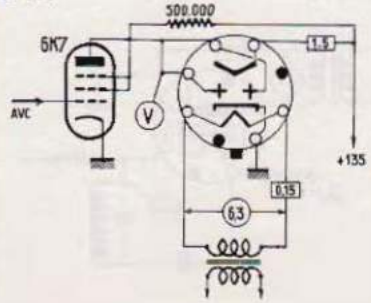
6AF5 ⓞ
BF

S = 1,5
P = 4.900
V = −18
I = 7



6AF6 ⓞ
I (V)

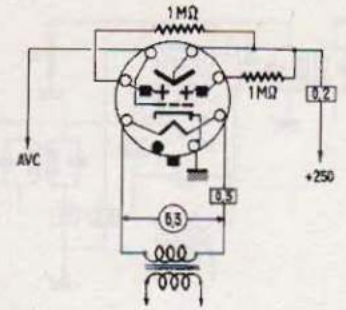
V = 0 + 80



6AF7 (D)

I (V)

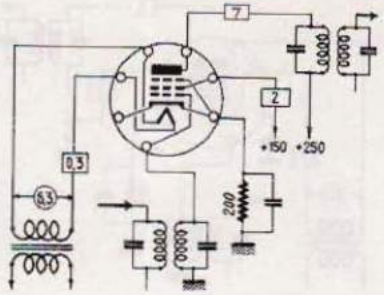
V = 0-13



6AG5 (M)

HF (T)

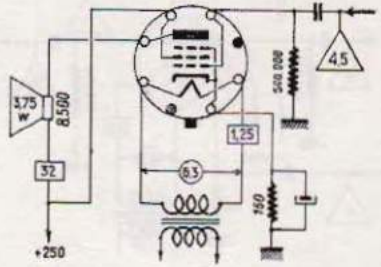
S = 5
P = 0,8
V = -1,8



6AG6 (D)

P

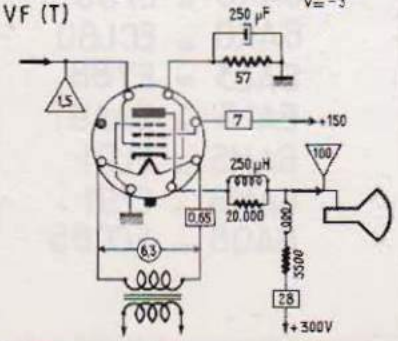
S = 10
P = 50.000
V = -6



6AG7 (D)

VF (T)

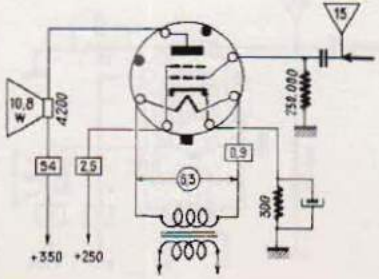
S = 11
P = 130.000
V = -3



6AH5 (D)

P

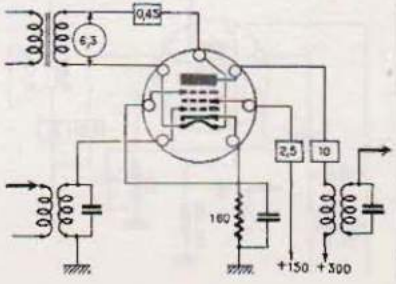
S = 5,2
P = 33.000
V = -10



6AH6 (M)

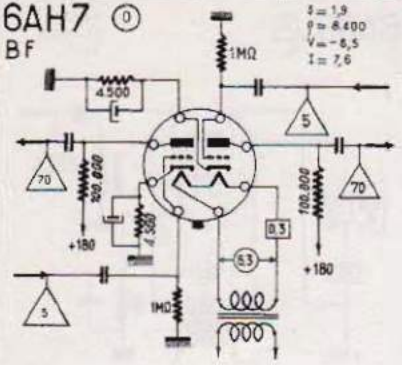
HF (T)

S = 9
P = 0,5 MΩ
V = -2



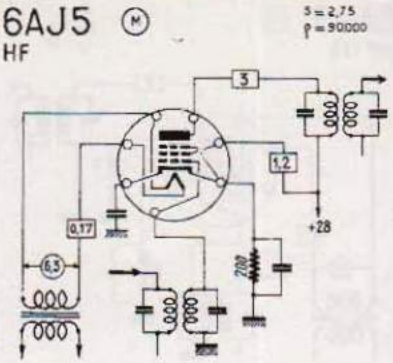
6AH7 ⓓ

BF



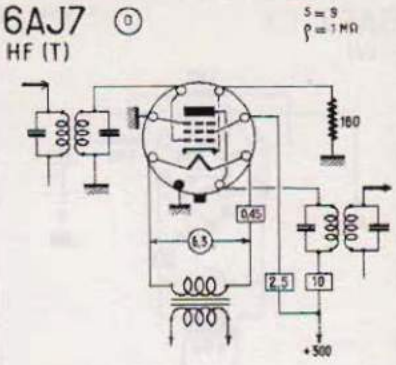
6AJ5 Ⓜ

HF



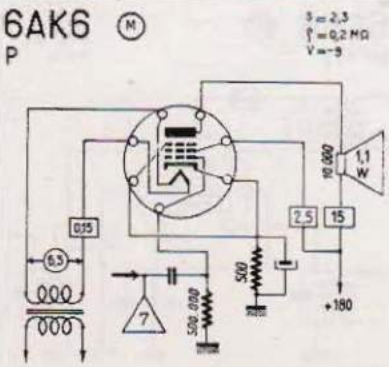
6AJ7 ⓓ

HF (T)



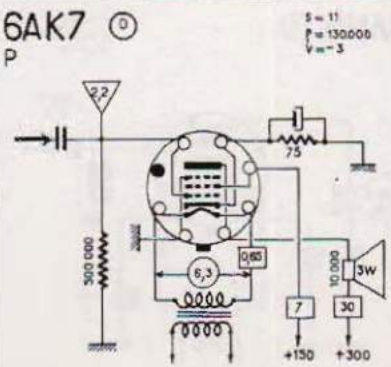
6AK6 Ⓜ

P



6AK7 ⓓ

P

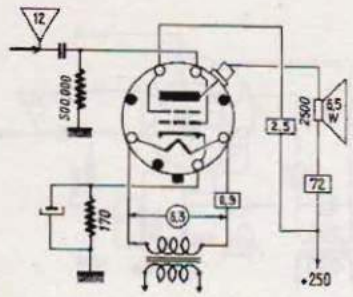


6AK5 = EF95
6AK8 = ECL80
6AL3 = EY88
6AL5 = EAA91
6AM5 = EL91
6AM6 = EF91
6AQ8 = ECC85

6AL6 (6L6) ⓒ

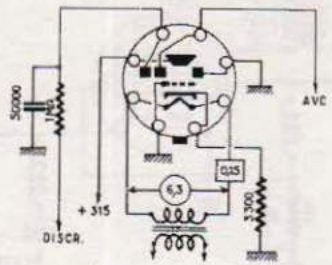
P

S = 6
ρ = 22500
Vm = -14



6AL7 ⓒ

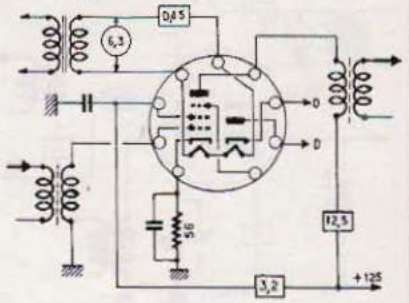
I (FM)



6AM8 Ⓝ

HF+D (T)

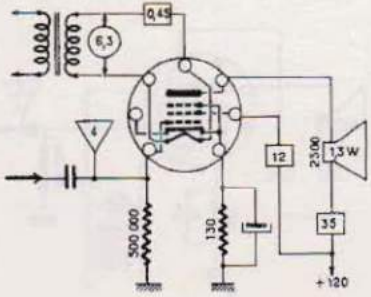
S = 7,8
ρ = 0,3 MΩ
V = -0,8



6AN5 Ⓜ

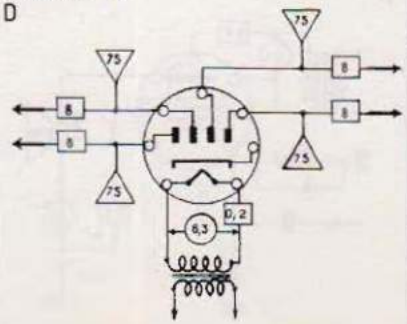
P

S = 8
ρ = 12.500
Vm = -6



6AN6 Ⓜ

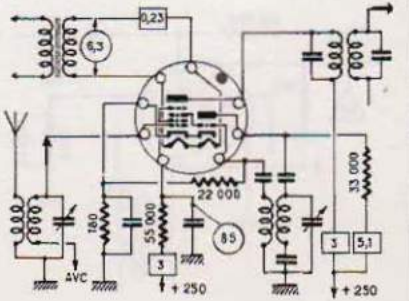
D



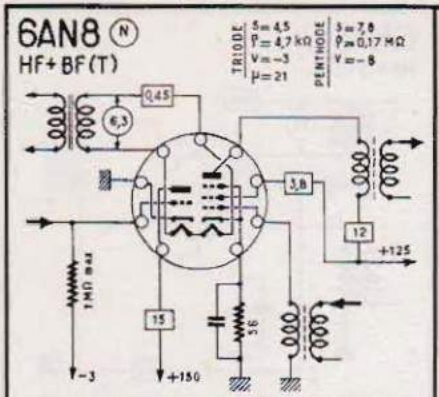
6AN7 Ⓝ

C

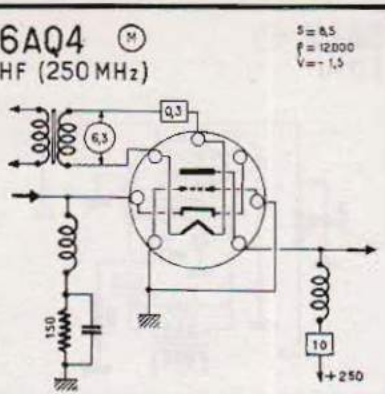
S = 0,75
ρ = 0,1 MΩ
Vm = -2 -25



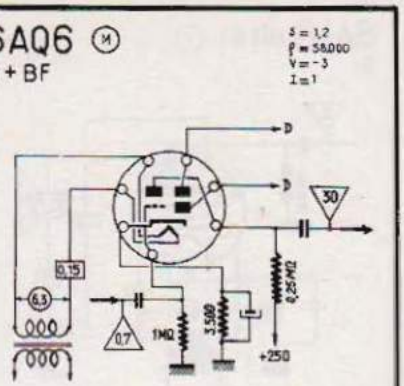
6AN8 (N)
HF+BF(T)



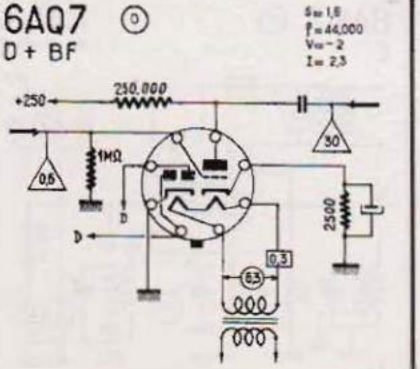
6AQ4 (M)
HF (250 MHz)



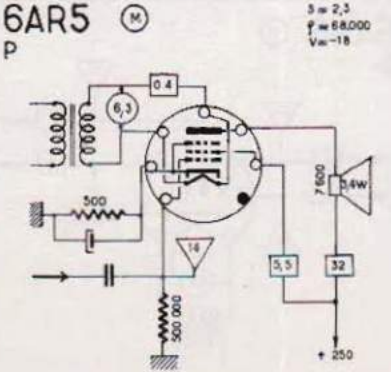
6AQ6 (M)
D + BF



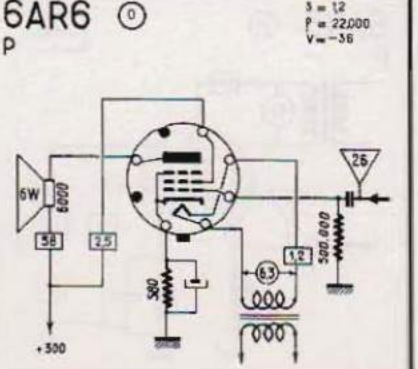
6AQ7 (D)
D + BF



6AR5 (M)
P

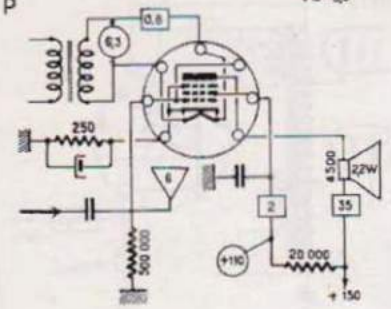


6AR6 (D)
P



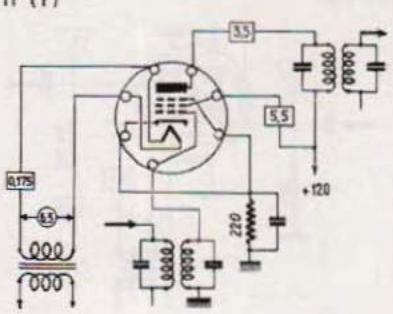
6AS5 (M)

P



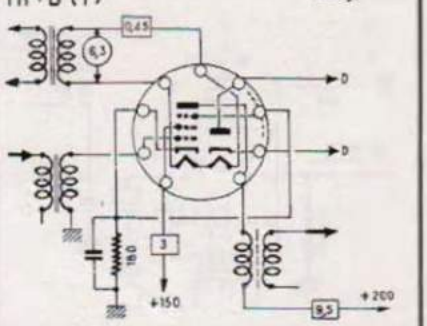
6AS6 (M)

HF (T)



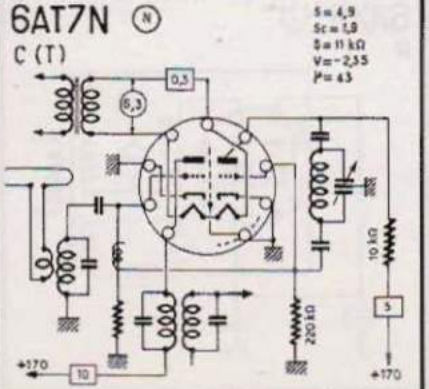
6AS8 (N)

HF+D (T)



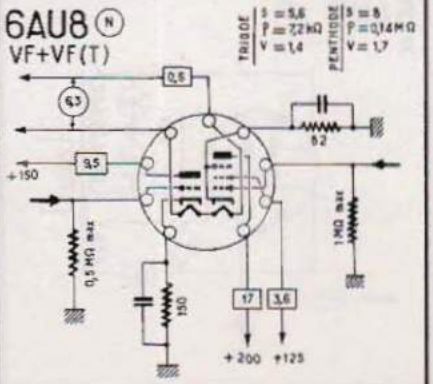
6AT7N (N)

C (T)



6AU8 (N)

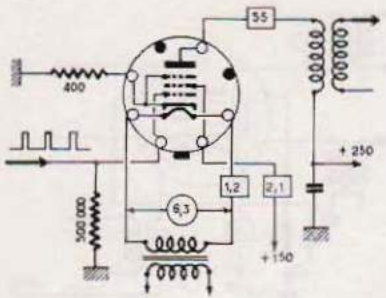
VF+VF (T)



6AQ5 = EL90
6AT6 = EBC90
6AU6 = EF94
6AV4 = EZ91
6AV6 = EBC91

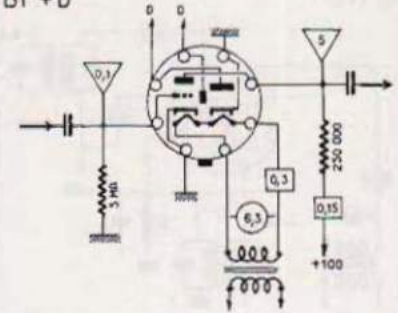
6AV5 ⓪

P(T)



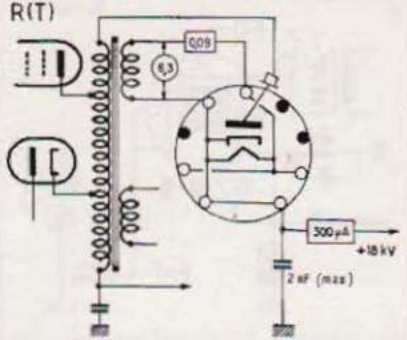
6AW7 ⓪

BF+D



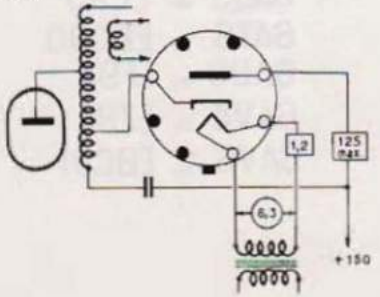
6AX2N Ⓝ

R(T)



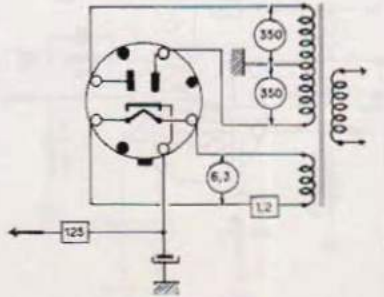
6AX4 (25AX4) ⓪

D(T)



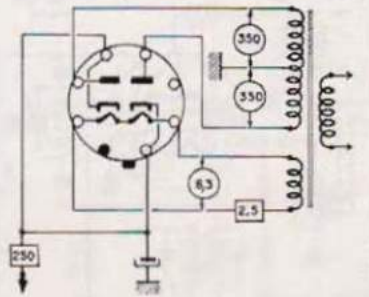
6AX5 ⓪

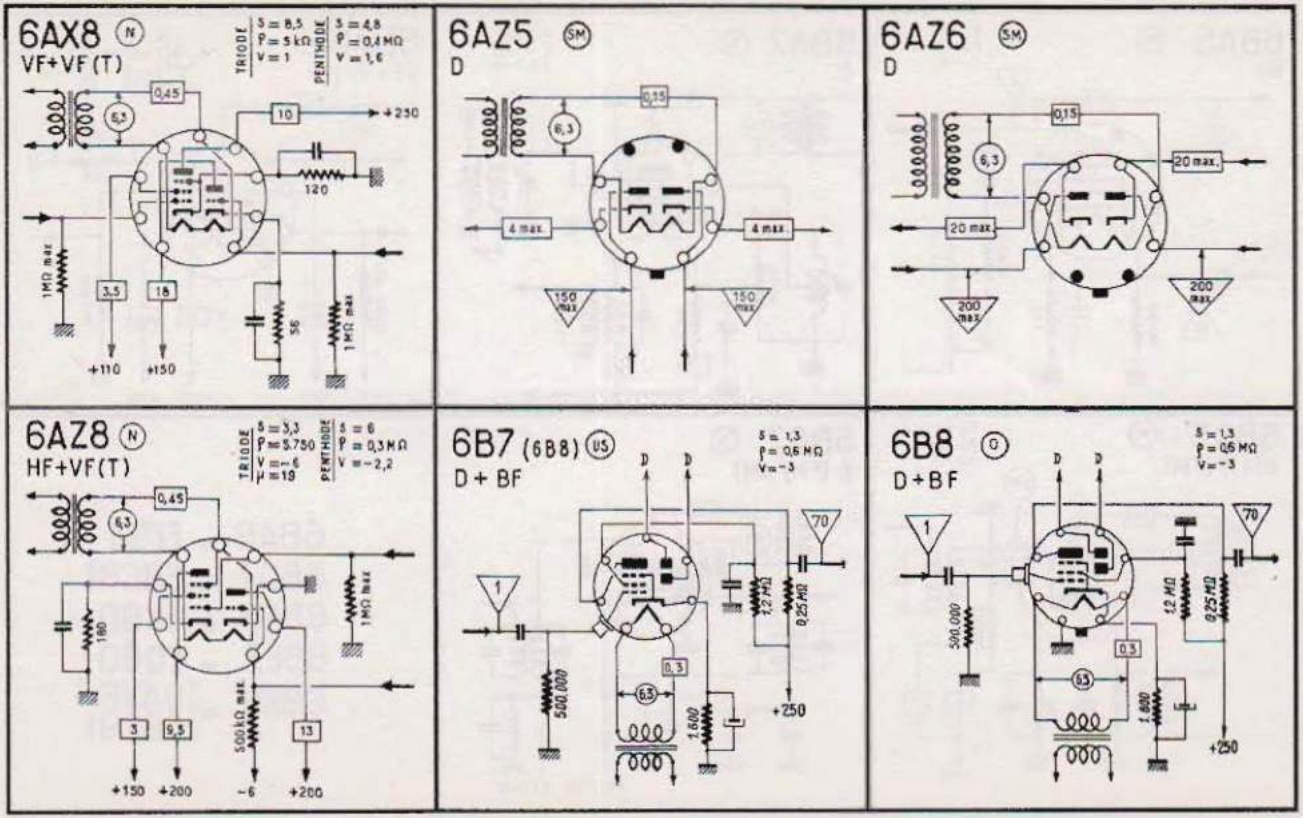
R



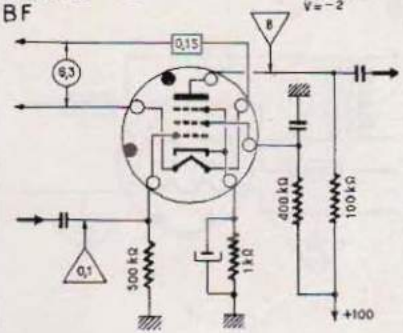
6AX6 ⓪

R

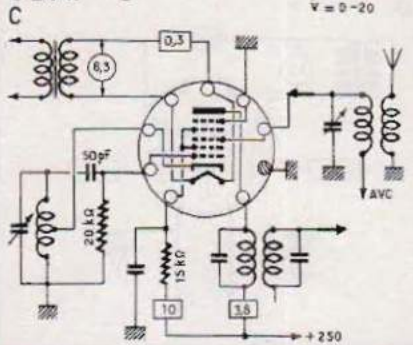



6AX8 (N)
VF+VF (T)
TRIODE S = 8,5 P = 5 kΩ V = 1
PENTHODE S = 4,8 P = 0,4 MΩ V = 1,6
0,45
6,3
10
+230
120
1MΩ max
3,5
18
+110
+150
56
1MΩ max
6AZ5 (SM)
D
0,15
6,3
4 max.
4 max.
150 max.
150 max.
6AZ6 (SM)
D
0,15
6,3
20 max.
20 max.
200 max.
200 max.
6AZ8 (N)
HF+VF(T)
TRIODE S = 3,3 P = 5.750 V = -6 μ = 19
PENTHODE S = 6 P = 0,3 MΩ V = -2,2
0,45
6,3
180
1MΩ max
3
9,5
500kΩ max
13
+150
+200
-6
+200
6B7 (6B8) (US)
D + BF
S = 1,3 P = 0,6 MΩ V = -3
D
D
70
1
1,2 MΩ
0,25 MΩ
500.000
0,3
6,3
1.600
+250
6B8 (O)
D + BF
S = 1,3 P = 0,6 MΩ V = -3
D
D
70
1
500.000
1,2 MΩ
0,25 MΩ
0,3
6,3
1.600
+250

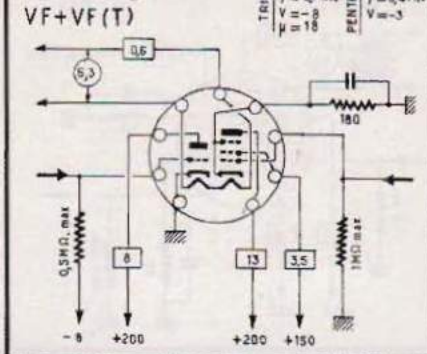
6BA5 (SM)
BF



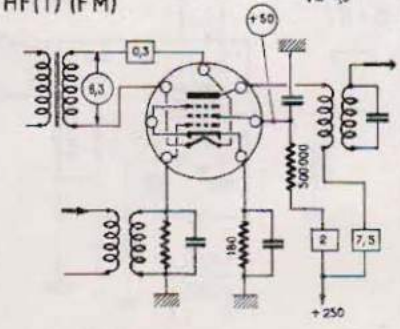
6BA7 (N)
C



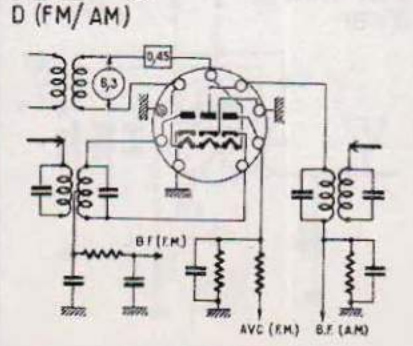
6BA8 (N)
VF+VF(T)



6BC5 (M)
HF(T) (FM)



6BC7 (N)
D (FM/AM)

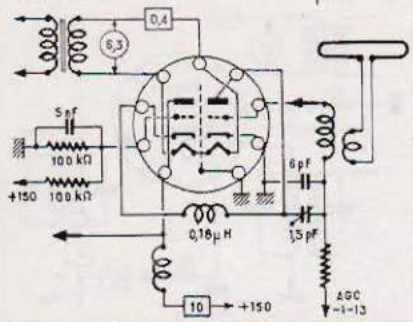


6BA6 = EF93
6BD7 = EBC81
6BE6 = EK90
6BE7 = EQ80
6BK6 = 6AV6 / EBC91

6BC8 (N)

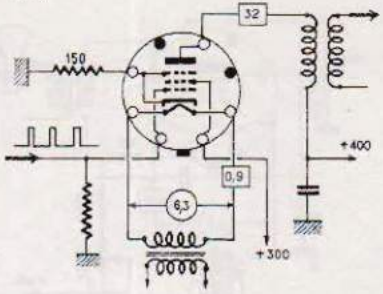
VHF (T)

S = 6,2
P = 5,650
V = 0
μ = 35



6BD5 (O)

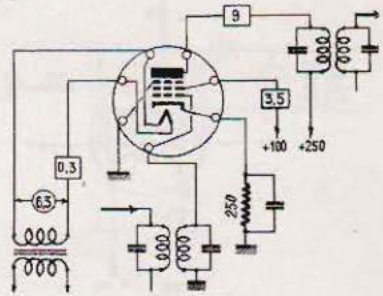
P (T)



6BD6 (M)

HF

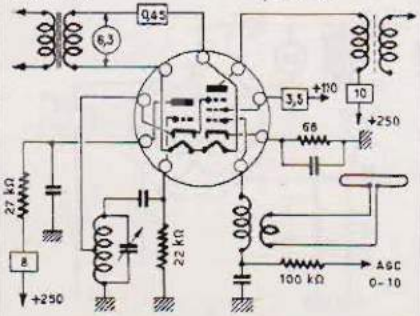
S = 2
P = 0,7 MΩ
V = -3



6BE8 (N)

C (VHF)

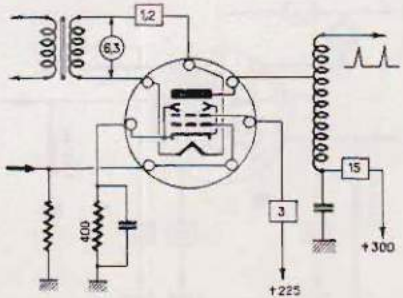
TRIODE	PENTHODE
S = 8,5	S = 5,2
P = 5 kΩ	P = 0,4 MΩ
V = 0	V = 0
μ = 40	



6BF5 (M)

P (T)

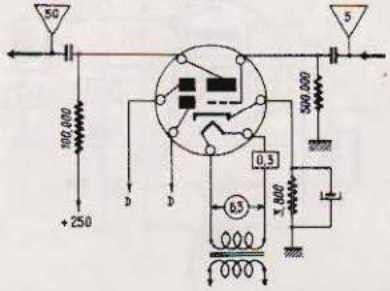
S = 4,2
P = 0,1 MΩ
V = -6



6BF6 (M)

D + BF

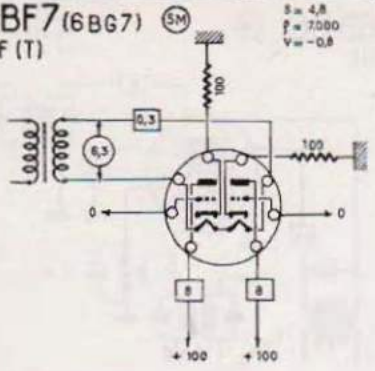
S = 1,9
P = 8.500
V = -9



6BF7 (6BG7) (SM)

HF (T)

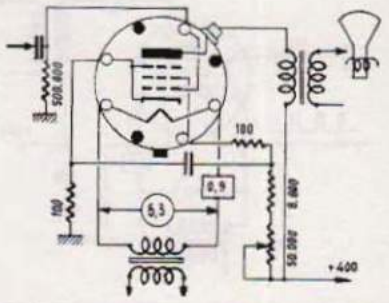
S = 4,8
P = 7.000
V = −0,8



6BG6 (O)

P (T)

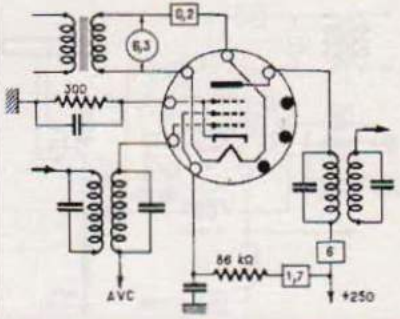
S = 6



6BH5 (N)

HF (V)

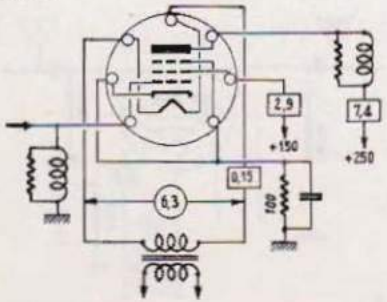
S = 2,2
P = 1,1 MΩ
V = −2,5 −50



6BH6 (M)

HF (T)

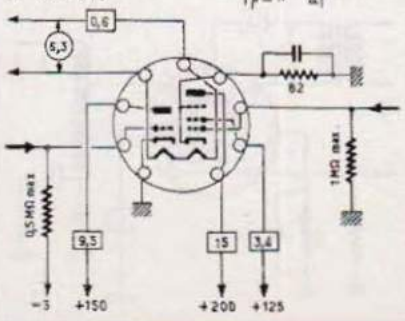
S = 4,6
P = 1,4 MΩ
V = −1



6BH8 (N)

VF + VF (T)

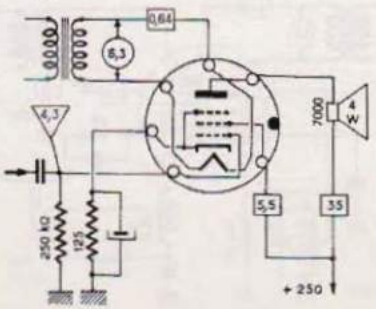
TRIODE: S = 3,3 P = 3150 V = −5 μ = 17
PENTHODE: S = 7 P = 0,15 MΩ V = 1,5



6BJ5 (M)

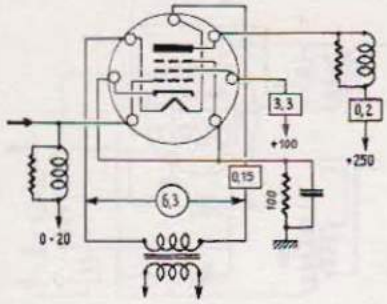
P (T)

S = 10,5
P = 40 kΩ
V = −5



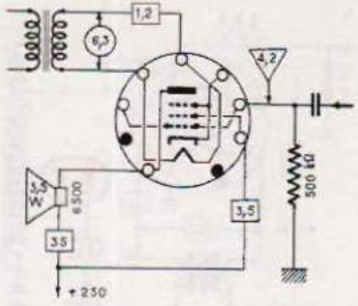
6BJ6 (M)
HF (T)

S = 3,8
ρ = 1,3 MΩ
V = -1 -20



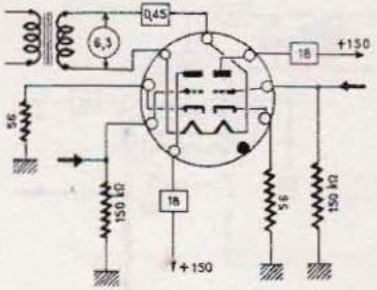
6BK5 (N)
P

S = 8,5
ρ = 100 kΩ
V = -5



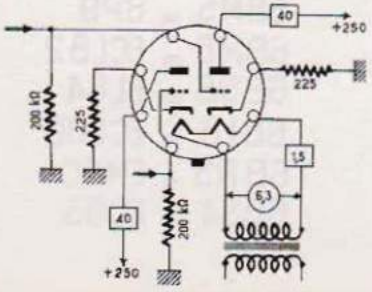
6BK7 (N)
HF (T)

S = 8,5
ρ = 4,7 kΩ
μ = 40

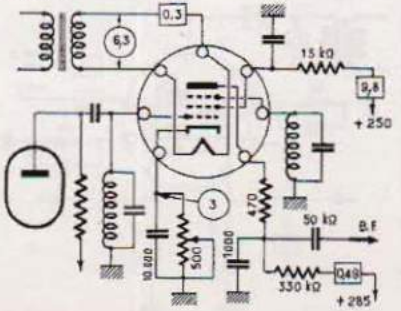


6BL7 (O)
BF_VF (T)

S = 7
ρ = 2,25 kΩ
V = -9
μ = 15

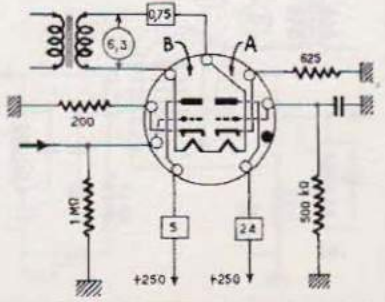


6BN6 (M)
D (FM)



6BN7 (N)
BF_VF (T)

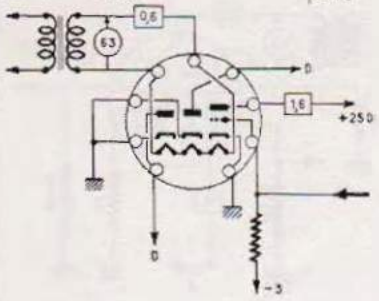
A: S = 5,5 ρ = 2,2 kΩ V = -15 μ = 12
B: S = 2 ρ = 14 kΩ V = -1 μ = 28



6BN8 (N)

BF-VF + D (T)

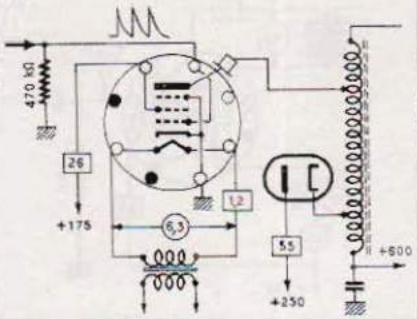
S = 2,5
ρ = 28 kΩ
V = -3
μ = 70



6BQ6 (D)

P (T)

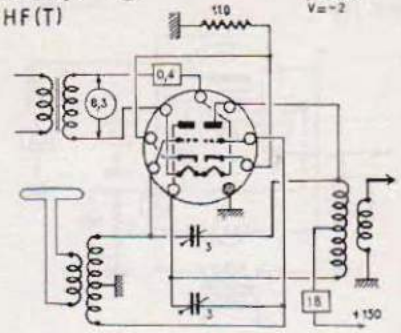
S = 3,5
ρ = 20 kΩ



6BQ7 (N)

HF (T)

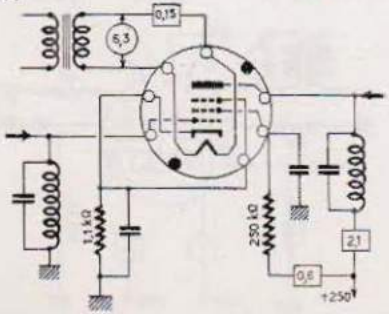
S = 6
ρ = 5.800
V = -2



6BR7 (N)

HF

S = 1,25
ρ = 2,5 MΩ
V = -3

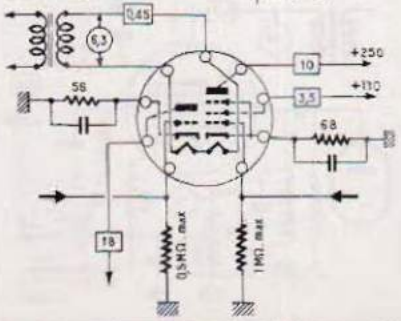


6BR8 (N)

HF + VF (T)

TRIODE
S = 8,5
ρ = 5 kΩ
V = 10
μ = 40

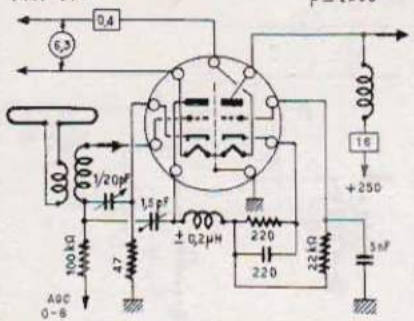
PENTHODE
S = 5,2
ρ = 0,4 MΩ
V = 0,9



6BM5 = 6P9
6BM8 = ECL82
6BQ5 = EL84
6BL8 = ECF80
6BR5 = EM80
6BS4 = EC93

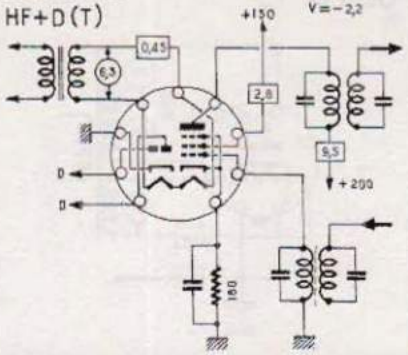
6BS8 (N)

VHF (T)



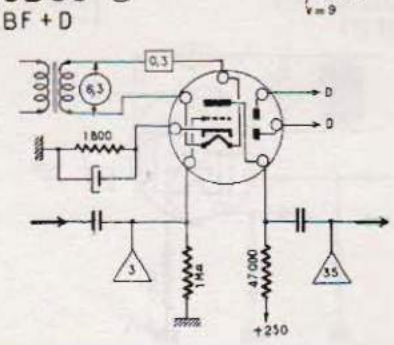
6BT8 (N)

HF+D (T)



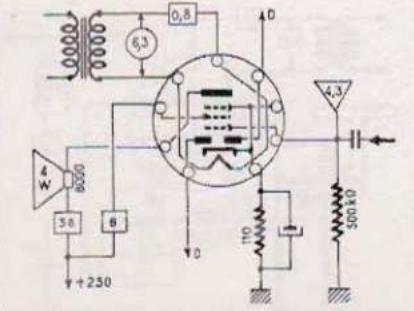
6BU6 (M)

BF + D



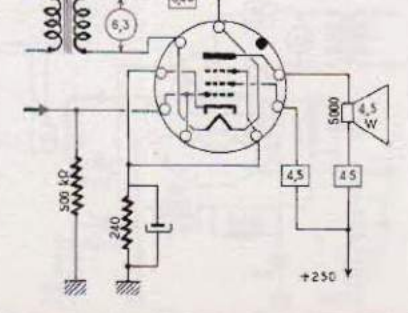
6BV7 (N)

P+D (T)

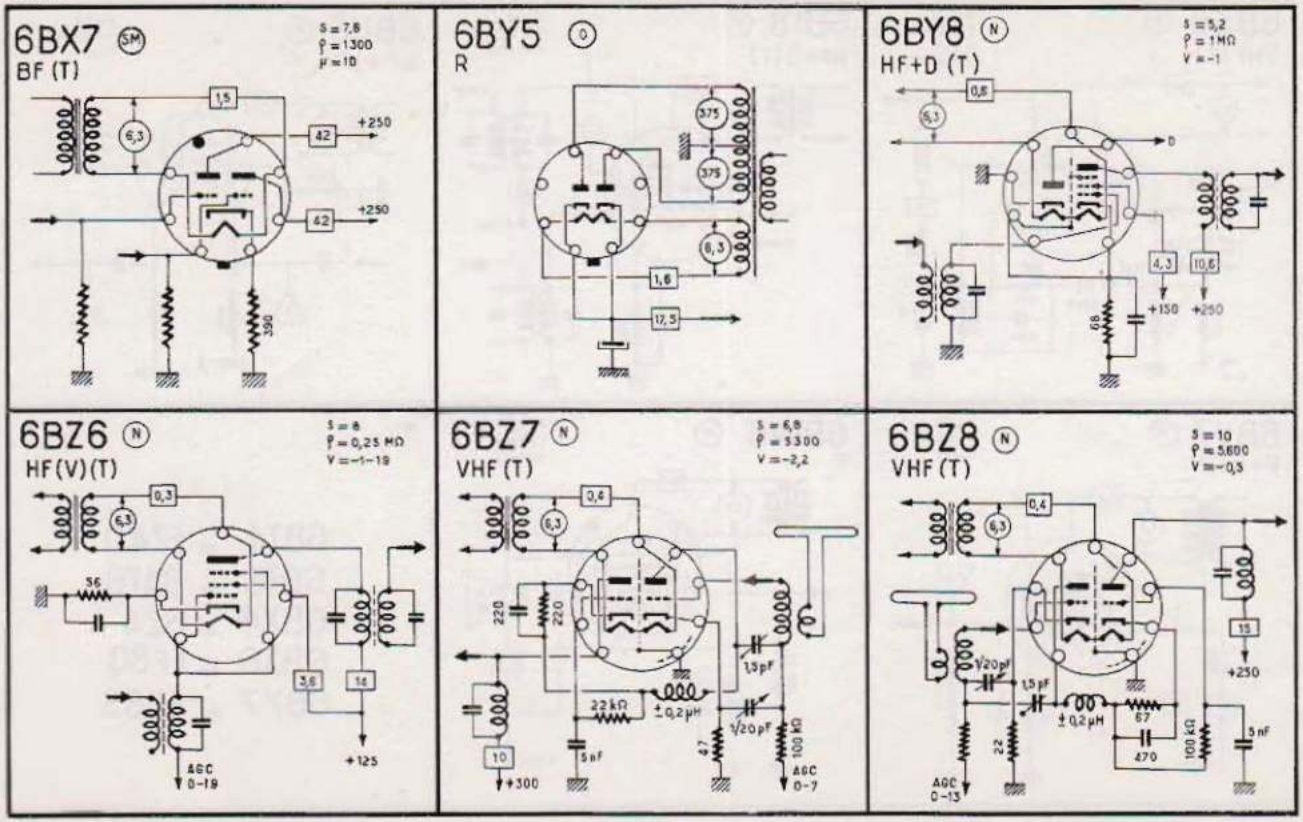


6BW6 (M)

P

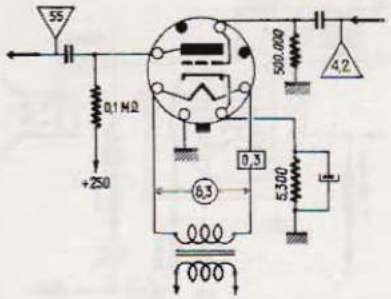


6BT4 = EZ40
6BT6 = 6AT6
6BX4 = 6Z4
6BX6 = EF80
6BY7 = EF85


6BX7 (SM)
BF (T)
S = 7,8
ρ = 1300
μ = 10
1,5
6,3
42
+250
42
+250
390
6BY5 (O)
R
375
375
6,3
1,6
17,5
6BY8 (N)
HF+D (T)
S = 5,2
ρ = 1 MΩ
V = -1
0,8
6,3
D
4,3
10,6
+150
+250
68
6BZ6 (N)
HF (V) (T)
S = 6
ρ = 0,25 MΩ
V = -1 -19
0,3
6,3
56
3,6
16
+125
AGC
0-19
6BZ7 (N)
VHF (T)
S = 6,8
ρ = 5300
V = -2,2
0,4
6,3
220
220
1,5 pF
22 kΩ
± 0,2 μH
1/20 pF
10
+300
5 nF
47
100 kΩ
AGC
0-7
6BZ8 (N)
VHF (T)
S = 10
ρ = 5600
V = -0,5
0,4
6,3
15
+250
1/20 pF
1,5 pF
± 0,2 μH
67
470
22
100 kΩ
5 nF
AGC
0-13

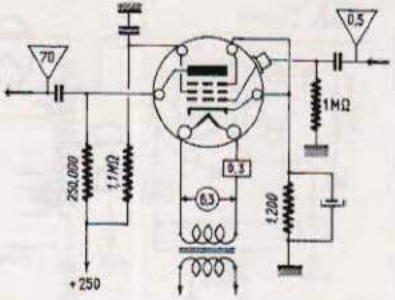
6C5 ⓪
BF

S = 2
P = 10.000
V = −8
I = 8



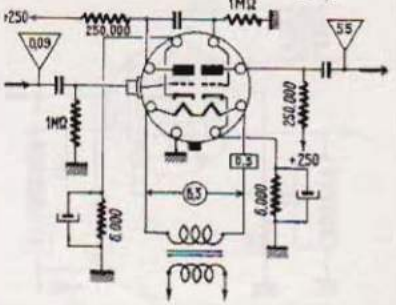
6C6 ⓤ3
BF

S = 1,2
P = 1 MΩ
V = 3



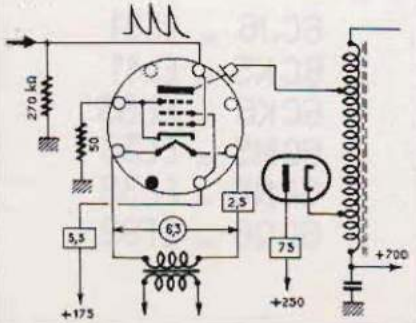
6C8 ⓪
BF + BF

S = 1,6
P = 22.500
V = −4,5
I = 3,2



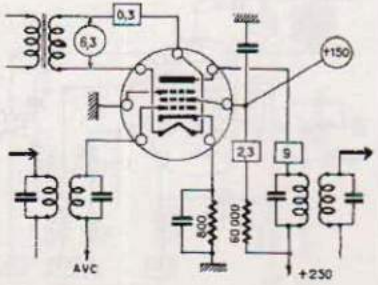
6CD6 ⓪
P(T)

S = 7,7
P = 7200 Ω
V = −30



6CG6 Ⓜ
HF

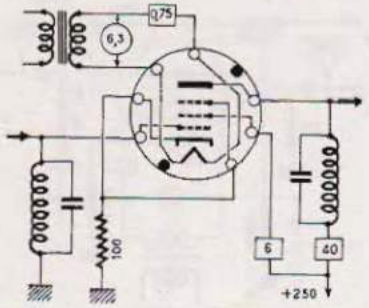
S = 2
P = 0,72 MΩ
V = −8



6C4 = EC90
6CA4 = EZ81
6CA7 = EL34
6CB6 = 6CF6
6CD7 = EM34
6CF8 = EF86
6CJ5 = EF41

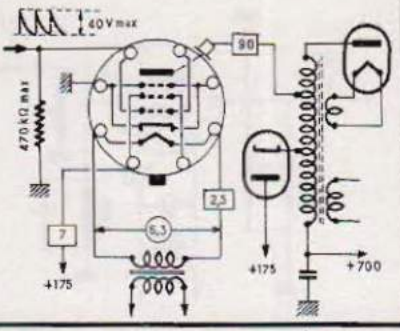
6CH6 (N)
HF(T)

S = 11
ρ = 50 kΩ
V = −4,5



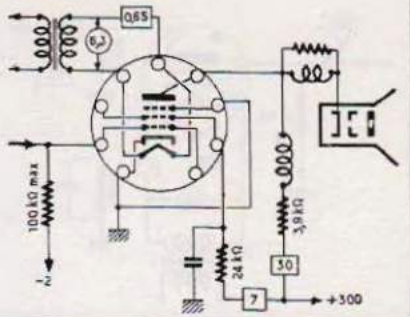
6CL5 (O)
P(T)

S = 6,5
ρ = 5.000
V = 0



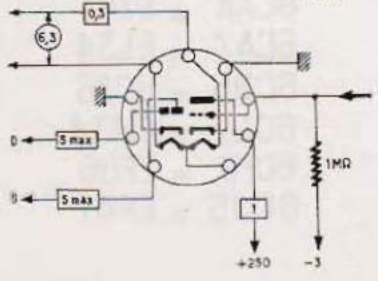
6CL6 (N)
VF(T)

S = 11
ρ = 0,15 MΩ
V = −3



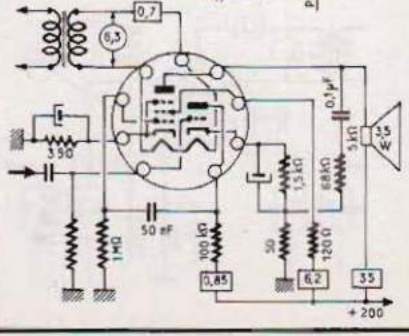
6CN7 (N)
D+VF(T)

S = 1,2
ρ = 58000
V = −1
μ = 70

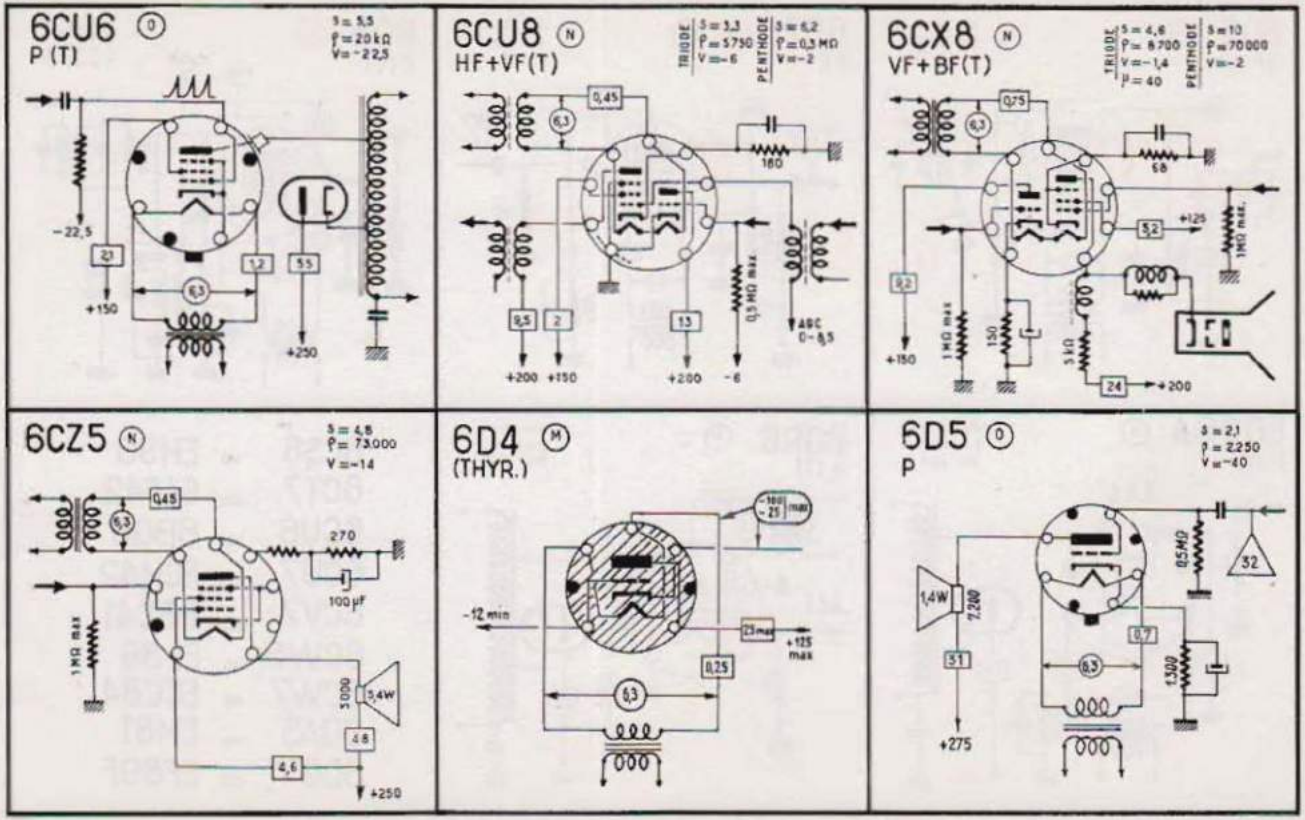


6CN8 (N)
BF(T)

TRIODE: S = 4,9 ρ = 12 kΩ V = −12 μ = 60
PENTHODE: S = 6,4 ρ = 20 kΩ V = −16

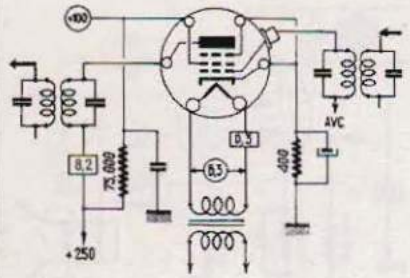


6CJ6 = EL81
6CK5 = EL41
6CK6 = EL83
6CM5 = EL36
6CN6 = EL38
6CQ6 = EF92


6CU6 ⓪
P (T)
S = 5,5
ρ = 20 kΩ
V = -22,5
-22,5
+150
+250
6CU8 Ⓝ
HF+VF(T)
TRIODE
S = 3,3
ρ = 5750
V = -6
PENTHODE
S = 6,2
ρ = 0,3 MΩ
V = -2
+200 +150
+200 -6
6CX8 Ⓝ
VF+BF(T)
TRIODE
S = 4,6
ρ = 8700
V = -1,4
μ = 40
PENTHODE
S = 10
ρ = 70000
V = -2
+150
+125
+200
6CZ5 Ⓝ
S = 4,8
ρ = 73000
V = -14
270
100 μF
1 MΩ max
3000
5,4W
+250
6D4 Ⓜ
(THYR.)
-12 min
+125 max
6D5 ⓪
P
S = 2,1
ρ = 2250
V = -40
1,4W
2200
0,5 MΩ
1500
+275

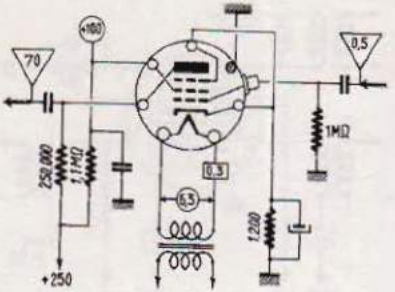
6D6 (US)
HF (V)

S = 1,6
ρ = 0,8 MΩ
Vs = -3 -50



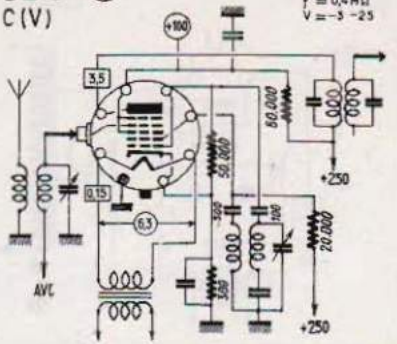
6D7 (6C6) (O)
BF

S = 1,2
ρ = 1 MΩ
Vs = -3



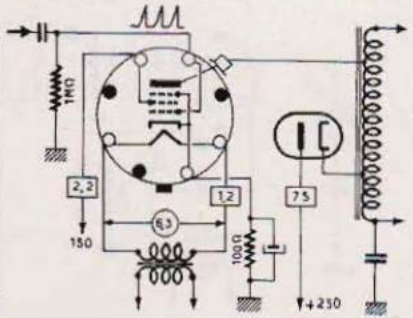
6D8 (O)
C (V)

Sc = 0,55
ρ = 0,4 MΩ
Vs = -3 -25



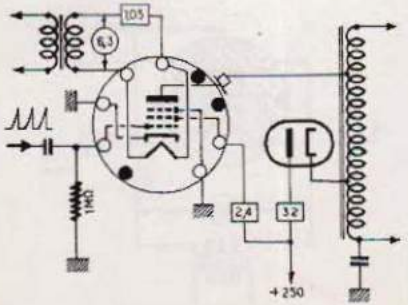
6DQ6A (O)
P (T)

S = 6,6
ρ = 20 kΩ
Vs = -22,5



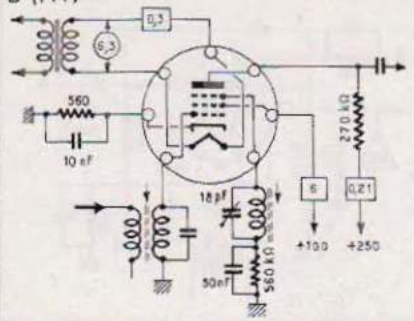
6DR6 (N)
P (T)

S = 4,6
ρ = 1,5 kΩ
Vs = -38,5

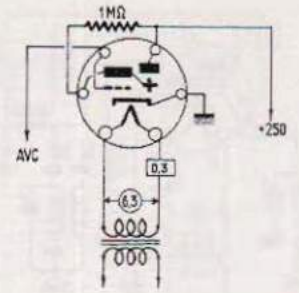


6CS6	=	EH90
6CT7	=	EAF42
6CU6	=	6BQ6
6CU7	=	ECH42
6CV7	=	EBC41
6CW5	=	EL86
6CW7	=	ECC84
6DA5	=	EM81
6DG7	=	EF89F

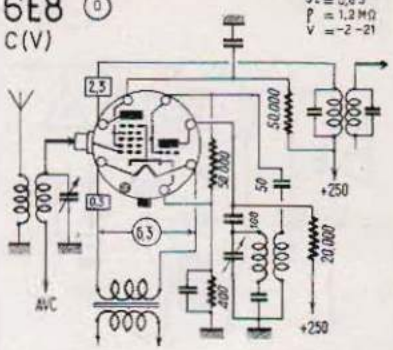
6DT6 (M)
D (FM)



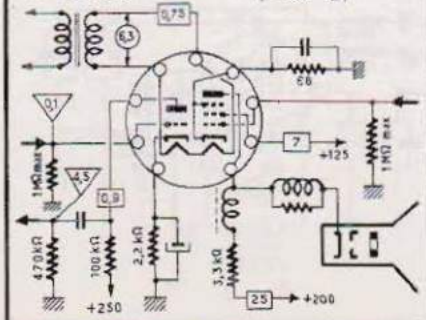
6E5 (US)
I



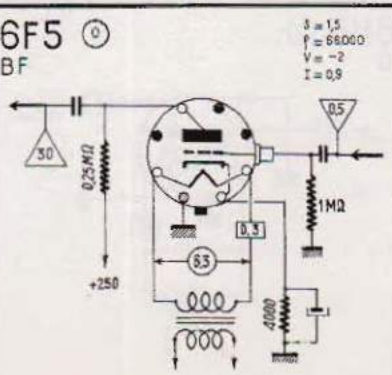
6E8 (O)
C(V)



6EB8 (N)
VF+BF (T)



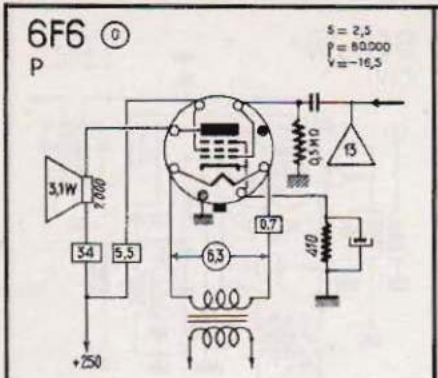
6F5 (O)
BF



6DA6 = EF89
6DC8 = EBF89
6DJ8 = ECC88
6DL5 = EL95
6DR8 = EBF83
6DS8 = ECH83
6DU6 = EM85
6DX8 = ECL84
6DY5 = EL82

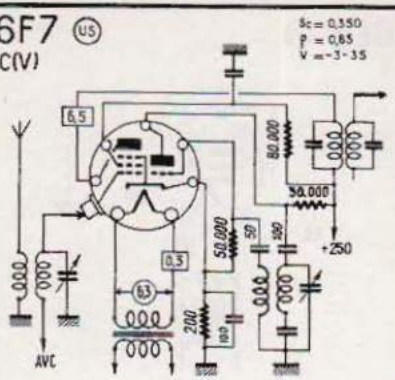
6F6 ⓓ

P



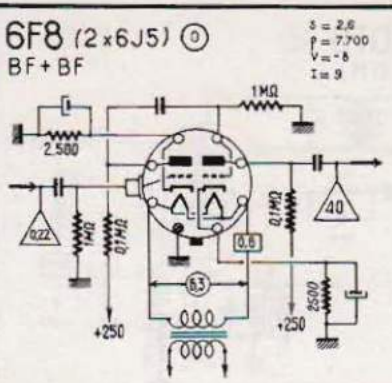
6F7 (US)

C(V)



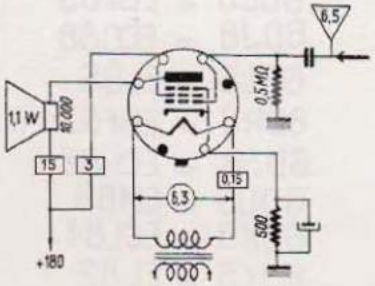
6F8 (2 x 6J5) ⓓ

BF + BF



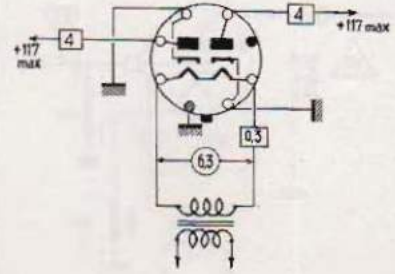
6G6 ⓓ

P



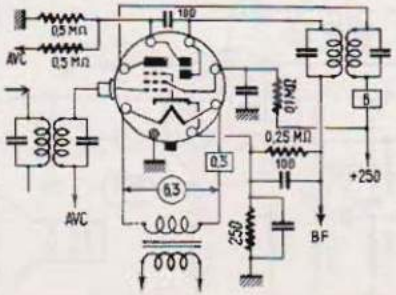
6H6 ⓓ

D



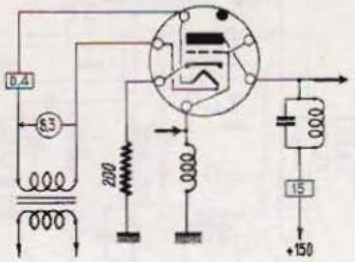
6H8 ⓓ

HF (V) + D



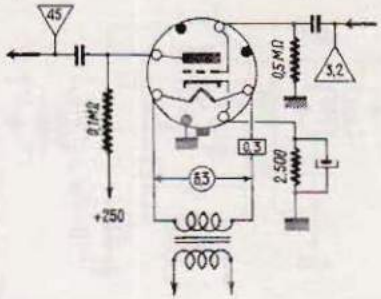
6J4 Ⓜ
HF (T)

S = 12
P = 4500
Vm = -3



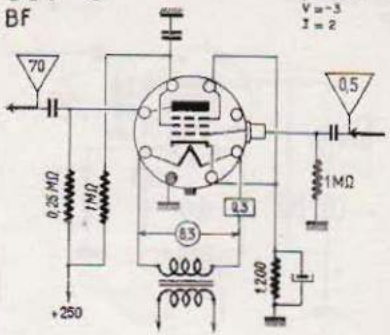
6J5 Ⓞ
BF

S = 2,6
P = 7.700
Vm = -8
I = 9



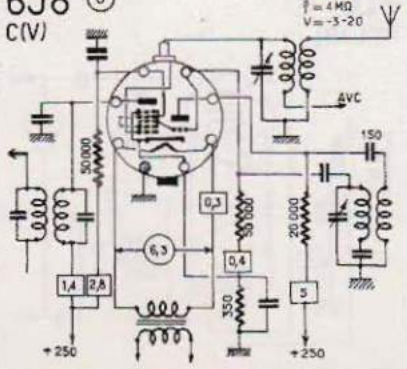
6J7 Ⓞ
BF

S = 1,22
P = 1,5MΩ
Vm = -3
I = 2



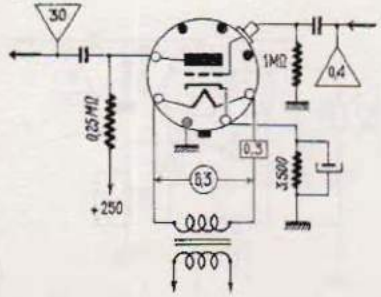
6J8 Ⓞ
C(V)

S = 0,29
P = 4MΩ
Vm = -3 -20



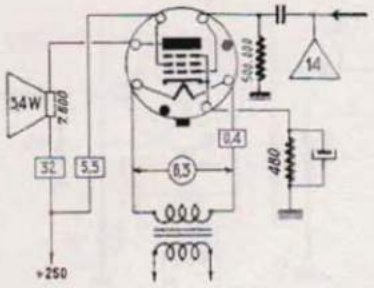
6K5 Ⓞ
BF

S = 1,4
P = 50000
Vm = -3

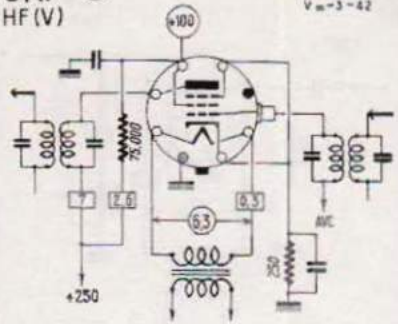


6ER5 = EC95
6ES6 = EF 97
6ES8 = ECC189
6ET6 = EF98
6FG6 = EM84

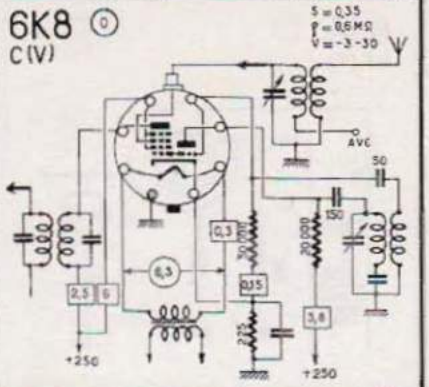
6K6 ⓪
P



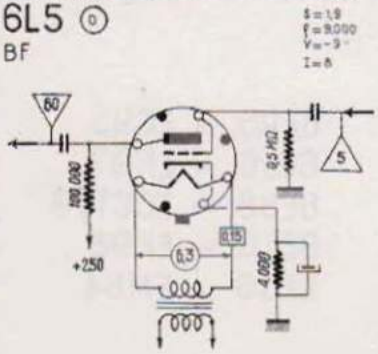
6K7 ⓪
HF (V)



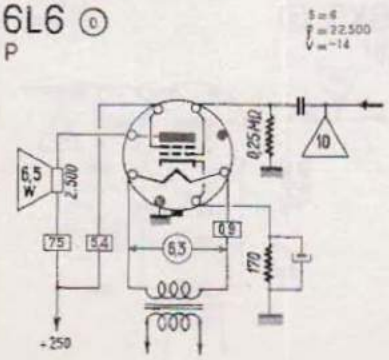
6K8 ⓪
C (V)



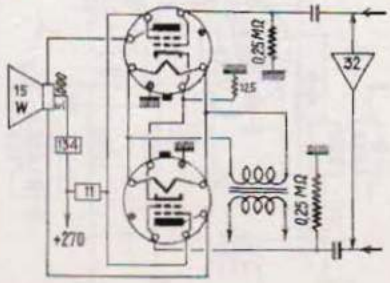
6L5 ⓪
BF



6L6 ⓪
P



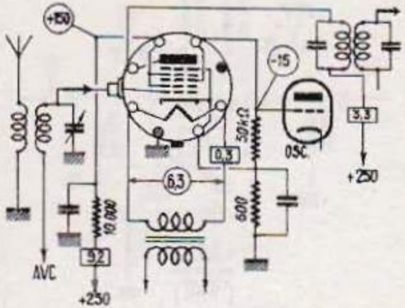
6L6 ⓪
P(Cl, AB)



6L7 (O)

C(V)

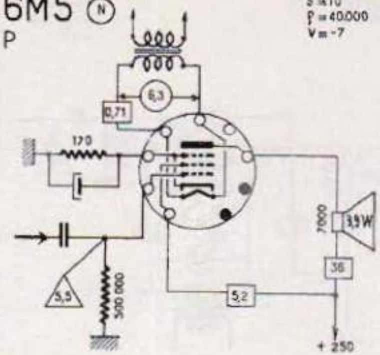
S_c ≈ 0,35
ρ = 1,5 MΩ
V = −6 −45



6M5 (N)

P

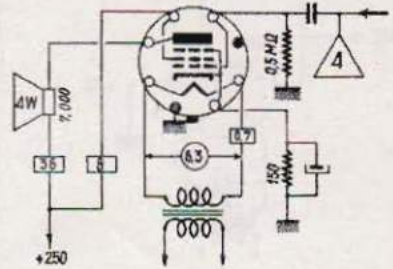
S = 10
ρ = 40.000
V = −7



6M6 (O)

P

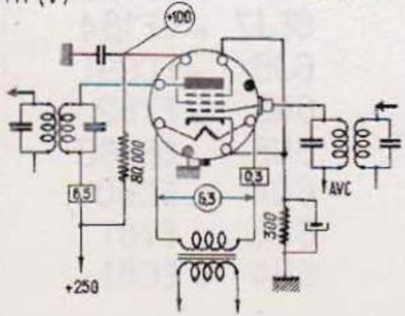
S = 9,5
ρ = 50.000
V = −6



6M7 (O)

HF(V)

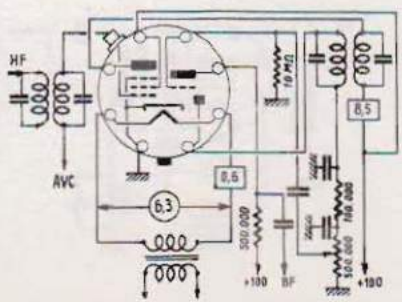
S = 2,8
ρ = 1,5 MΩ
V = −2,5 −26



6M8 (O)

HF(V) +D+BF

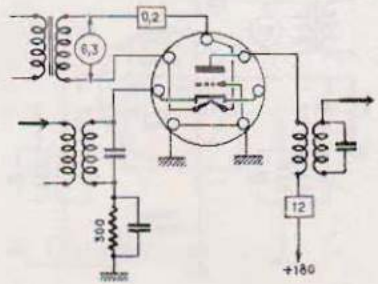
	PENTHODE	TRIODE
S	1,9	1,1
ρ	0,2	91.000
V	−3 −20	−1



6N4 (M)

HF (VHF)

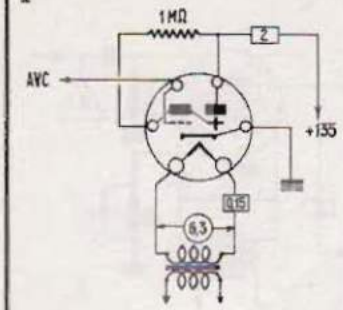
S = 6
ρ = 3400
V = −3,5



6N5 (US)

I

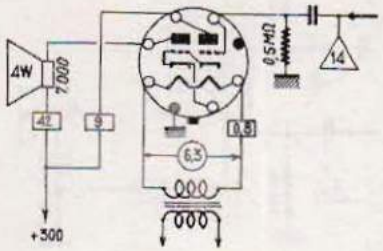
Va 0 -15,5



6N6 (O)

P

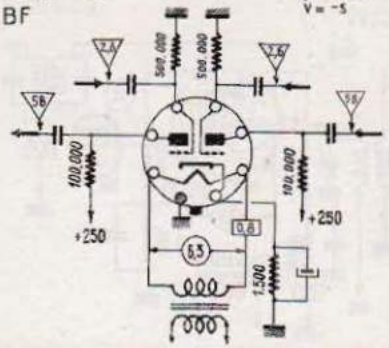
S = 2,4
P = 24.000
Va = 0



6N7 (O)

BF

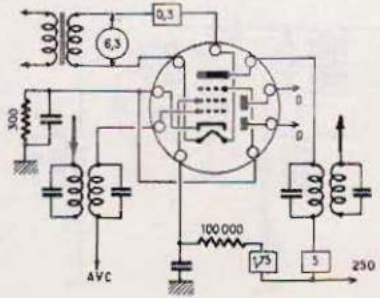
S = 1,6
P = 22.000
Va = -5



6N8 (N)

HF (V) + D

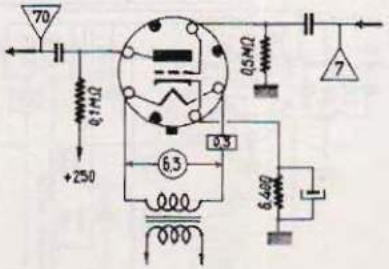
S = 2,2
P = 1,6 MΩ
Va = -2 -20



6P5 (O)

BF

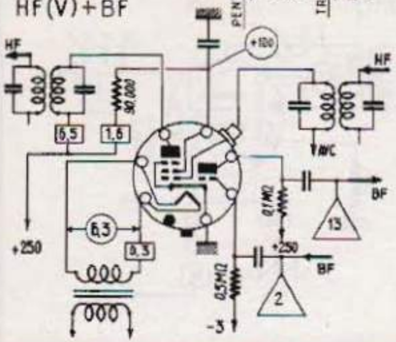
S = 1430
P = 9.500
Va = -13,5
Ia = 5



6EH7 = EF183
6EJ7 = EF184
6J6 = ECC91
6N3 = EY82
6N8 = EBF80
6Q4 = EC80
6R3 = EY81
6R4 = EC81

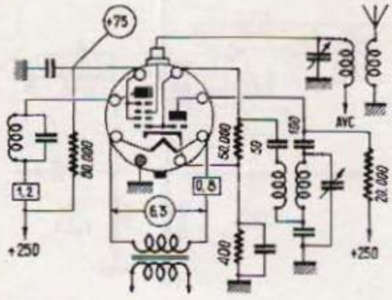
6P7 (6F7) (O)
HF(V)+BF

PENTHODE: S = 1,1 ; ρ = 0,85 ; V = -3.35
TRIODE: S = 0,5 ; ρ = 16000 ; V = -3



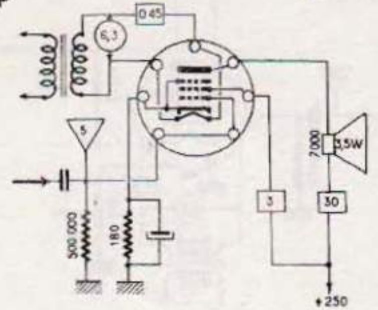
6P8 (O)
C(V)

Sc = 0,5
ρ = 1MΩ
V = -3 -25



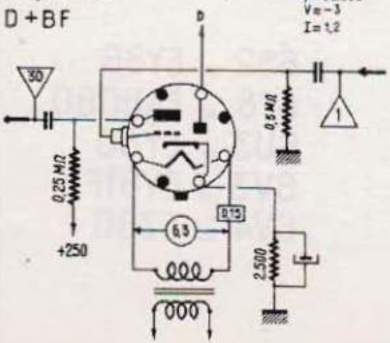
6P9 (M)
P

S = 7
ρ = 60000
V = -6



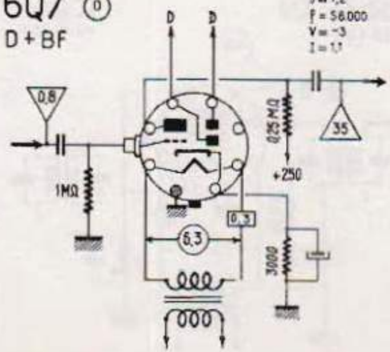
6Q6 (O)
D+BF

S = 1
ρ = 62000
V = -3
I = 1,2



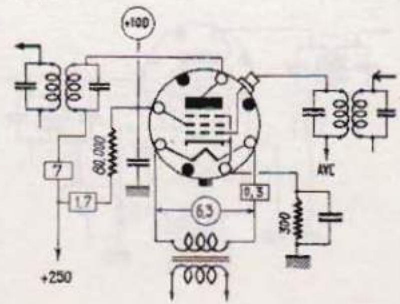
6Q7 (O)
D+BF

S = 1,2
ρ = 56000
V = -3
I = 1,1

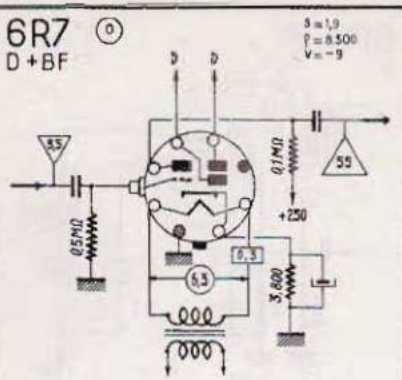


6R6 (O)
HF(V)

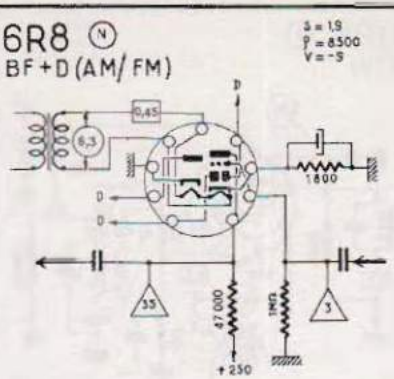
S = 1,4
ρ = 0,8MΩ
V = -3 -25



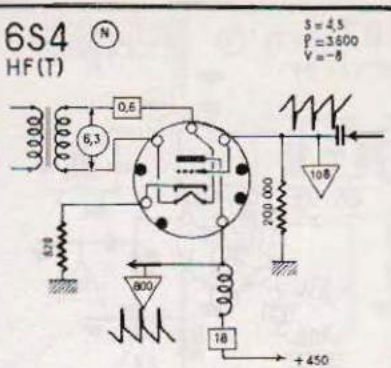
6R7 (O)
D + BF



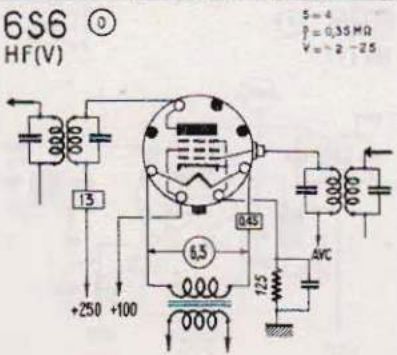
6R8 (N)
BF + D (AM/FM)



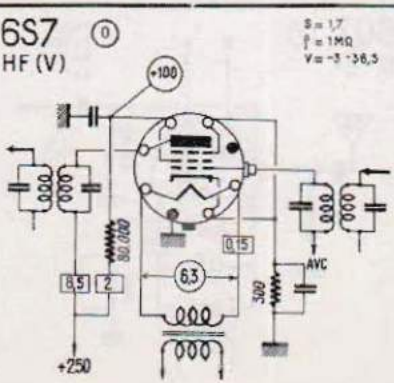
6S4 (N)
HF (T)



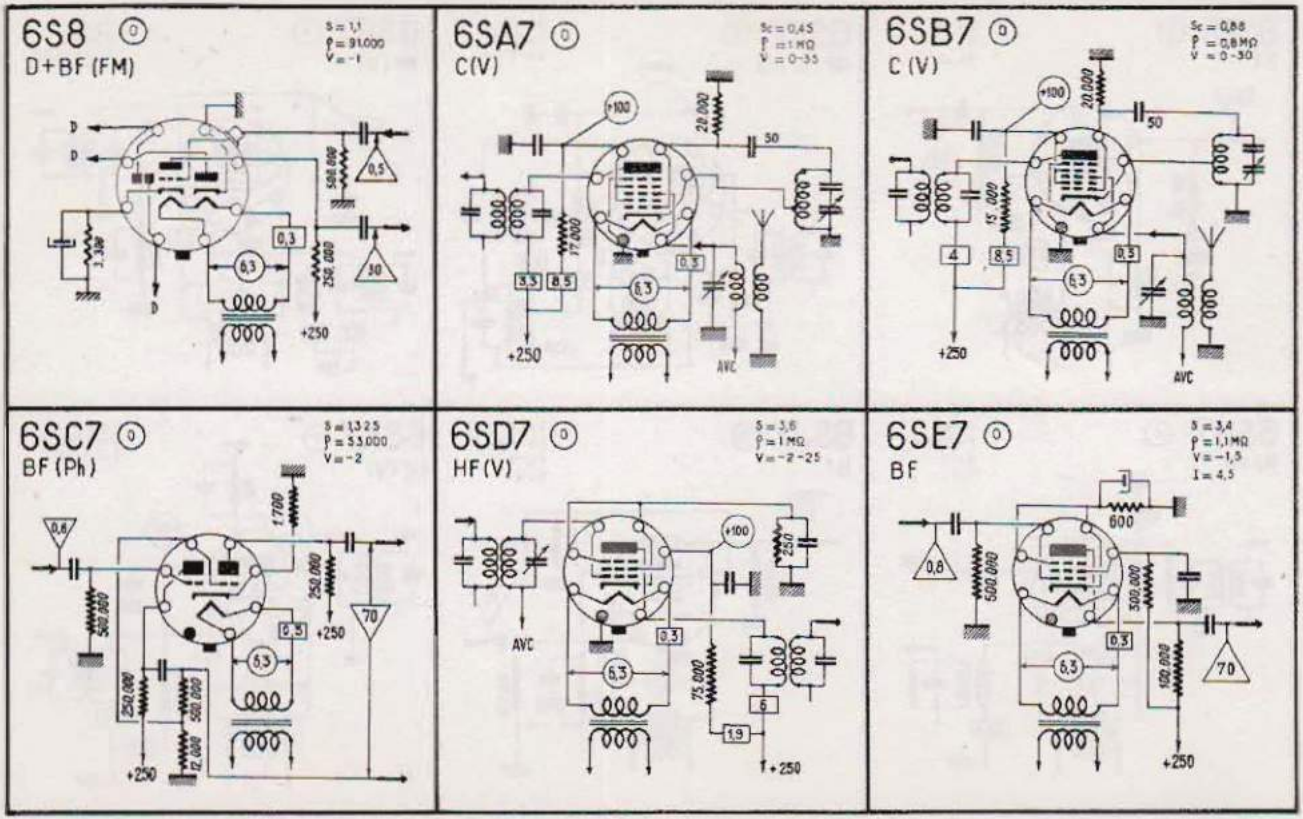
6S6 (O)
HF (V)

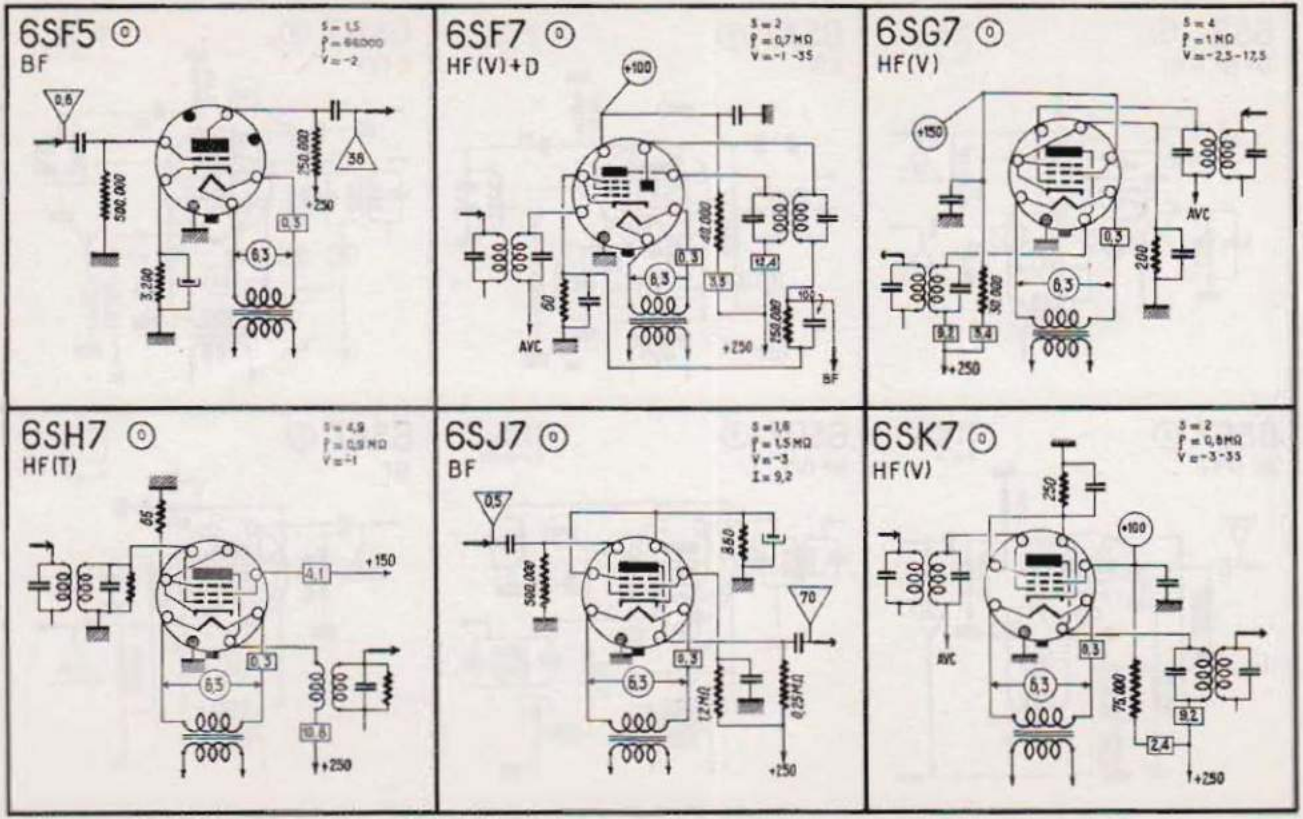


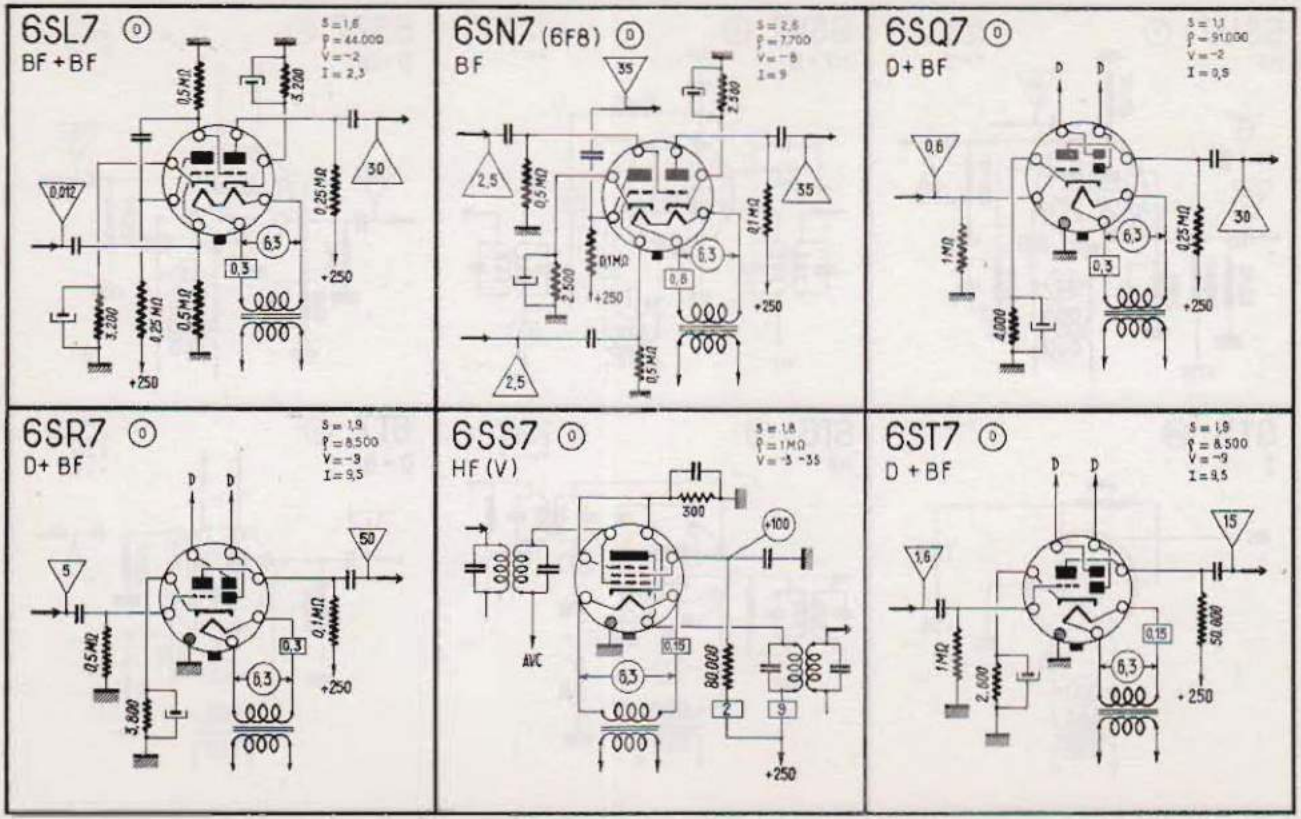
6S7 (O)
HF (V)



6S2 = EY86
6T8 = EABC80
6U3 = EY80
6V3 = EY81F
6V4 = EZ80

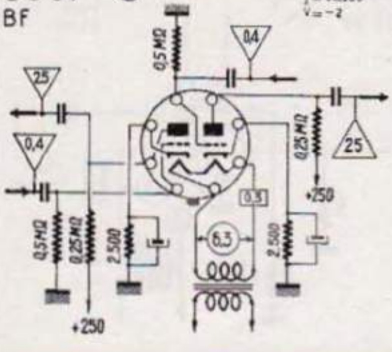

6S8
D+BF (FM)
S = 1,1
ρ = 91.000
V = -1
6SA7
C(V)
Sc = 0,45
ρ = 1 MΩ
V = 0-35
6SB7
C (V)
Sc = 0,88
ρ = 0,8 MΩ
V = 0-30
6SC7
BF (Ph)
S = 1,325
ρ = 53.000
V = -2
6SD7
HF(V)
S = 3,6
ρ = 1 MΩ
V = -2-25
6SE7
BF
S = 3,4
ρ = 1,1 MΩ
V = -1,5
I = 4,5
+250
AVC


6SF5 ⓞ
BF
S = 1,5
P = 66000
V = -2
0,6
500.000
250.000
36
+250
0,3
6,3
3.200
6SF7 ⓞ
HF(V)+D
S = 2
P = 0,7 MΩ
V = -1 -35
+100
40.000
0,3
12,4
1,5
6,3
60
AVC
250.000
+250
100
BF
6SG7 ⓞ
HF(V)
S = 4
P = 1 MΩ
V = -2,5 -12,5
+150
AVC
0,3
6,3
200
500.000
6,1
12,4
+250
6SH7 ⓞ
HF(T)
S = 4,9
P = 0,9 MΩ
V = -1
65
+150
4,1
0,3
6,3
10,6
+250
6SJ7 ⓞ
BF
S = 1,6
P = 1,5 MΩ
V = -3
I = 9,2
0,5
560.000
850
70
0,3
6,3
1,2 MΩ
0,25 MΩ
+250
6SK7 ⓞ
HF(V)
S = 2
P = 0,8 MΩ
V = -3 -35
250
+100
AVC
0,3
6,3
75.000
9,2
2,4
+250


6SL7
BF + BF
S = 1,6
ρ = 44.000
V = −2
I = 2,3
0,5 MΩ
3.200
0,012
0,25 MΩ
0,5 MΩ
6,3
0,3
30
+250
6SN7 (6F8)
BF
S = 2,6
ρ = 7.700
V = −8
I = 9
35
2,5
0,5 MΩ
2.500
0,1 MΩ
0,8
+250
6SQ7
D + BF
S = 1,1
ρ = 91.000
V = −2
I = 0,5
D D
0,6
1 MΩ
4.000
0,25 MΩ
6,3
0,3
30
+250
6SR7
D + BF
S = 1,9
ρ = 8.500
V = −9
I = 9,5
D D
5
0,5 MΩ
3.800
0,1 MΩ
0,3
6,3
50
+250
6SS7
HF (V)
S = 1,8
ρ = 1 MΩ
V = −3 −35
300
+100
AVC
0,15
6,3
80.000
2
9
+250
6ST7
D + BF
S = 1,9
ρ = 8.500
V = −9
I = 9,5
D D
1,6
1 MΩ
2.000
0,15
6,3
15
50.000
+250

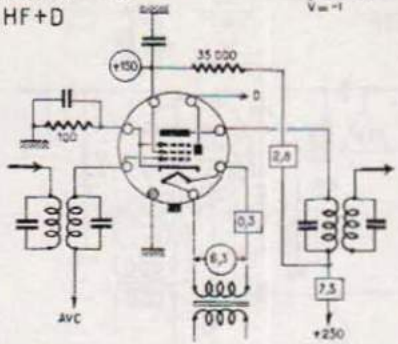
6SU7 (O)
BF

S = 1,6
ρ = 44.000
V = -2



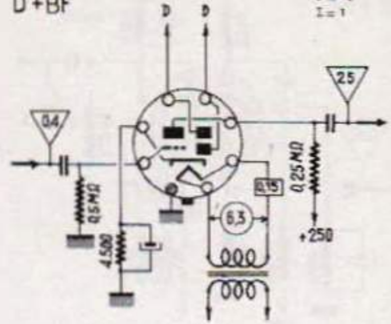
6SV7 (O)
HF + D

S = 3,6
ρ = 1,5 MΩ
V = -1



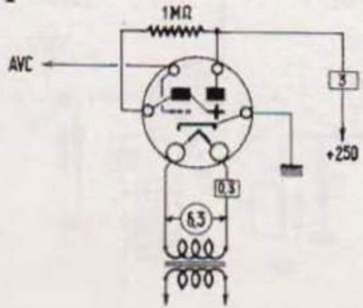
6SZ7 (O)
D + BF

S = 1,2
ρ = 58000
V = -3
I = 1



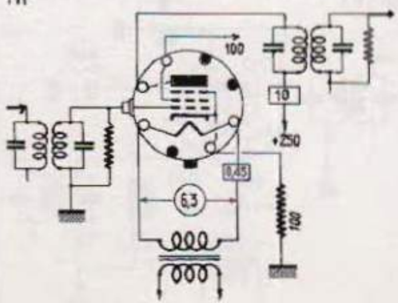
6T5 (US)
I

V = 0 - 22



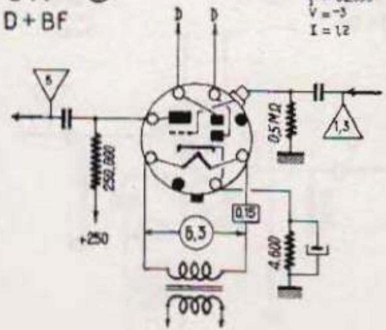
6T6 (O)
HF

S = 5,5
ρ = 1 MΩ
V = -1



6T7 (O)
D + BF

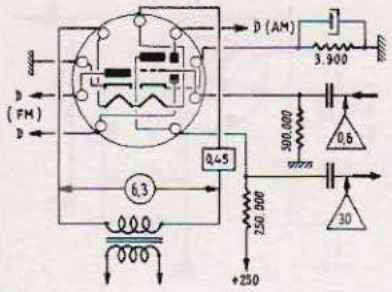
S = 1
ρ = 62.000
V = -3
I = 1,2



6T8 (AM/FM) (N)

D + BF

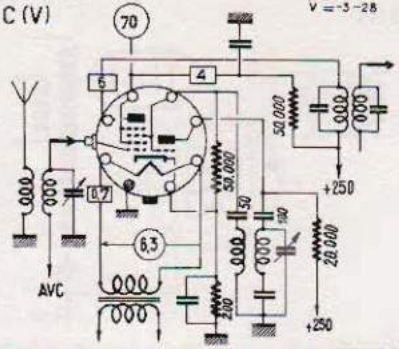
S = 1,2
P = 58.000
V = -3



6TH8 (O)

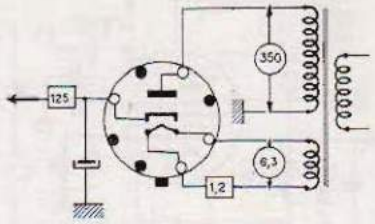
C (V)

S = 0,8
P = 1 MΩ
V = -3 -28



6U4 (O)

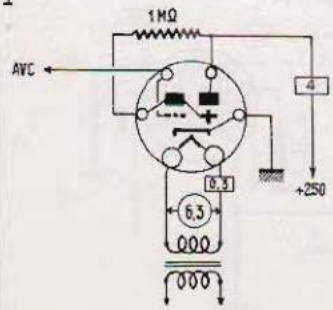
R



6U5/6G5 (US)

I

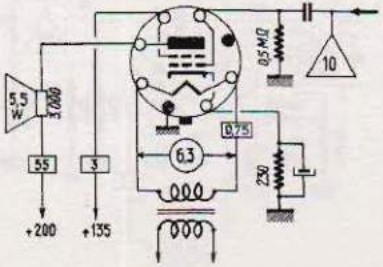
V = 0-22



6U6 (O)

P

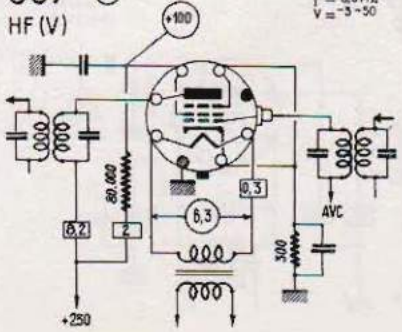
S = 6,2
P = 20000
V = -14



6U7 (O)

HF (V)

S = 1,6
P = 0,8 MΩ
V = -3 -50

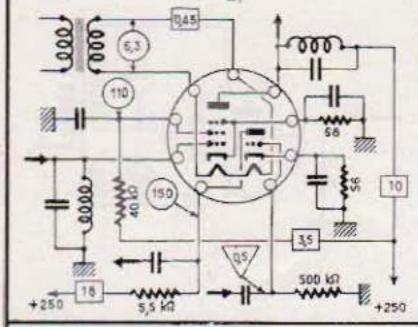


6U8 (N)

HF- BF(T)

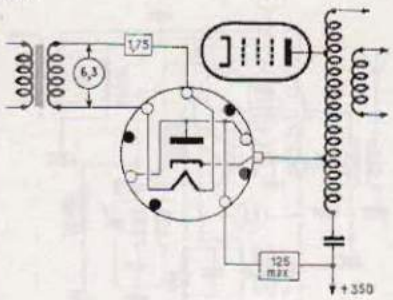
PENTHODE S = 3,2 mA/V, ρ = 400 kΩ

TRIODE S = 8,3 mA/V, ρ = 5 kΩ, μ = 40



6V3 (N)

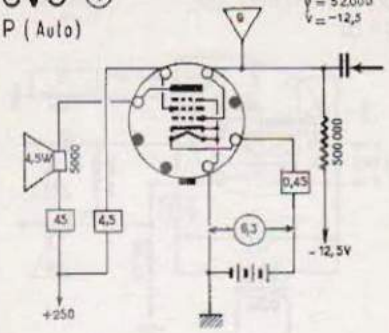
D(T)



6V5 (O)

P (Auto)

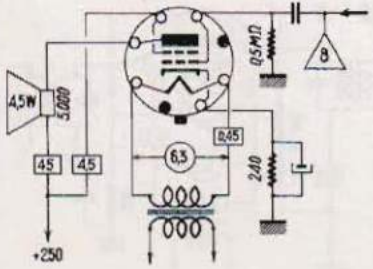
S = 4,1 mA/V, ρ = 52.000 Ω, V = -12,5



6V6 (O)

P

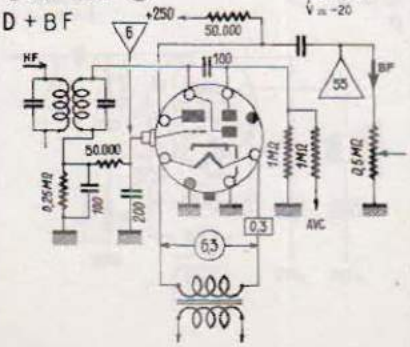
S = 4,1 mA/V, ρ = 52.000 Ω, V = -12,5



6V7=85 (O)

D + BF

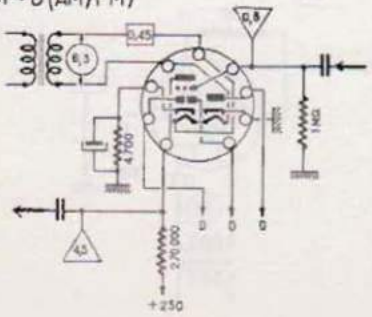
S = 1,1 mA/V, ρ = 7.500 Ω, V = -20



6V8 (N)

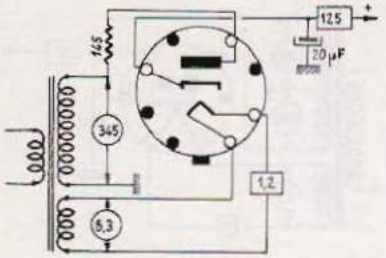
BF+D(AM/FM)

S = 12 mA/V, ρ = 58.000 Ω, V = -3



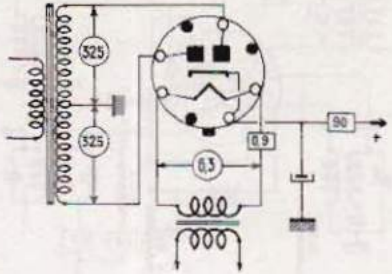
6W4 ⓪

R(T)



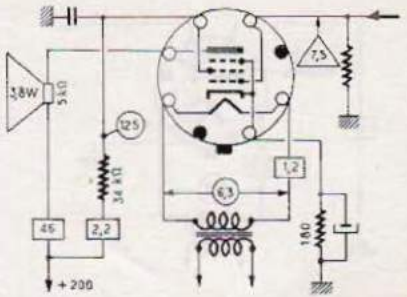
6W5 ⓪

R



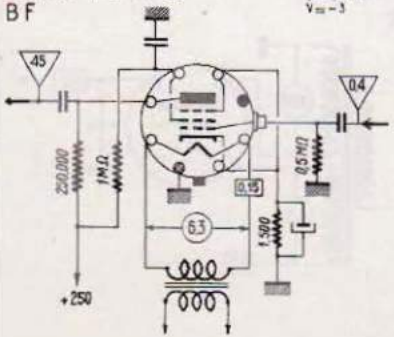
6W6 ⓪

P(T)



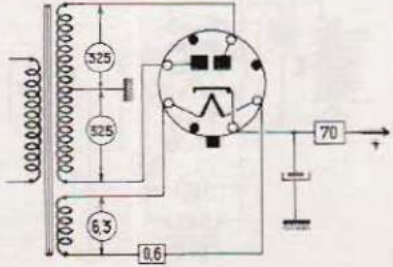
6W7 (6J7) ⓪

BF



6X5 ⓪

R

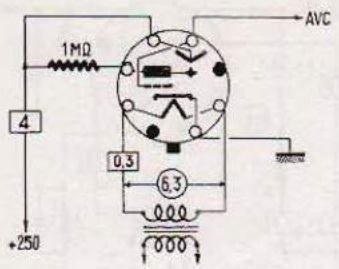


6X2 = EY51
6X4 = EZ90
7AN7 = PCC84

6X6 (6E5) ⓪

I

V = 0 ~ 6

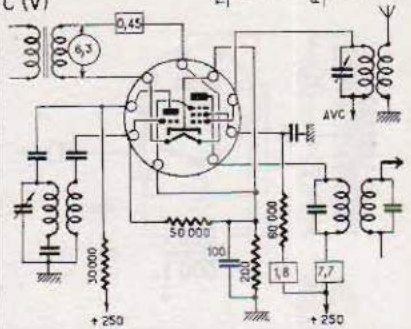


6X8 Ⓝ

C (V)

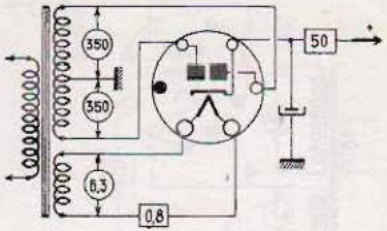
TRIODE S = 58 ρ = 6000 V = −3

PENTHODE S = 4,6 ρ = 0,75MΩ V = −3



6Y5 (US)

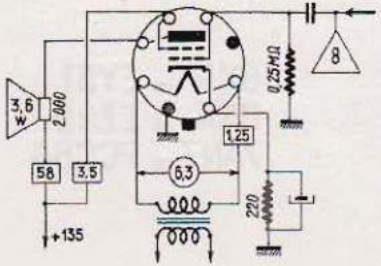
R



6Y6 ⓪

P

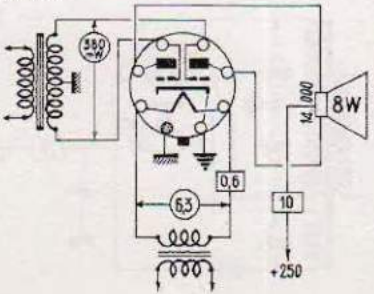
S = 7
ρ = 9300
V = −13,5



6Y7 (79) ⓪

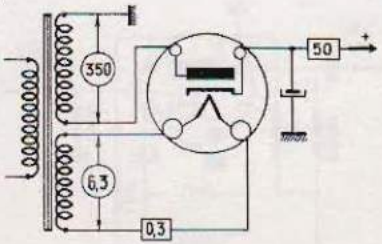
P (Cl.B)

V = 0



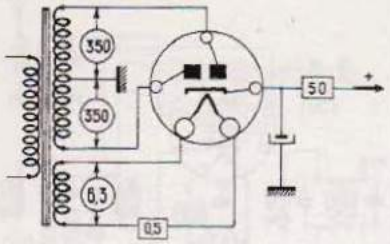
6Z3 (US)

R



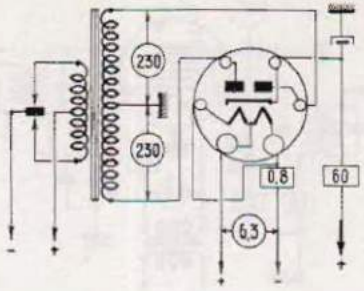
6Z4 (US)

R



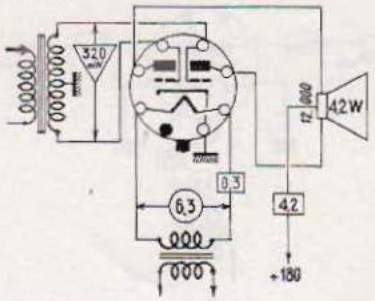
6Z5 (US)

R



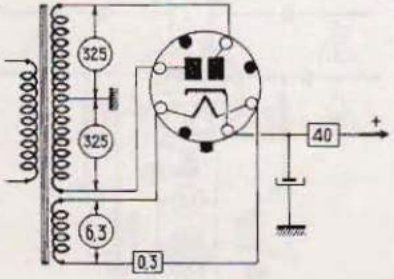
6Z7 (D)

P(C1.B)



6ZY5 (D)

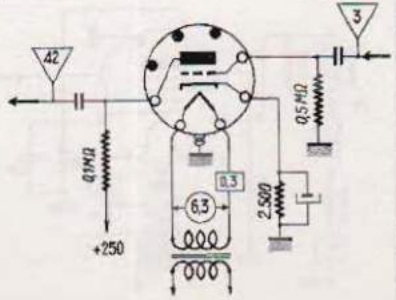
R



7A4 (6J5) (L)

BF

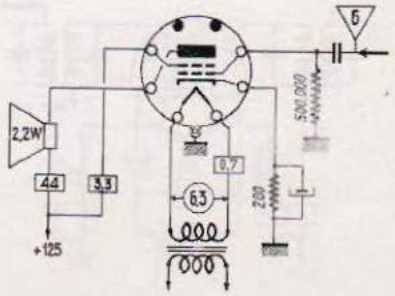
S = 2,6
P = 7700
V = -8
I = 9



7A5 (L)

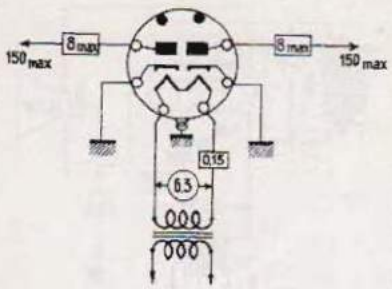
P

S = 5
P = 17,000
V = -9



7A6 (6H6)

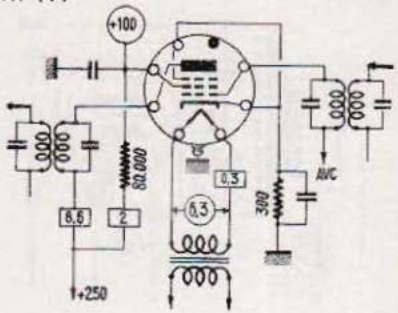
D



7A7 (6SK7)

HF (V)

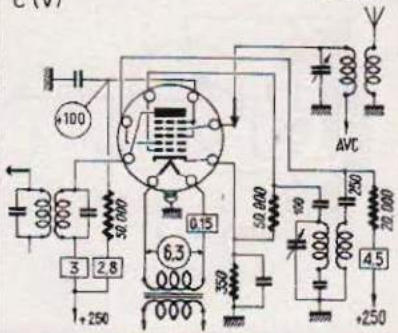
S = 2
ρ = 0,8 MΩ
V = -3 -35



7A8 (6A8)

C (V)

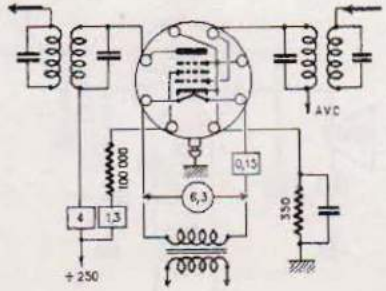
Se = 0,6
ρ = 0,7
V = -3 -30



7AB7

HF

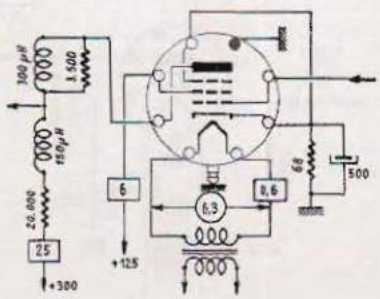
S = 1,8
ρ = 0,5 MΩ
V = -2 -18



7AD7

HF (T)

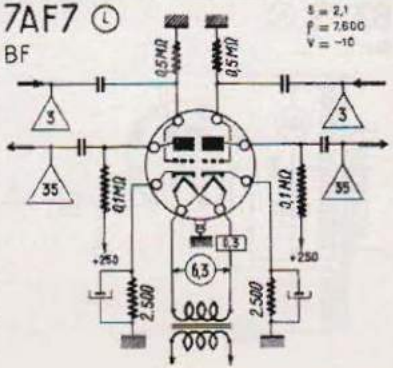
S = 9,5
ρ = 0,3 MΩ
V = -3



7AF7

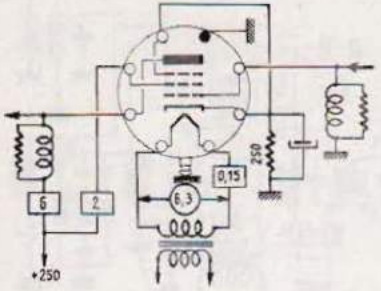
BF

S = 2,1
ρ = 7.600
V = -10



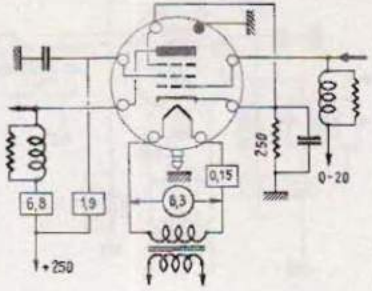
7AG7 ⓛ
HF (T)

S = 4,2
ρ = > 1 MΩ
V = -2



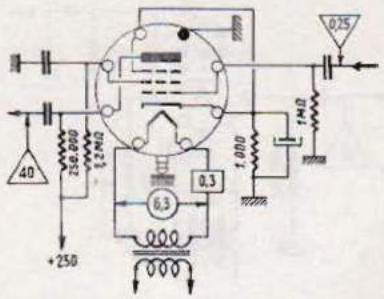
7AH7 ⓛ
HF (T)

S = 3,3
ρ = 1 MΩ
V = -2 -20



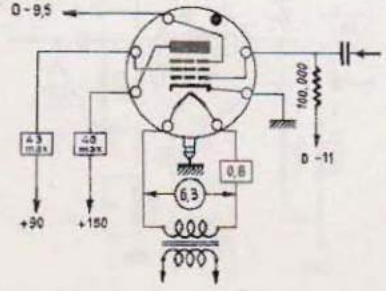
7AJ7 (6SJ7) ⓛ
BF

S = 1,57
ρ = 1 MΩ
V = -3



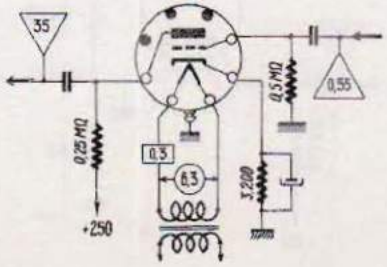
7AK7 ⓛ
HF (T)

S = 6,5
ρ = 11.500
V = 0-11



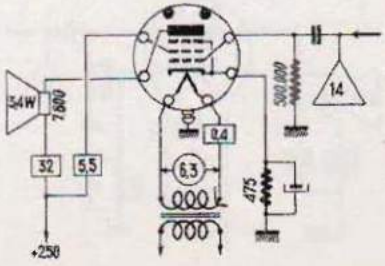
7B4 (6SF5) ⓛ
BF

S = 1,5
ρ = 66.000
V = -2



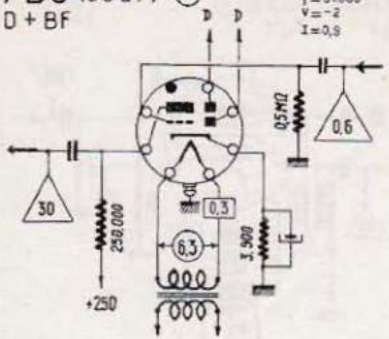
7B5 (6K6) ⓛ
P

S = 2,3
ρ = 68.000
V = -18



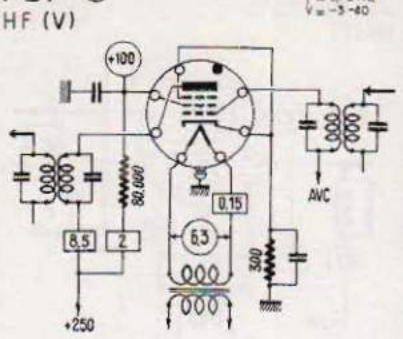
7B6 (6SQ7) Ⓛ

D + BF



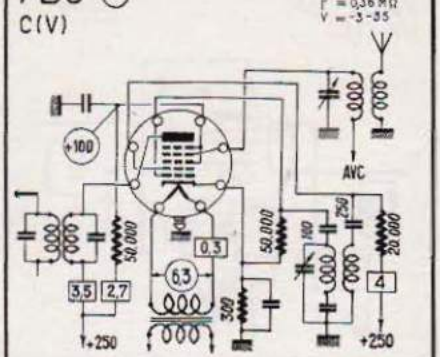
7B7 Ⓛ

HF (V)



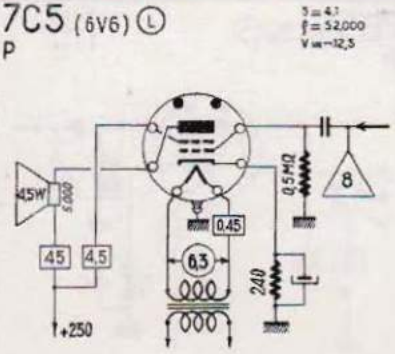
7B8 Ⓛ

C (V)



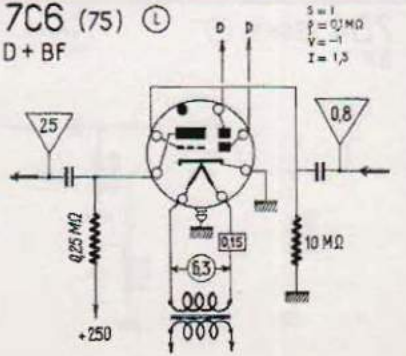
7C5 (6V6) Ⓛ

P



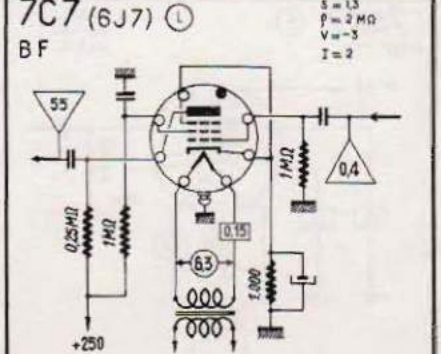
7C6 (75) Ⓛ

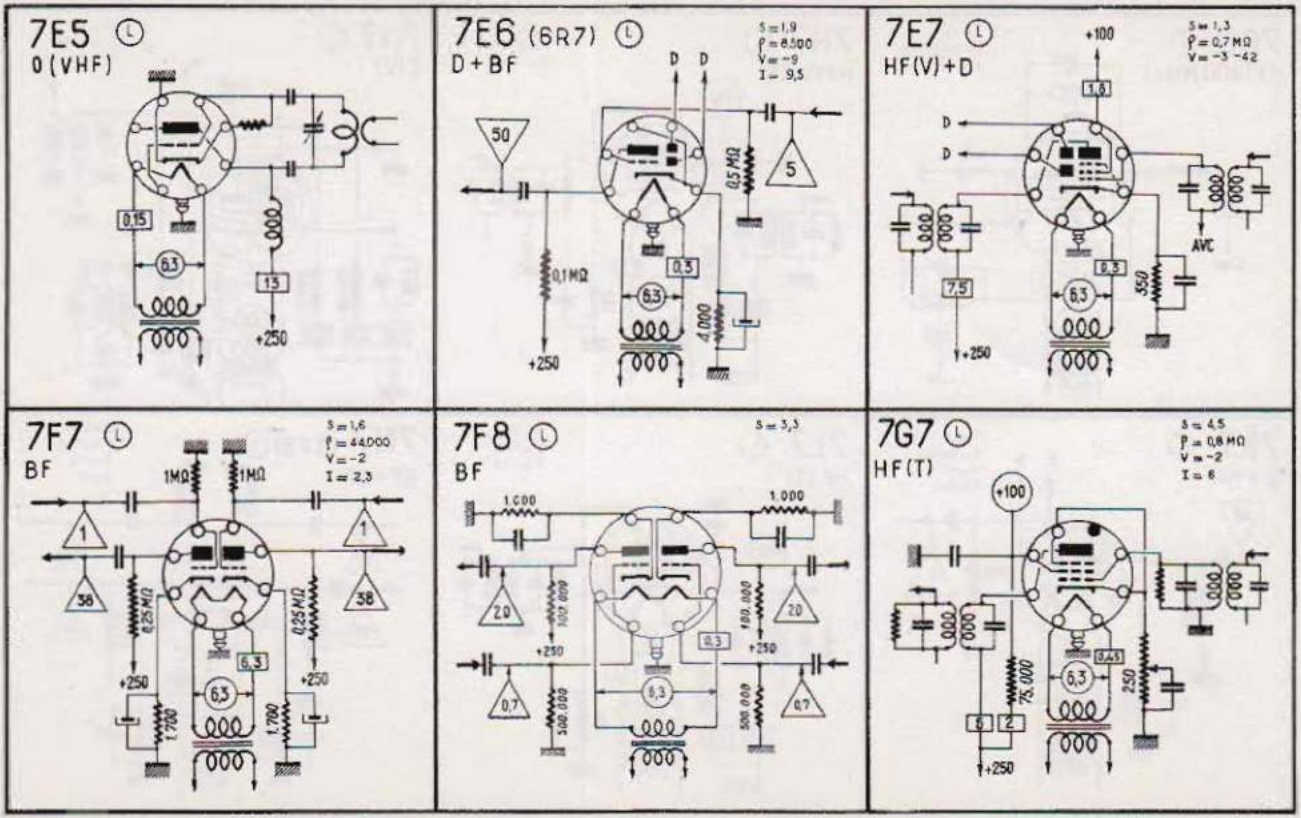
D + BF



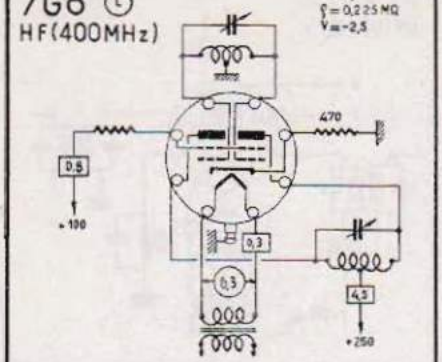
7C7 (6J7) Ⓛ

BF

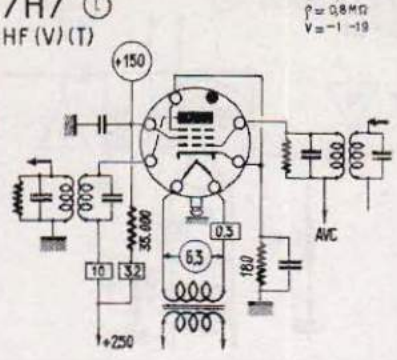



7E5
0 (VHF)
0,15
6,3
15
+250
7E6 (6R7)
D+BF
S = 1,9
ρ = 8.500
V = -9
I = 9,5
D D
50
5
0,5 MΩ
0,1 MΩ
0,3
6,3
4.000
+250
7E7
HF(V)+D
+100
S = 1,3
ρ = 0,7 MΩ
V = -3 -42
1,6
D
D
AVC
8,3
6,3
7,5
350
+250
7F7
BF
S = 1,6
ρ = 44.000
V = -2
I = 2,3
1MΩ
1MΩ
1
1
38
38
0,25 MΩ
0,25 MΩ
+250
+250
6,3
1.700
1.700
7F8
BF
S = 3,3
1.000
1.000
2,0
2,0
100.000
100.000
+250
+250
0,3
6,3
0,7
0,7
500.000
500.000
7G7
HF(T)
+100
S = 4,5
ρ = 0,8 MΩ
V = -2
I = 6
6,45
6,3
75.000
250
6
2
+250

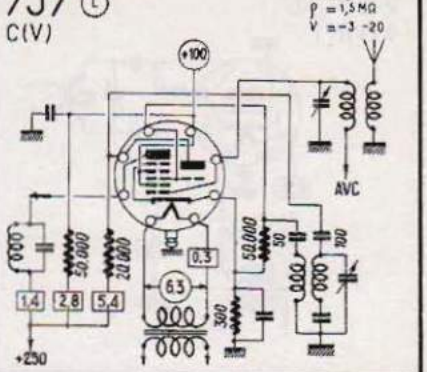
7G8 (L)
HF(400MHz)



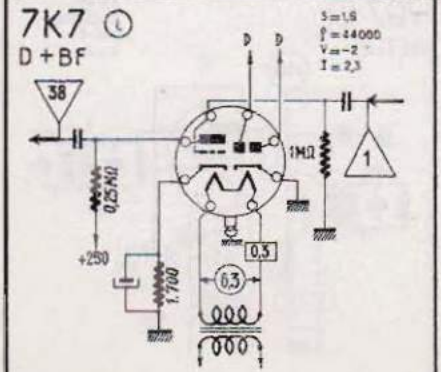
7H7 (L)
HF (V) (T)



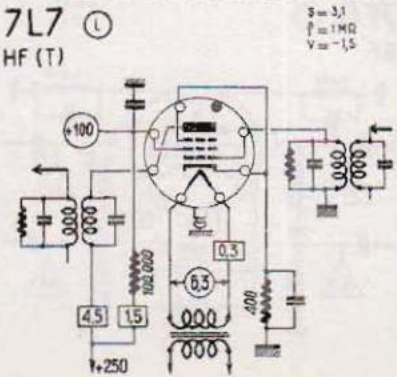
7J7 (L)
C(V)



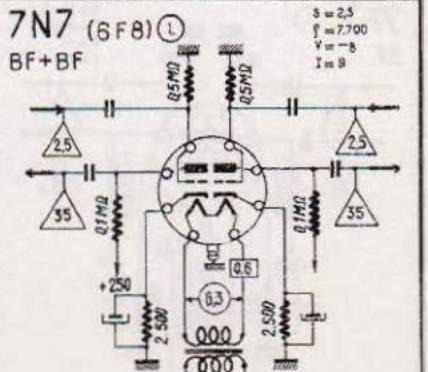
7K7 (L)
D + BF

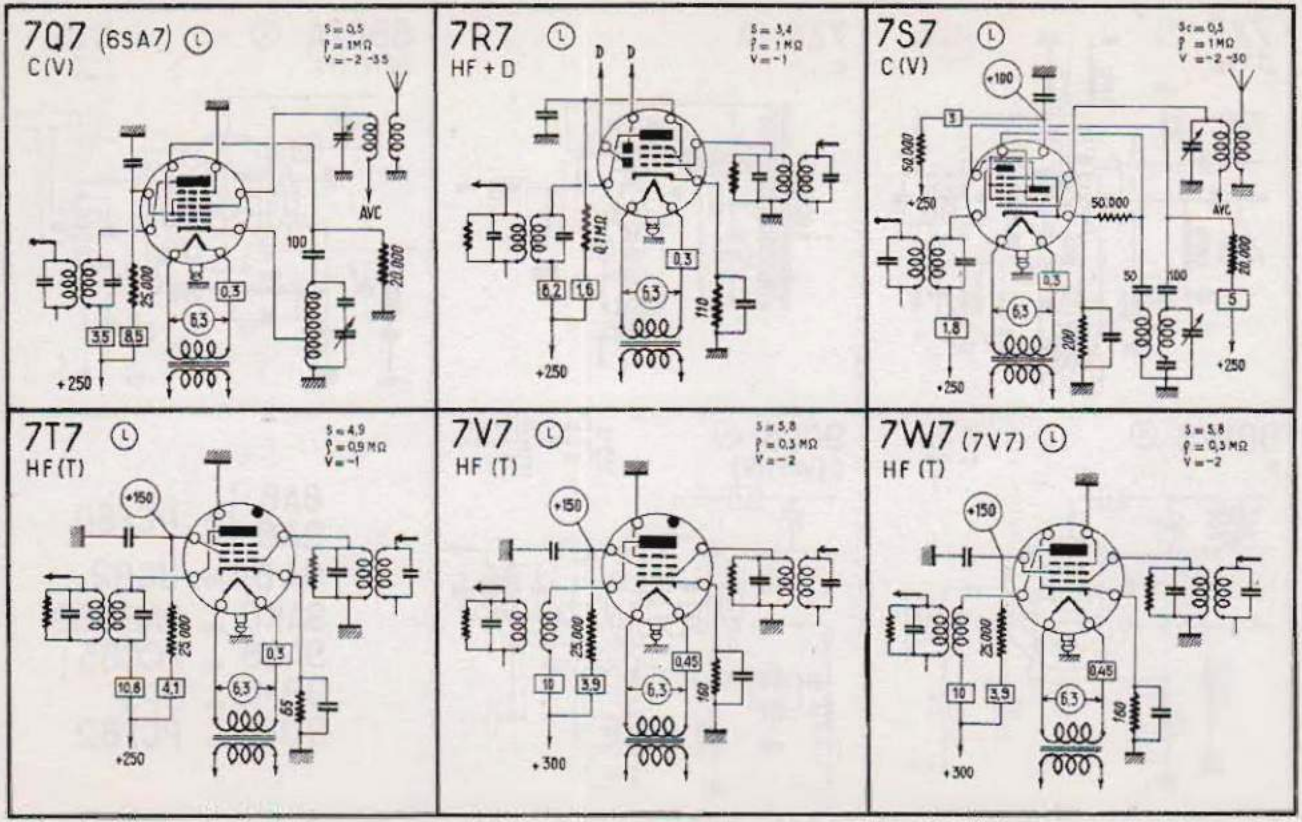


7L7 (L)
HF (T)



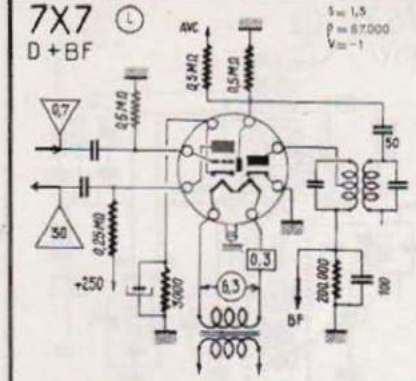
7N7 (6F8) (L)
BF + BF




7Q7 (6SA7)
C(V)
S = 0,5
ρ = 1 MΩ
V = −2 −35
AVC
100
20.000
25.000
0,3
6,3
3,5
8,5
+250
7R7
HF + D
S = 3,4
ρ = 1 MΩ
V = −1
D
D
0,1 MΩ
0,3
6,2
1,6
6,3
110
+250
7S7
C(V)
S = 0,5
ρ = 1 MΩ
V = −2 −30
+100
50.000
+250
50.000
AVC
0,3
6,3
50
100
200
20.000
1,8
5
+250
7T7
HF (T)
S = 4,9
ρ = 0,9 MΩ
V = −1
+150
25.000
0,3
10,8
4,1
6,3
65
+250
7V7
HF (T)
S = 5,8
ρ = 0,3 MΩ
V = −2
+150
25.000
0,45
10
3,9
6,3
160
+300
7W7 (7V7)
HF (T)
S = 5,8
ρ = 0,3 MΩ
V = −2
+150
25.000
0,45
10
3,9
6,3
160
+300

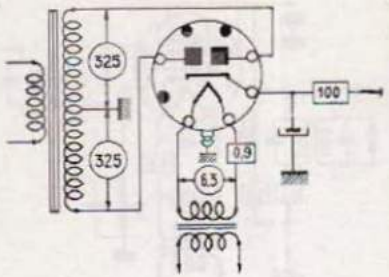
7X7 (L)

D + BF



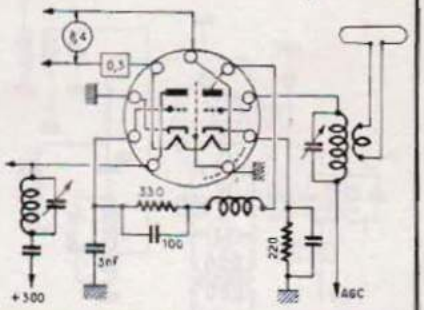
7Z4 (L)

R



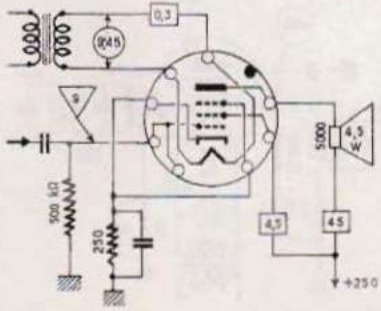
8BQ7A (N)

HF(V)(T)



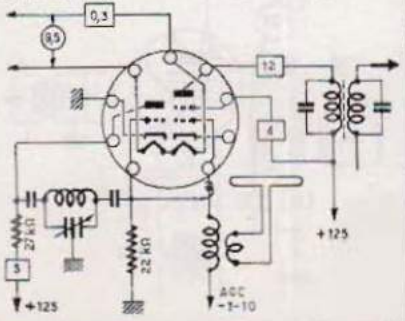
9BW6 (N)

P



9CL8 (N)

C (VHF)(V)

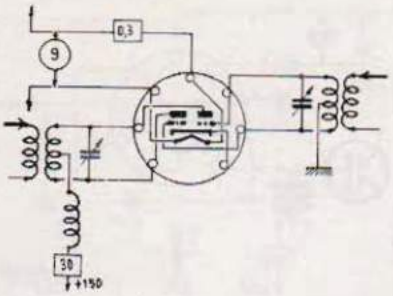


8A8 } = PCF80
9A8 }

9AB4 = UC92
9AK8 = PABC80
9AQ8 = PCC85
9BM5 = 9P9
9U8 = PCF82

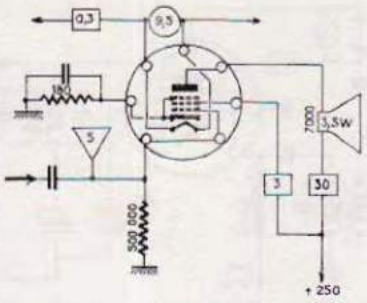
9J6 (M)
HF (T)

S = 5,3
ρ = 7,300
V = -10



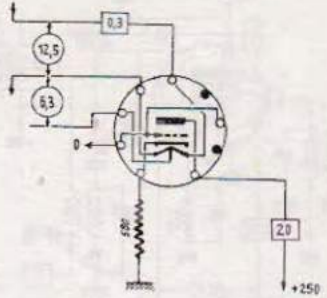
9P9/9BM5 (M)
P

S = 7
ρ = 60.000
V = -6



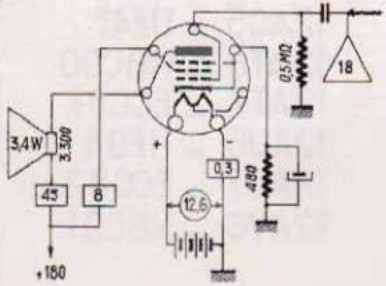
12A4 (N)
BF (T)

S = 7,8
ρ = 2.560
V = -6



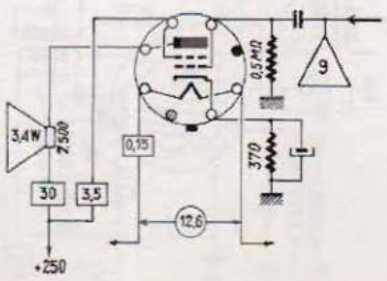
12A5 (US)
P

S = 2,4
ρ = 55.000
V = -25



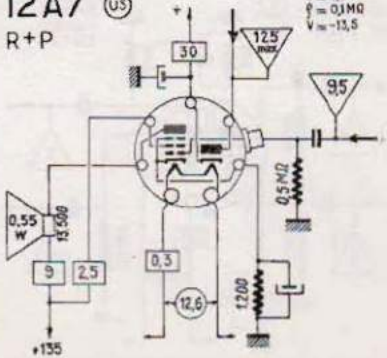
12A6 (O)
P

S = 3
ρ = 70.000
V = -12,5



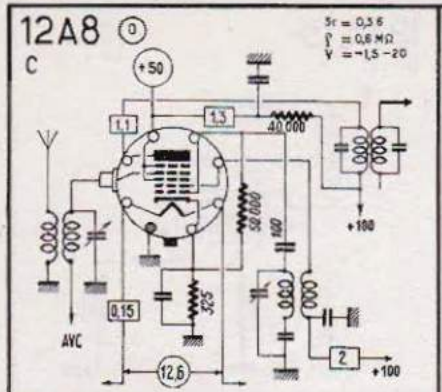
12A7 (US)
R+P

S = 0,9
ρ = 0,1 MΩ
V = -13,5



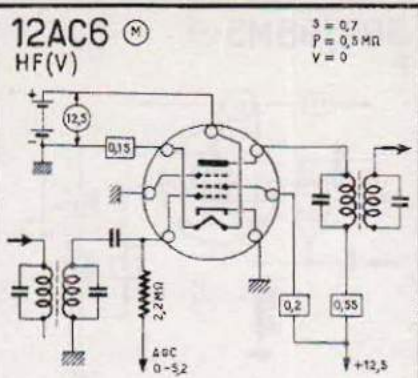
12A8 (O)

C



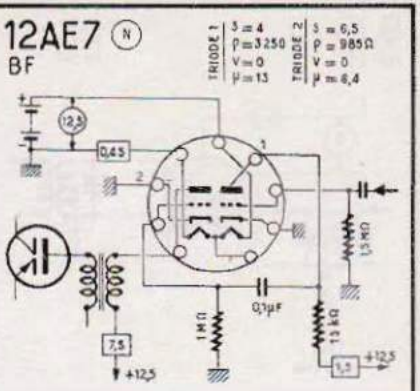
12AC6 (M)

HF(V)



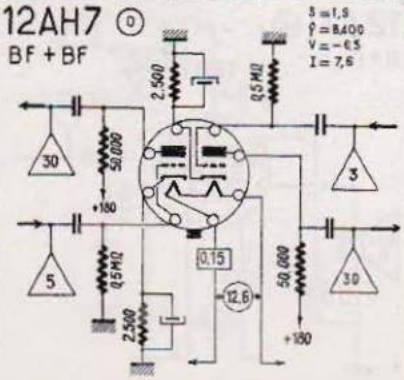
12AE7 (N)

BF



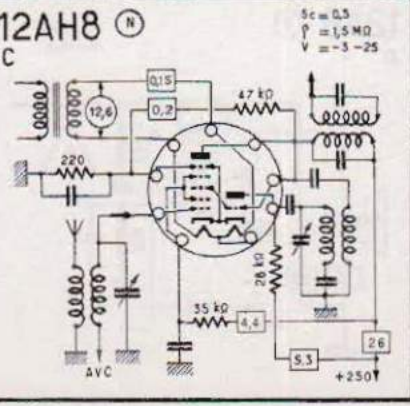
12AH7 (O)

BF + BF



12AH8 (N)

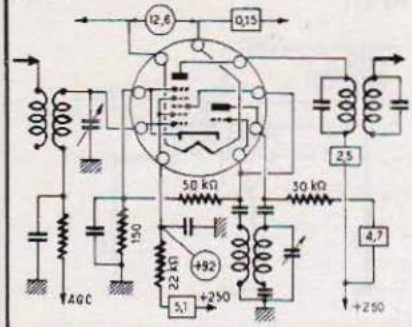
C



12AC5 = UF41
12AT6 = HBC90
12AT7 = ECC81
12AU6 = HF94
12AU7 = ECC82
12AV6 = HBC91

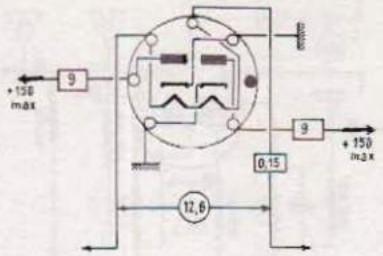
12AJ8 (N)

C (V)



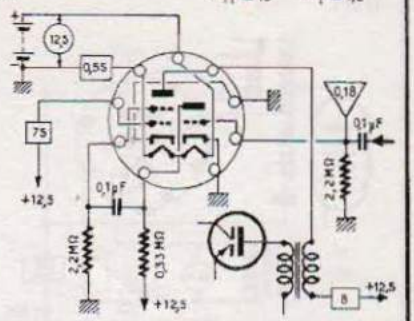
12AL5 (6AL5) (M)

D



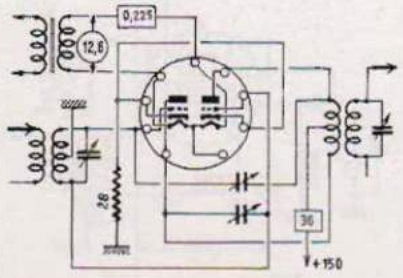
12AL8 (N)

BF



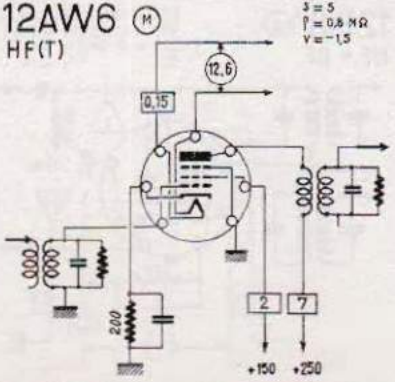
12AV7 (N)

HF (T)



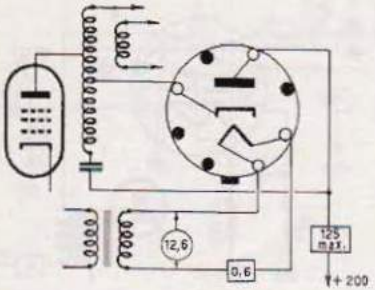
12AW6 (M)

HF(T)



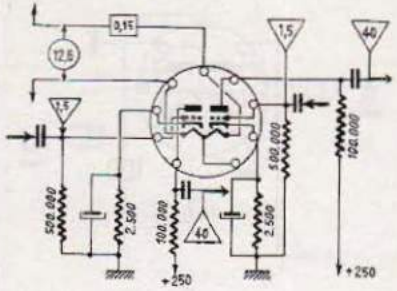
12AJ7 = HCH81
12AQ5 = 6AQ5 (12V)
12AY6 = 12AT6
12AX7 = ECC83
12BA6 = HF93
12BE6 = HK90
12D8 = HCH81
12S7 = UAF42

12AX4 ⓓ
D (T)



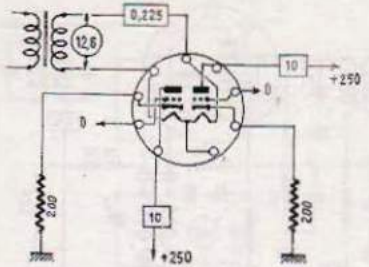
12AY7 Ⓝ
BF

S = 1,75
ρ = 43000
V = -4



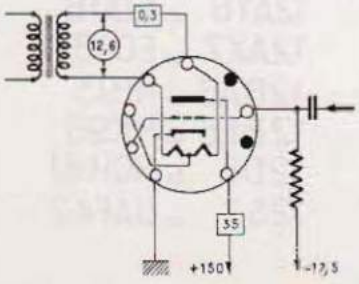
12AZ7 Ⓝ
HF (T)

S = 5,5
ρ = 10.900
V = -2



12B4 Ⓝ
BF (T)

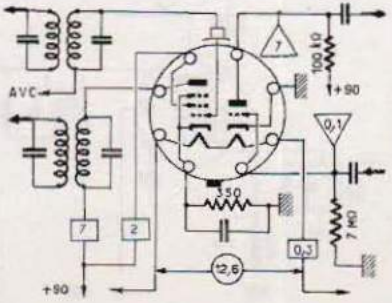
S = 6,5
Va = -17,5 kΩ
μ = 6,5



12B8 ⓓ
HF + BF

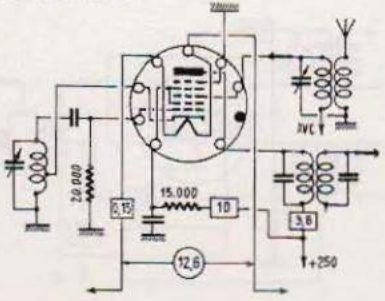
PENTHODE
S = 1,8
ρ = 200 kΩ
V = -3 -35

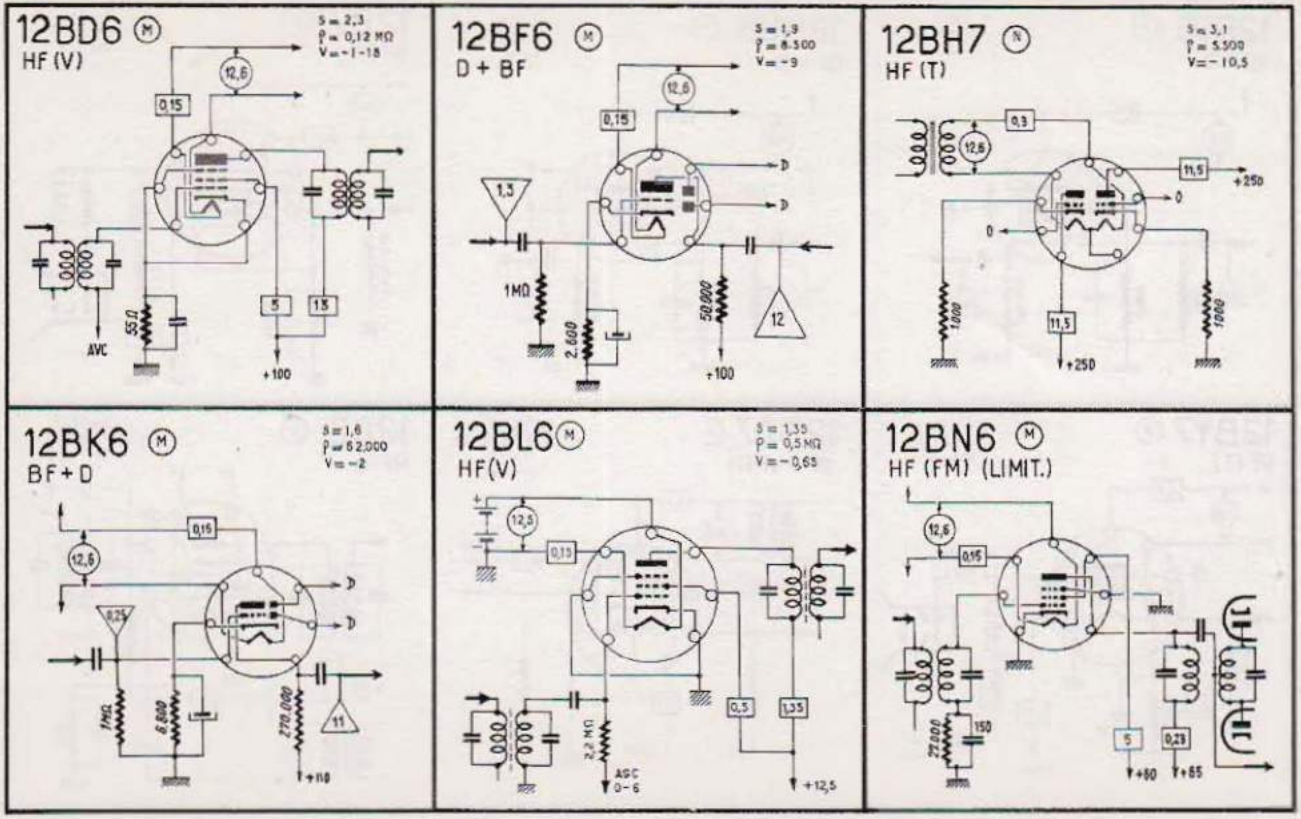
TRIODE
S = 2,4
ρ = 37 kΩ
V = 0
μ = 90



12BA7 Ⓝ
C (V) 100 MHz

Sc = 0,95
ρ = 1 MΩ
V = 0-20

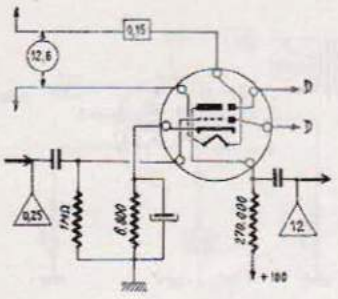



12BD6 (M)
HF (V)
S = 2,3
ρ = 0,12 MΩ
V = -1-18
12,6
0,15
55Ω
AVC
5
15
+100
12BF6 (M)
D + BF
S = 1,9
ρ = 8.500
V = -9
12,6
0,15
1,3
1 MΩ
2.600
50000
12
+100
12BH7 (N)
HF (T)
S = 3,1
ρ = 5.500
V = -10,5
0,3
12,6
11,5
+250
0
0
1000
11,5
+250
1000
12BK6 (M)
BF + D
S = 1,6
ρ = 62.000
V = -2
0,15
12,6
0,25
1MΩ
6.800
270.000
11
+110
12BL6 (M)
HF (V)
S = 1,35
ρ = 0,5 MΩ
V = -0,65
12,5
0,13
2,2 MΩ
AGC
0-6
0,5
1,35
+12,5
12BN6 (M)
HF (FM) (LIMIT.)
12,6
0,15
27000
150
5
0,23
+80
+85

12BT6 (M)

BF + D

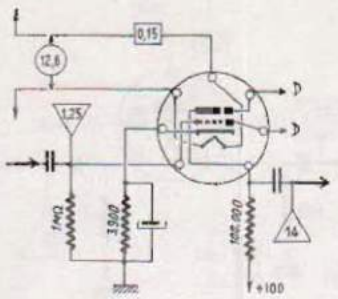
S = 1,3
ρ = 34.000
V_m = -1



12BU6 (M)

BF + D

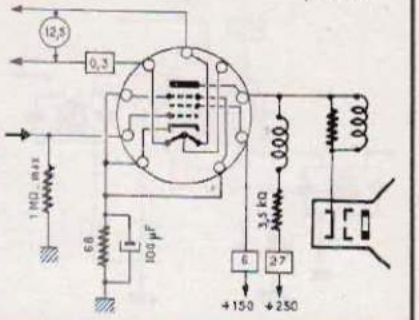
S = 1,9
ρ = 8.500
V_m = -9



12BV7 (N)

VF (T)

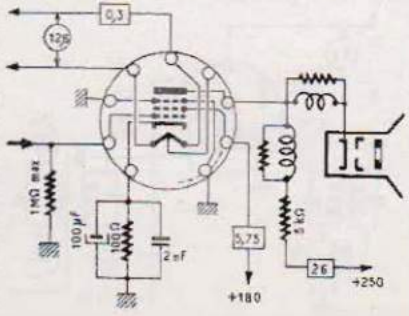
S = 1,1
ρ = 85.000
V = -2,2
μ = 1.000



12BY7 (N)

VF (T)

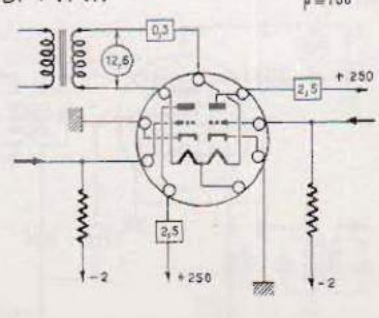
S = 11
ρ = 93 kΩ
V = -3



12BZ7 (N)

BF + VF (T)

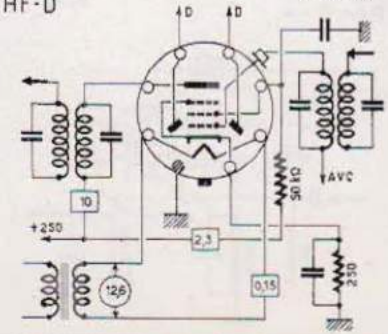
S = 3,2
ρ = 31,8 kΩ
V = -2
μ = 100

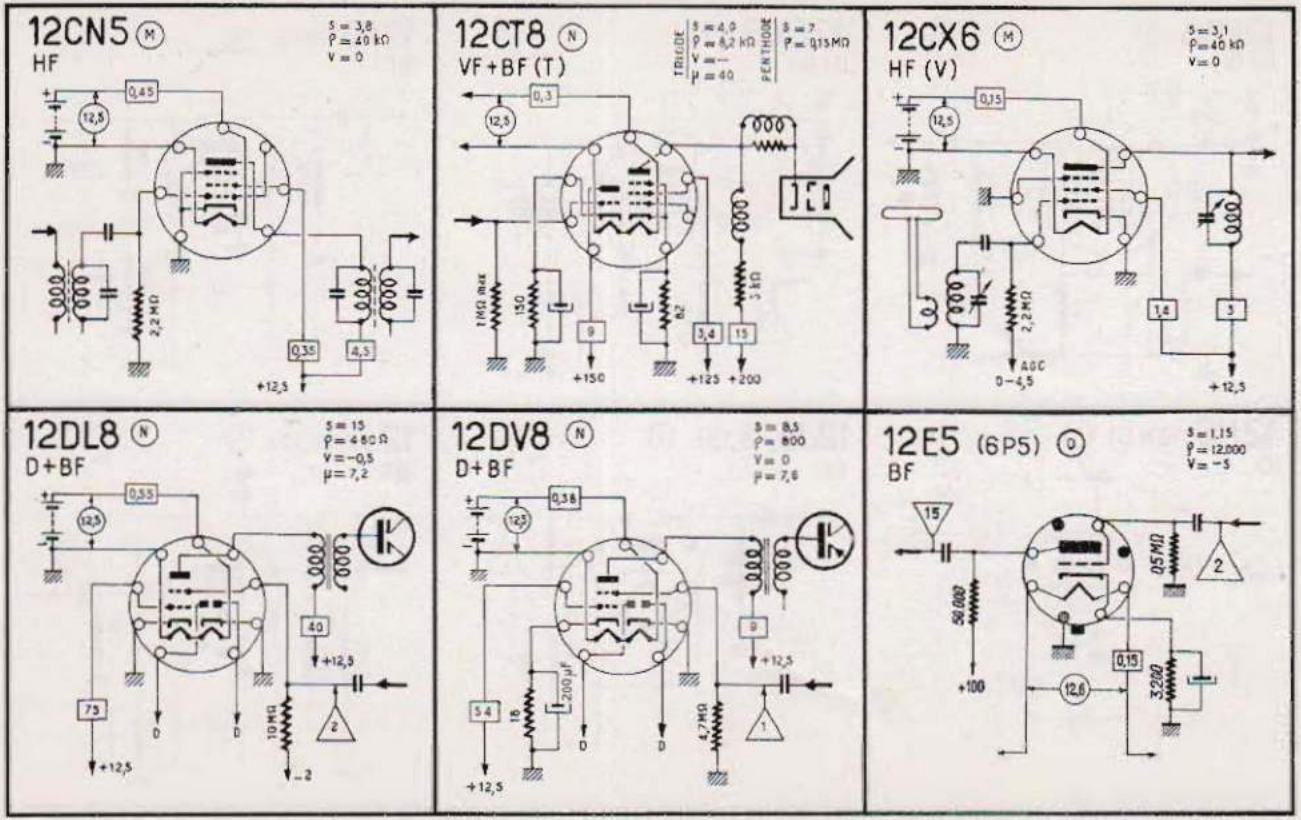


12C8 (O)

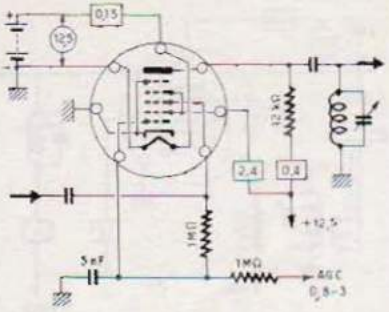
HF-D

S = 1,325
ρ = 600 kΩ
V = -3 -20

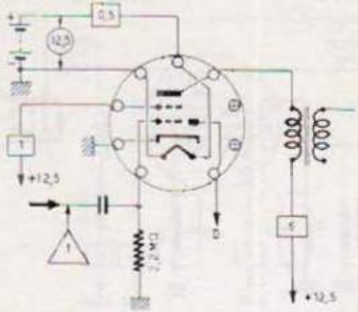



12CN5 (M)
HF
S = 3,8
ρ = 40 kΩ
V = 0
0,45
12,5
2,2 MΩ
0,35
4,5
+12,5
12CT8 (N)
VF+BF (T)
TRIODE
S = 4,9
ρ = 8,2 kΩ
V = −1
μ = 40
PENTHODE
S = 7
ρ = 0,15 MΩ
0,3
12,5
1 MΩ max
150
9
+150
6,2
3,4
+125
15
+200
3 kΩ
12CX6 (M)
HF (V)
S = 3,1
ρ = 40 kΩ
V = 0
0,15
12,5
2,2 MΩ
AGC
0−4,5
1,4
3
+12,5
12DL8 (N)
D+BF
S = 15
ρ = 450 Ω
V = −0,5
μ = 7,2
0,55
12,5
40
+12,5
73
D
D
10 MΩ
2
+12,5
−2
12DV8 (N)
D+BF
S = 8,5
ρ = 800
V = 0
μ = 7,6
0,38
12,5
9
+12,5
54
200 μF
16
D
D
4,7 MΩ
1
+12,5
12E5 (6P5) (O)
BF
S = 1,15
ρ = 12.000
V = −5
15
50.000
+100
0,5 MΩ
2
0,15
12,6
3.200

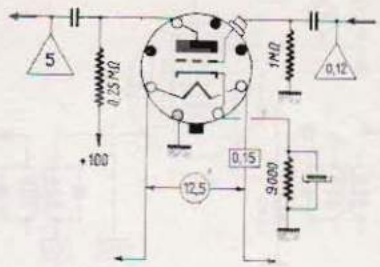
12EG6 (M)
HF (V)



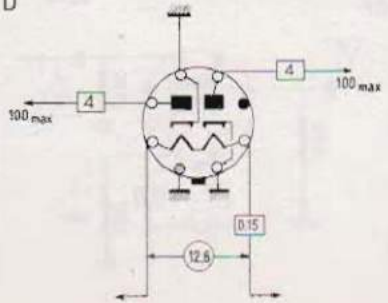
12EM6 (N)
D+BF



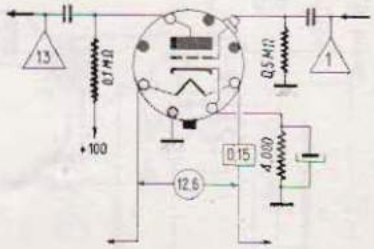
12F5 (6F5) (O)
BF



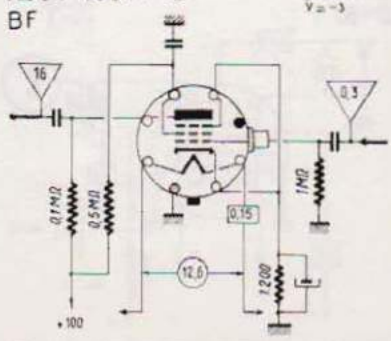
12H6 (6H6) (O)
D



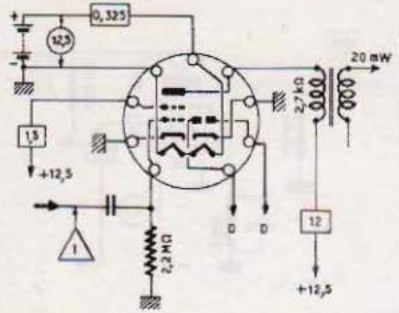
12J5 (6J5) (C)
BF



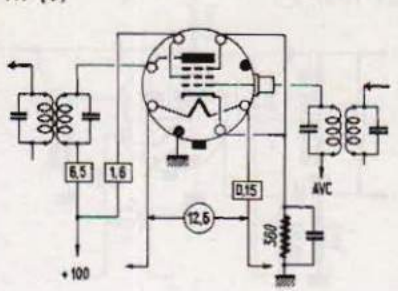
12J7 (6J7) (C)
BF



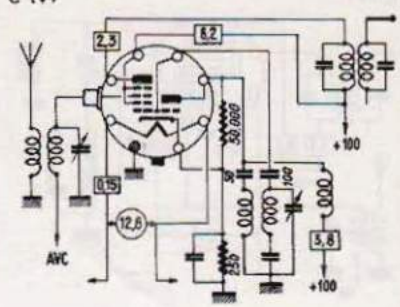
12J8 (N)
D+BF



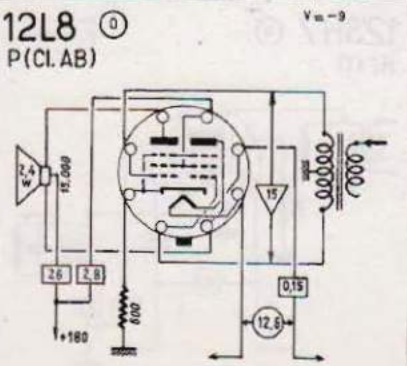
12K7 (6K7) (O)
HF (V)



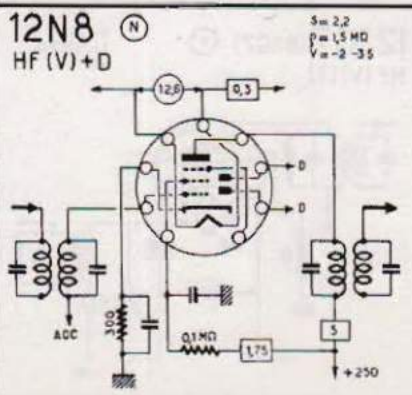
12K8 (6K8) (O)
C (V)



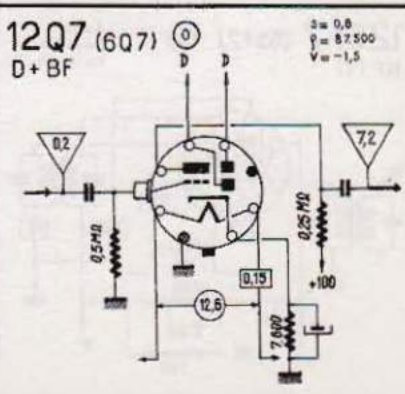
12L8 (O)
P (Cl. AB)



12N8 (N)
HF (V) + D



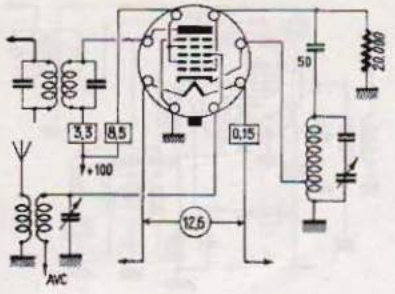
12Q7 (6Q7) (O)
D+BF



12SA7 (6SA7) ⓪

C (V)

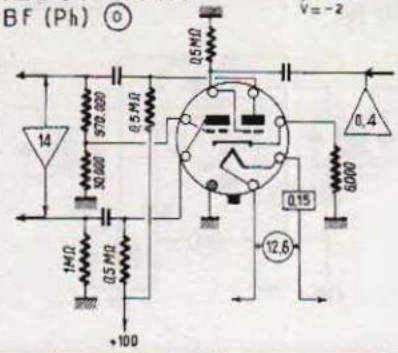
Sc = 0,425
ρ = 0,5 MΩ
V = 0,35



12SC7 (6SC7)

BF (Ph) ⓪

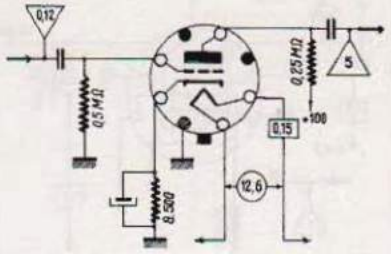
S = 1,32
ρ = 53.000
V = −2



12SF5 (6SF5) ⓪

BF

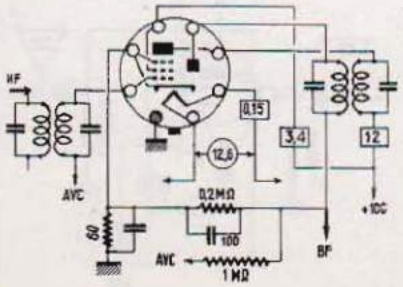
S = 1,5
ρ = 56.000
V = −2



12SF7 (6SF7) ⓪

HF (V)

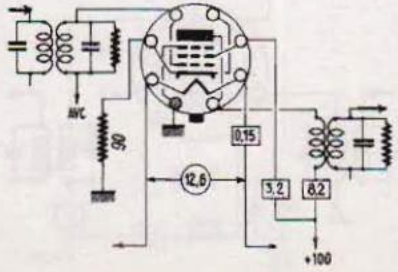
S = 1,9
ρ = 0,2 MΩ
V = −1 −35



12SG7 (6SG7) ⓪

HF (V) (T)

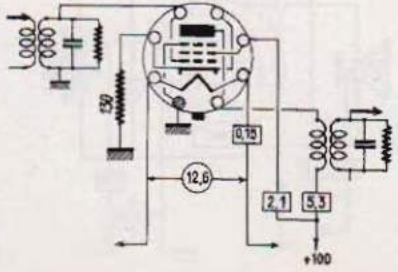
S = 4,1
ρ = 0,25 MΩ
V = −1

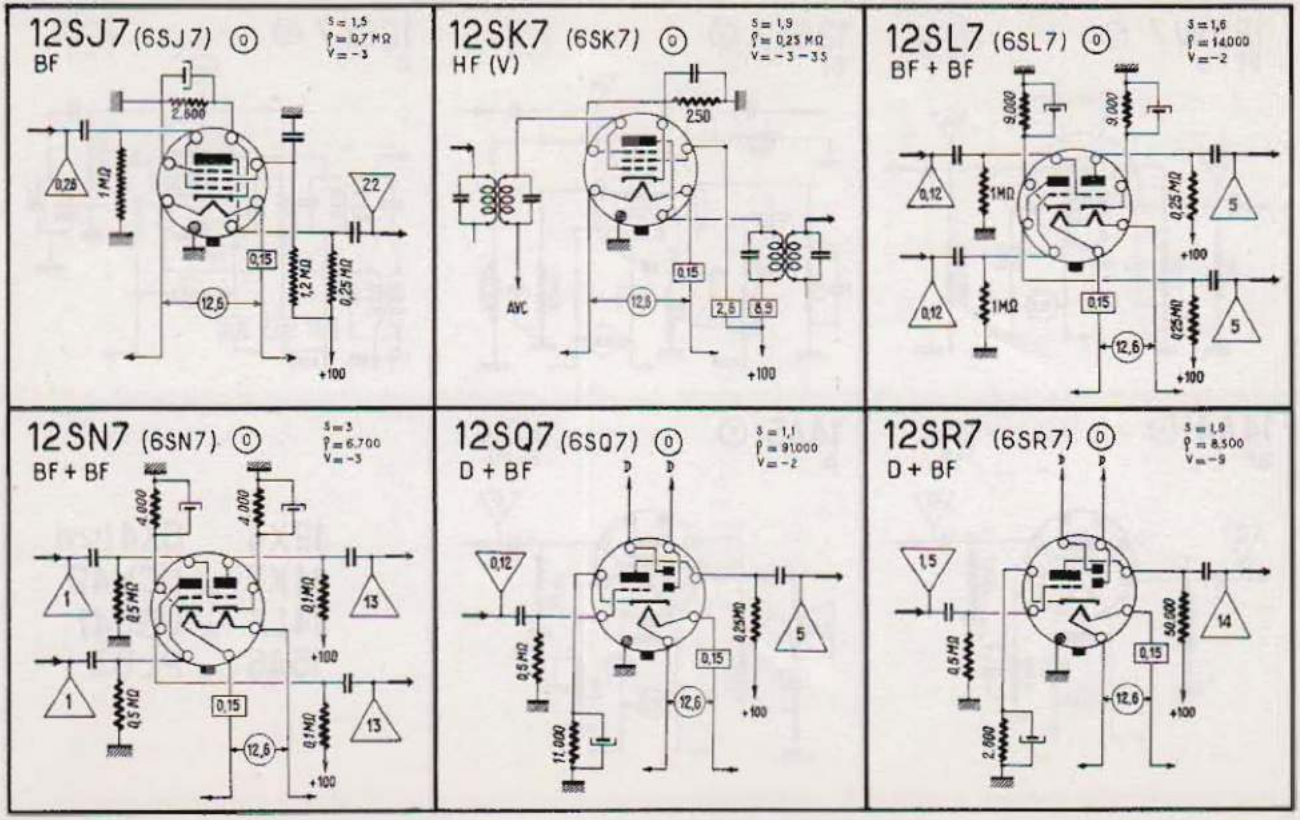


12SH7 ⓪

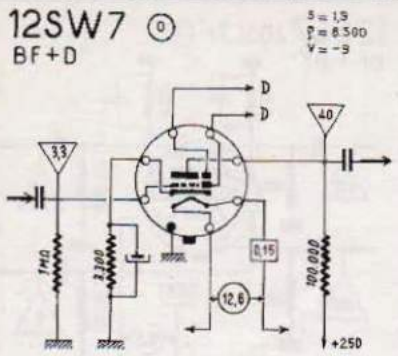
HF (T)

S = 4
ρ = 0,35 MΩ
V = −1

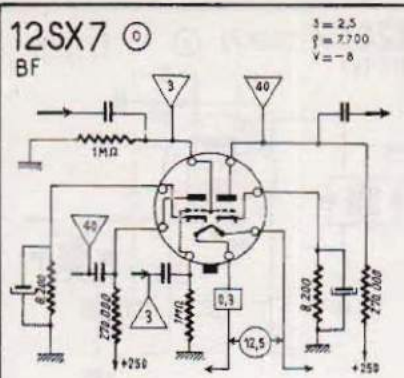



12SJ7 (6SJ7) ⓪
BF
S = 1,5
ρ = 0,7 MΩ
V = −3
2.500
0,25
1 MΩ
2,2
0,15
1,2 MΩ
0,25 MΩ
12,6
+100
12SK7 (6SK7) ⓪
HF (V)
S = 1,9
ρ = 0,25 MΩ
V = −3 −35
250
AVC
0,15
12,6
2,5
6,3
+100
12SL7 (6SL7) ⓪
BF + BF
S = 1,6
ρ = 14.000
V = −2
9.000
9.000
0,12
1 MΩ
0,25 MΩ
5
+100
0,12
1 MΩ
0,15
0,25 MΩ
5
12,6
+100
12SN7 (6SN7) ⓪
BF + BF
S = 3
ρ = 6.700
V = −3
4.000
4.000
1
0,5 MΩ
0,1 MΩ
13
+100
1
0,5 MΩ
0,15
0,1 MΩ
13
12,6
+100
12SQ7 (6SQ7) ⓪
D + BF
S = 1,1
ρ = 91.000
V = −2
D
D
0,12
0,5 MΩ
0,25 MΩ
5
0,15
12,6
11.000
+100
12SR7 (6SR7) ⓪
D + BF
S = 1,9
ρ = 8.500
V = −9
D
D
1,5
0,5 MΩ
50.000
14
0,15
12,6
2.000
+100

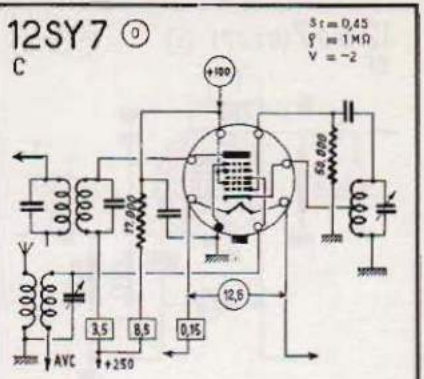
12SW7 ⓞ
BF+D



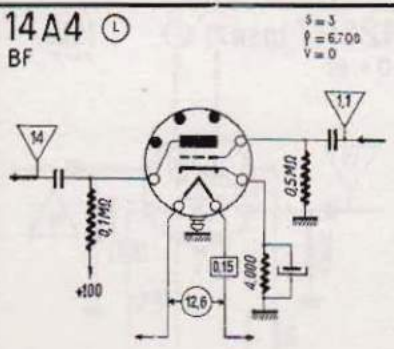
12SX7 ⓞ
BF



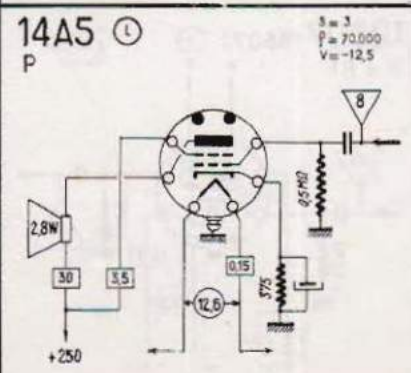
12SY7 ⓞ
C



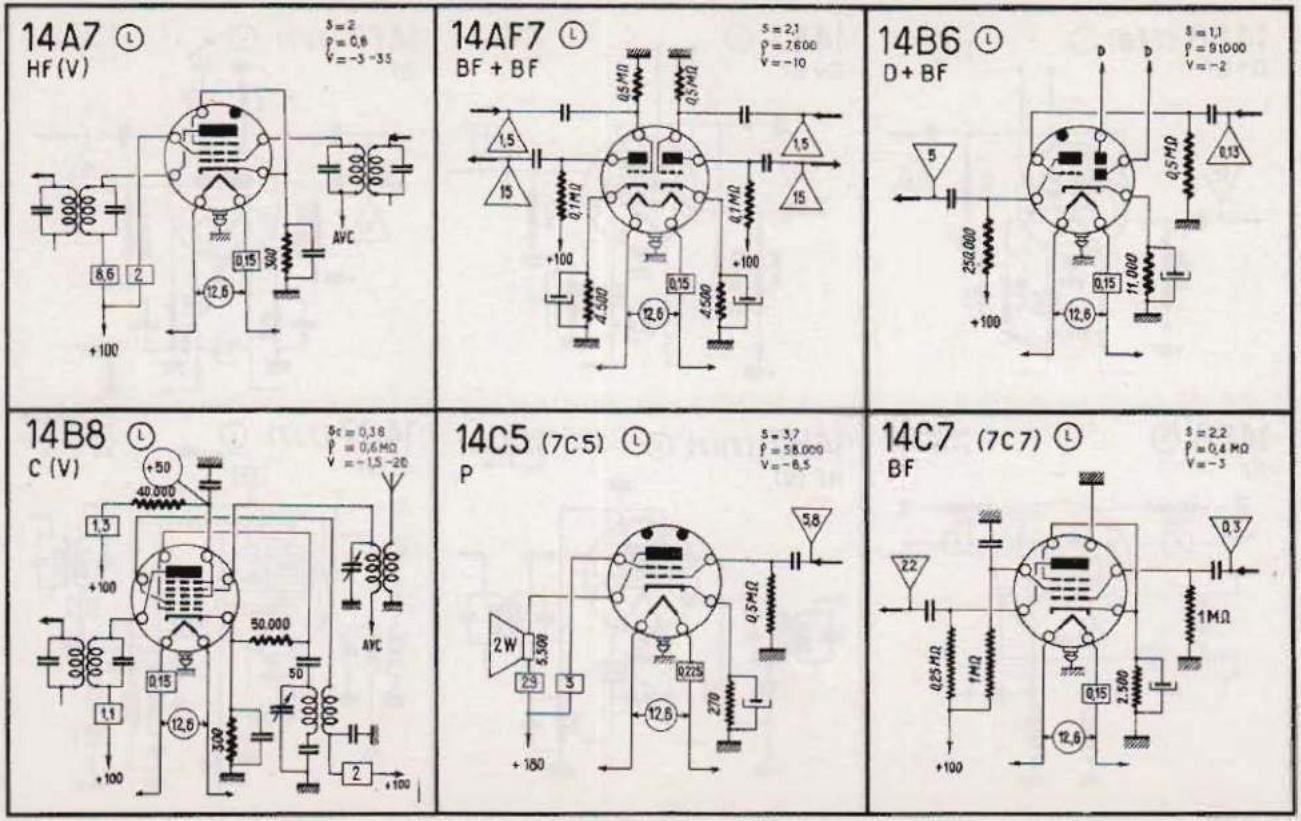
14A4 Ⓛ
BF



14A5 Ⓛ
P

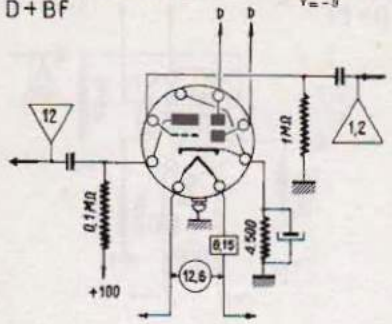


12X4 6X4 (12V)
14K7 = UCH42
14L7 = UBC41
15A6 = PL83


14A7 L
HF (V)
S = 2
ρ = 0,8
V = -3 -35
AVC
+100
14AF7 L
BF + BF
S = 2,1
ρ = 7.600
V = -10
0,5 MΩ
0,1 MΩ
4.500
+100
14B6 L
D + BF
S = 1,1
ρ = 91000
V = -2
250.000
11.000
0,5 MΩ
+100
14B8 L
C (V)
Sc = 0,36
ρ = 0,6 MΩ
V = -1,5 -20
+50
40.000
50.000
AVC
+100
14C5 (7C5) L
P
S = 3,7
ρ = 58.000
V = -8,5
0,5 MΩ
+180
14C7 (7C7) L
BF
S = 2,2
ρ = 0,4 MΩ
V = -3
0,25 MΩ
1 MΩ
+100

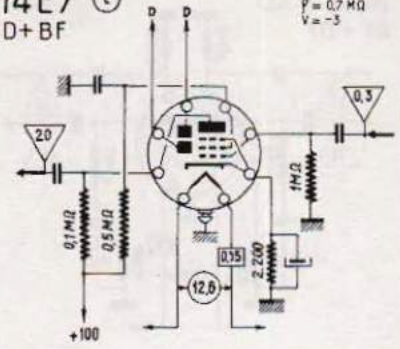
14E6 (7E6) L
D+BF

S = 1,9
ρ = 8.500
V = -9



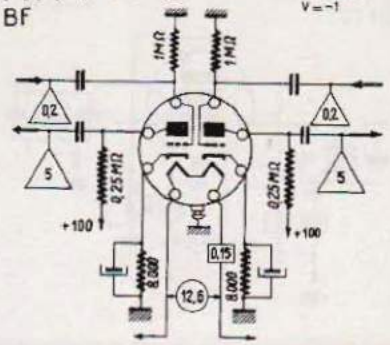
14E7 L
D+BF

S = 1,3
ρ = 0,7 MΩ
V = -3



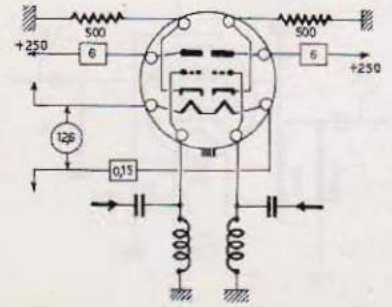
14F7 (7F7) L
BF

S = 1,125
ρ = 62.000
V = -1



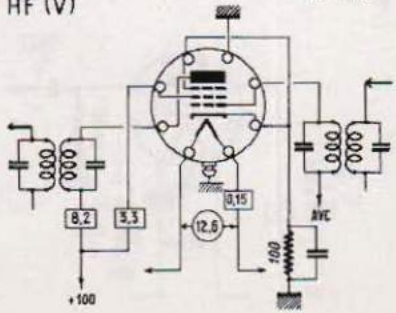
14F8 O
HF

S = 3,3
μ = 48



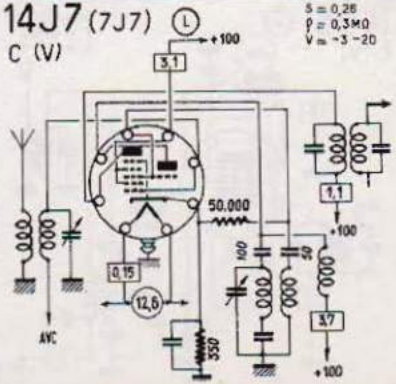
14H7 (7H7) L
HF (V)

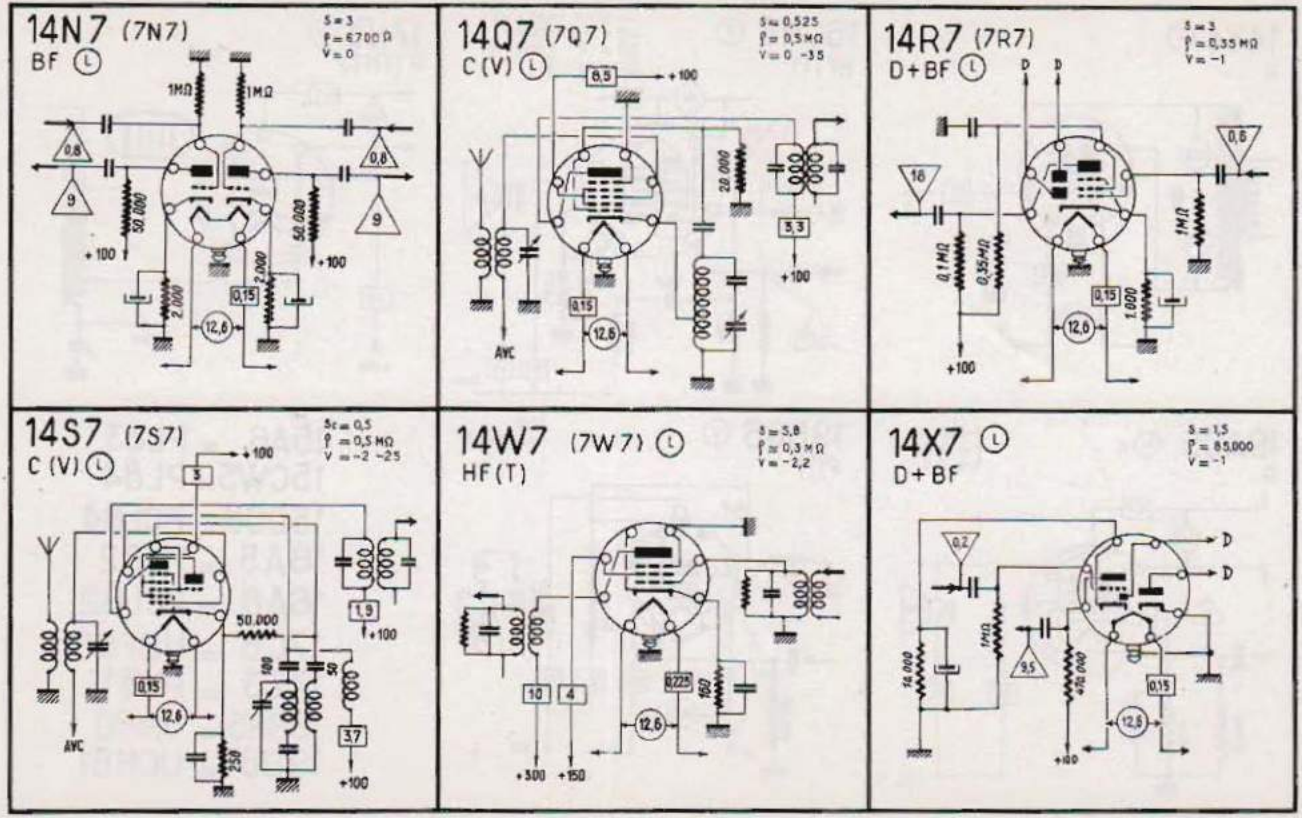
S = 3,8
ρ = 0,23 MΩ
V = -1 -12



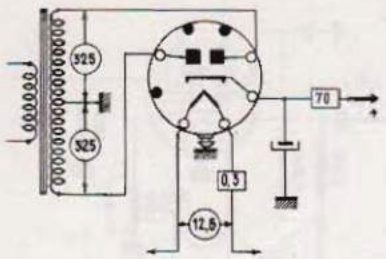
14J7 (7J7) L
C (V)

S = 0,26
ρ = 0,3 MΩ
V = -3 -20



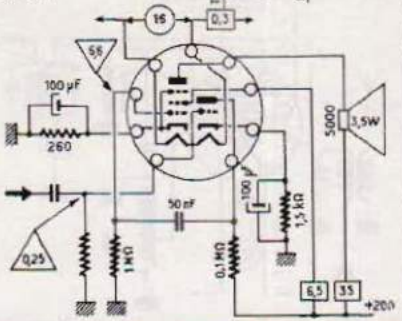

14N7 (7N7)
BF (L)
S = 3
ρ = 6700 Ω
V = 0
1MΩ
1MΩ
0,8
0,8
9
9
50.000
50.000
+100
+100
2.000
2.000
0,15
12,6
14Q7 (7Q7)
C (V) (L)
S = 0,525
ρ = 0,5 MΩ
V = 0 -35
6,5
+100
20.000
5,3
+100
0,15
12,6
AVC
14R7 (7R7)
D+BF (L)
S = 3
ρ = 0,35 MΩ
V = -1
D
D
0,8
18
0,1MΩ
0,35MΩ
1MΩ
0,15
1.000
12,6
+100
14S7 (7S7)
C (V) (L)
S = 0,5
ρ = 0,5 MΩ
V = -2 -25
+100
3
1,9
+100
50.000
0,15
12,6
AVC
100
50
250
3,7
+100
14W7 (7W7) (L)
HF (T)
S = 3,8
ρ = 0,3 MΩ
V = -2,2
10
4
0,225
150
12,6
+300
+150
14X7 (L)
D+BF
S = 1,5
ρ = 85.000
V = -1
0,2
D
D
1MΩ
16.000
9,5
50.000
0,15
12,6
+100

14Y4 Ⓛ
R

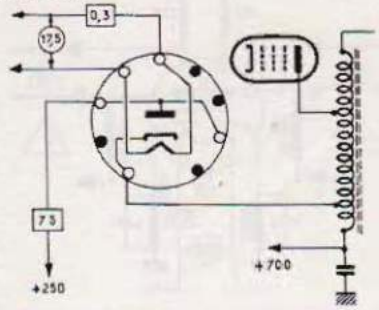


16CN8 Ⓝ
BF (T)

TRIODE S = 4,9 ρ = 12 kΩ V = −2 I = 60
PENTHODE S = 6,4 ρ = — V = −1,6

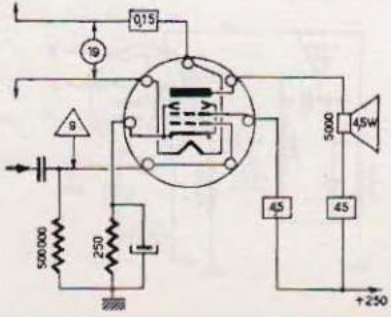


17H3 Ⓝ
R (THT)



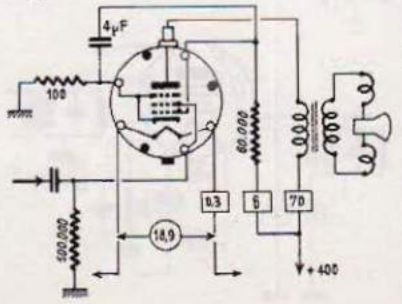
19AQ5 Ⓜ
P

S = 4,1
ρ = 52.000
V = −12,5



19BG6 Ⓞ
P(T)

S = 6
V = −50(max)

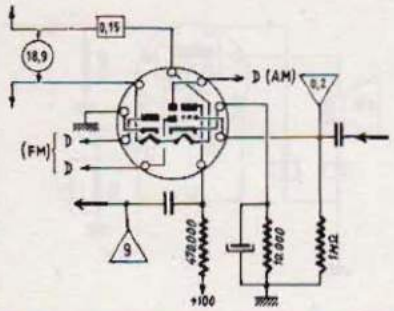


15A6 = PL83
15CW5 = PL84
15DQ8 = PCL84
16A5 = PL82
16A8 = PCL82
17C8 = UBF80
17Z3 = PY81
19BR5 = UM80
19D8 = UCH81

19C8 (AM/FM) (N)

D + BF

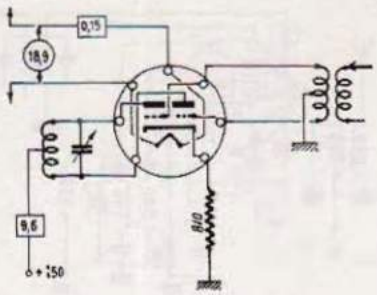
S = 1,25
P = 80.000
V = -1



19J6 (M)

HF (T)

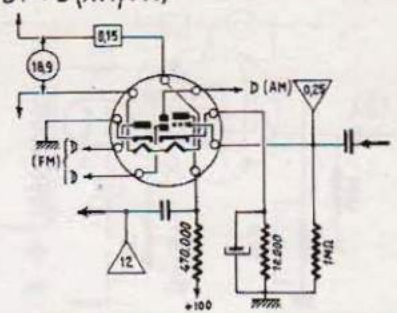
S = 1,9
P = 10.200
V = -8



19T8 (N)

BF + D (AM/FM)

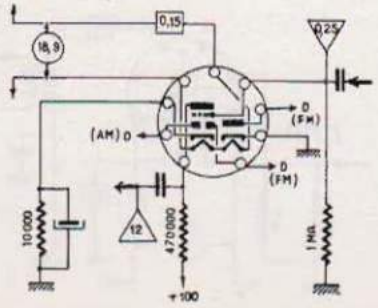
S = 1,3
P = 54.000
V = -1



19V8 (N)

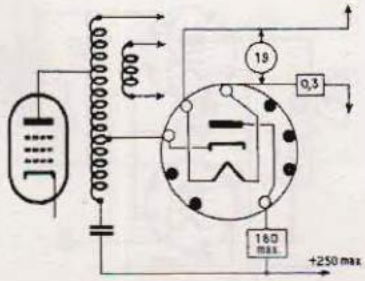
BF + D (AM/FM)

S = 1,3
P = 54.000
V = -1



19X3 / PY80 (N)

R (T)

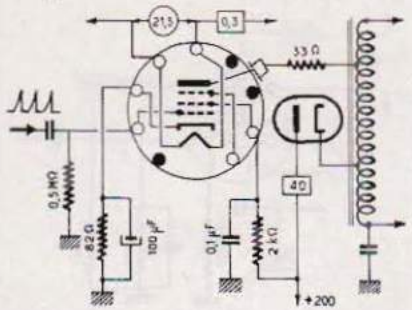


19D3 = UCH81
19Y3 = PY82
21A6 = PL81
25E5 = PL36
19W3 } = PY80
19U3 }

21B6 (N)

P (T)

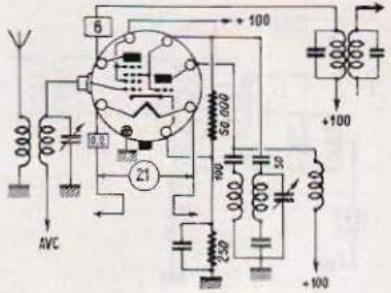
S = 6
ρ = 11 MΩ
V = −28



21TH8 (6TH8) (D)

C(V)

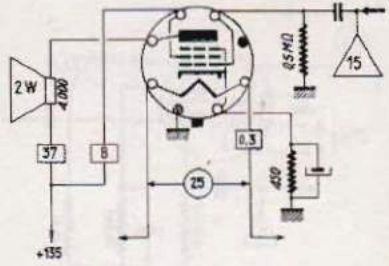
Sc = 0,27
ρ = 2 MΩ
V = −3 −28



25A6 (D)

P

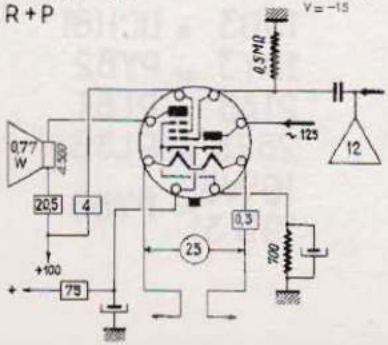
S = 2,4
ρ = 35 000
V = −20



25A7 (D)

R+P

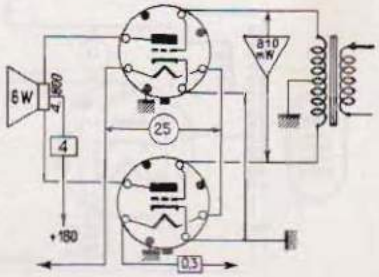
S = 1,8
ρ = 50 000
V = −1,5



25AC5 (D)

P(Cl. B)

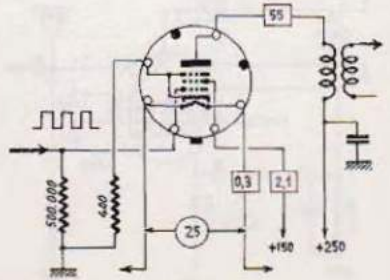
S = 3,8
ρ = 15 200 Ω



25AV5 (6AV5) (D)

P(T)

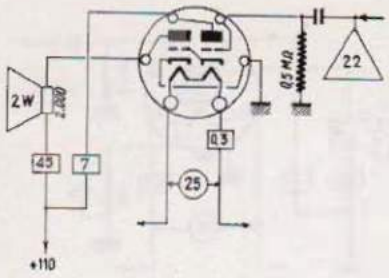
S = 5,8
V = −22,5



25B5 (US)

P

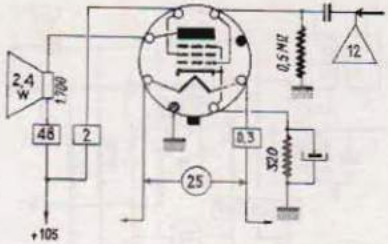
S = 2,2
ρ = 11.500
V = 0



25B6 (O)

P

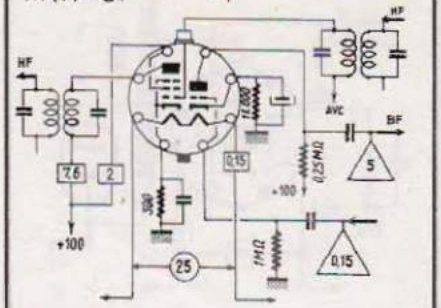
S = 4,8
ρ = 15.500
V = −16



25B8 (O)

HF(V) + BF

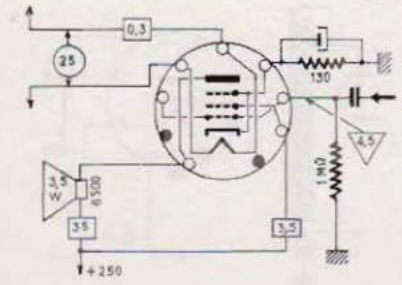
PENTHODE: S = ; ρ = 0,185 MΩ; V = −3 − 41
TRIODE: S = 1,5; ρ = 75.000 Ω; V = −1



25BK5 (N)

P

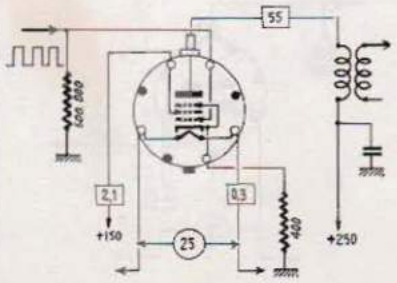
S = 8,5
ρ = 100 kΩ
V = −5



25BQ6 (6BQ6) (O)

P(T)

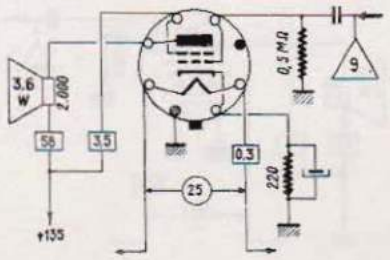
S = 5,5
V = −22,5



25C6 (O)

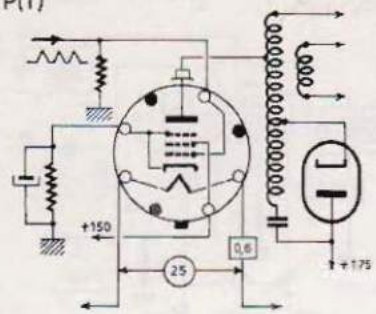
P

S = 7
ρ = 9.300
V = −13,5



25CD6 ⓪

P(T)

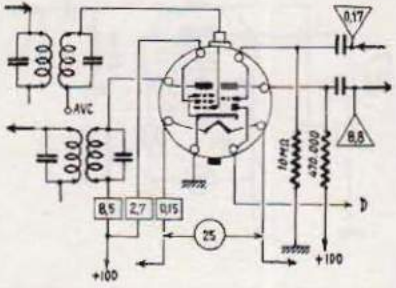


25D8 ⓪

HF + BF + D

PENTHODE S = 1,9 ρ = 200 kΩ V = -3

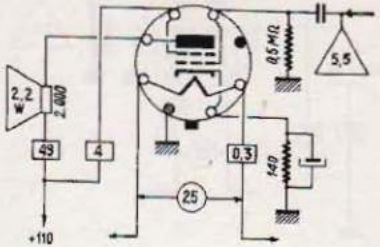
TRIODE S = 1,1 ρ = 91 kΩ V = -1



25L6 ⓪

P

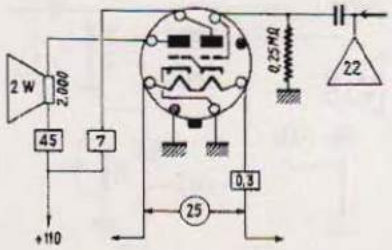
S = 8,2
ρ = 10000
V = -7,5



25N6 (25B5) ⓪

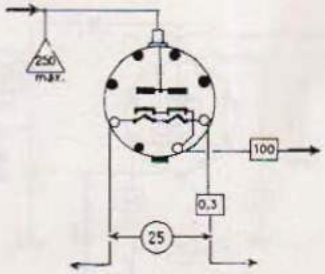
P

S = 2,2
ρ = 11500
V = 0



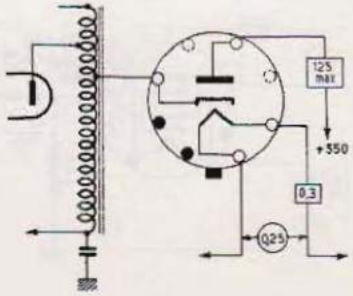
25T3G ⓪

R (T)

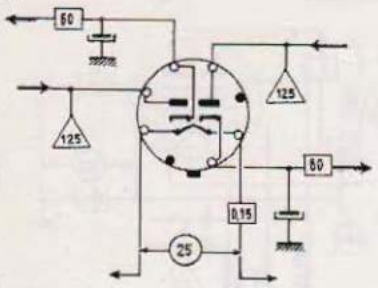


25W4 ⓪

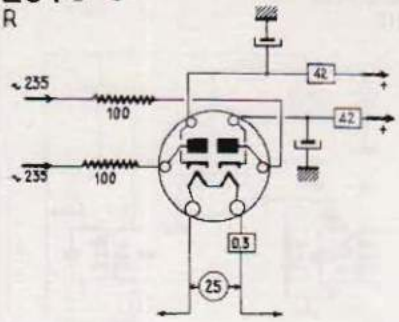
R (T)



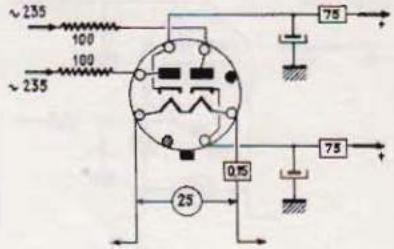
25X6 ⓪
R



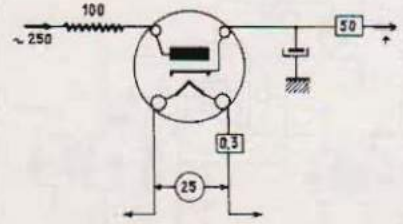
25Y5 (US)
R



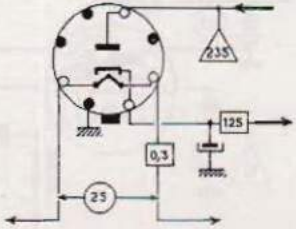
25Y6 ⓪
R



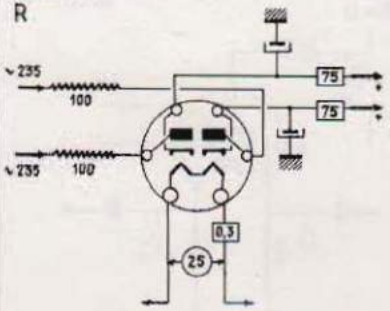
25Z3 (US)
R



25Z4 ⓪
R

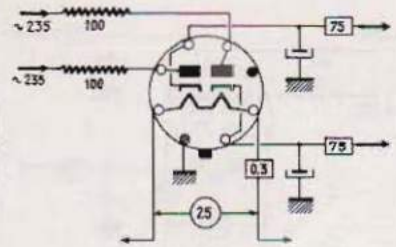


25Z5 (US)
R



25Z6 ⓓ

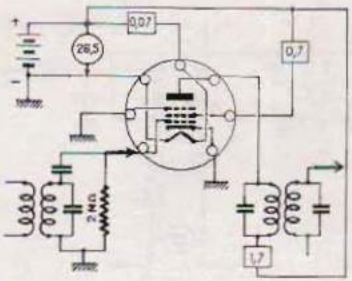
R



26A6 Ⓜ

HF

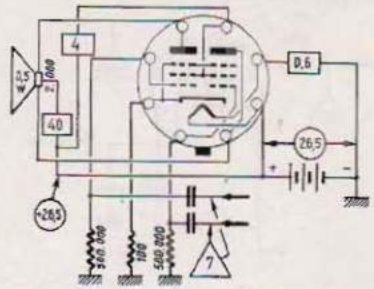
S = 4
ρ = 1 MΩ
V = −2



26A7 (28D7) ⓓ

P(Cl. A2)

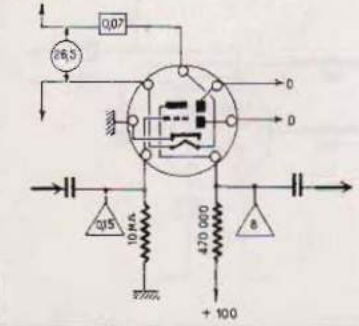
S = 5
V = −4,5



26BK6 Ⓜ

BF + D

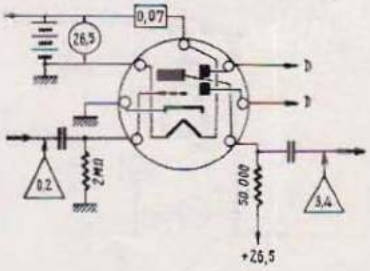
S = 1,25
ρ = 80.000
V = −1



26C6 Ⓜ

D + BF

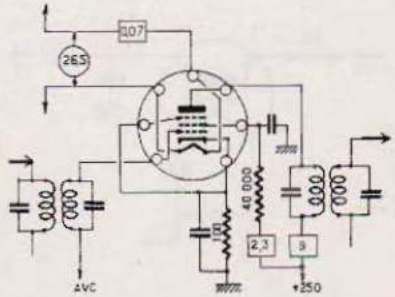
S = 11
ρ = 15.500
V = 0



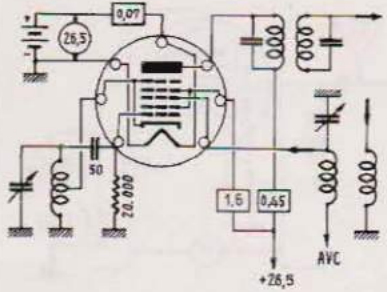
26CG6 Ⓜ

HF (V)

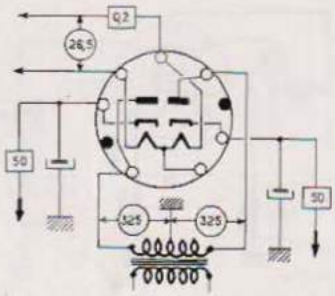
S = 2
ρ = 720.000
V = −1 −8



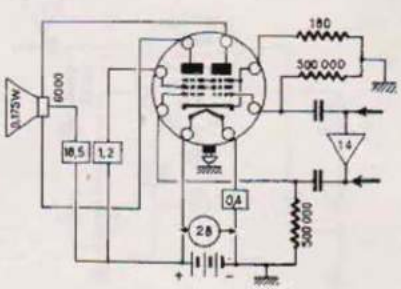
26D6 (M)
C (V)



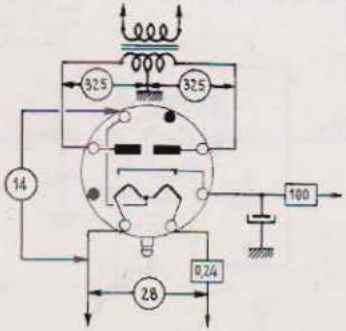
26Z5 (N)
R



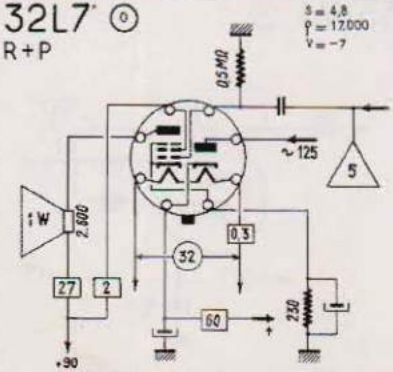
28D7 (L)
P (CLAB)



28Z5 (L)
R



32L7 (O)

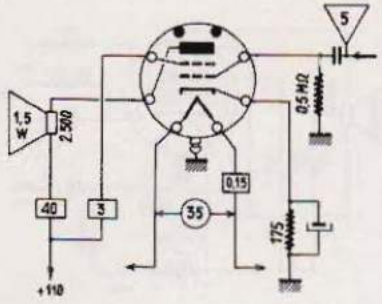


30A5 = HL94
30AE3 = PY88
31A3 = UY41
35W4 = HY90
38A3 = UY85
45A5 = UL41
45B5 = UL84
50C5 = HL92

35A5 (35L6) Ⓛ

P

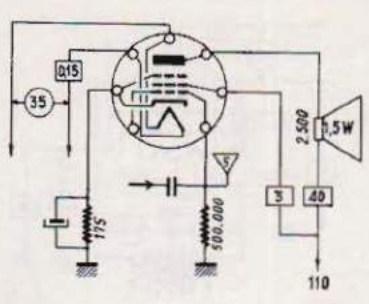
S = 5,8
P = 14.000
V = −7,5



35B5 Ⓜ

P

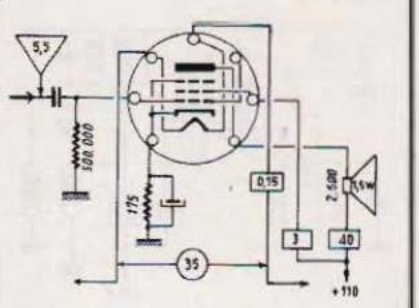
S = 5,8
P = 15.000
V = −7,5



35C5 Ⓜ

P

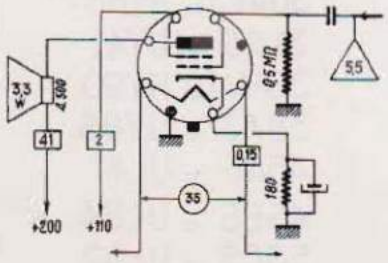
S = 5,8
P = 14.000
V = −7,5



35L6 (35A5) Ⓞ

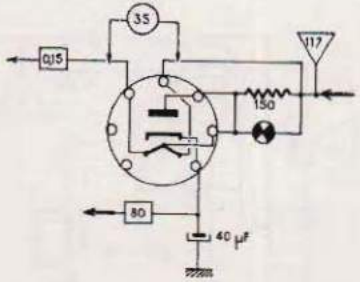
P

S = 5,8
P = 14.000
V = −7,5



35W4 Ⓜ

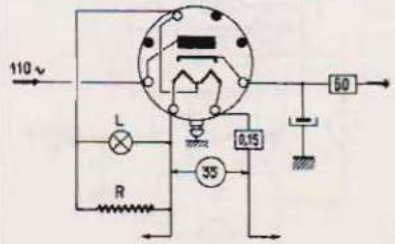
R



35Y4 (35Z5) Ⓛ

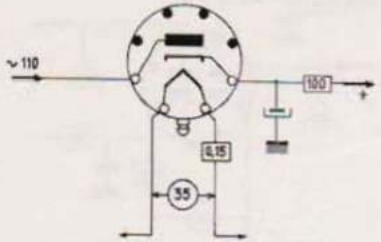
R

I = 60
R = 300 I = 70
R = 150 I = 80
R = 100 I = 90
L = 5,5V (0,1A)



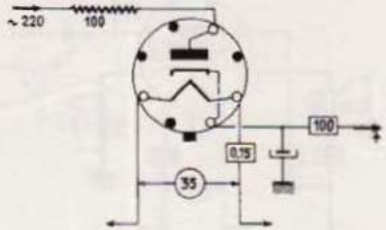
35Z3 (35Z4) Ⓛ

R



35Z4 (35Z3) Ⓞ

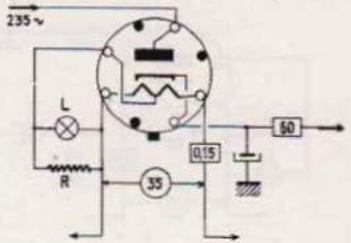
R



35Z5 (35Y4) Ⓞ

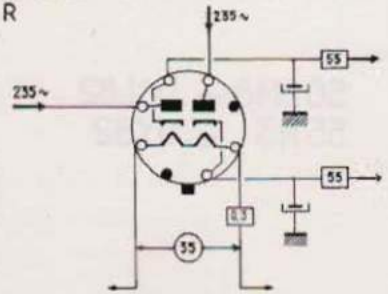
R

I = 60
R = 300 I = 70
R = 150 I = 80
R = 100 I = 90
L = 5,5V (0,1A)



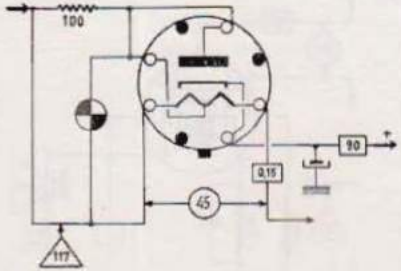
35Z6 Ⓞ

R



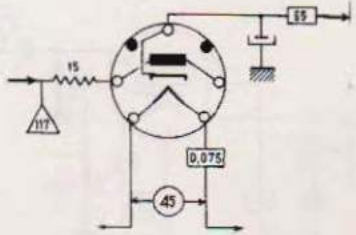
40Z5 Ⓞ

R



45Z3 Ⓜ

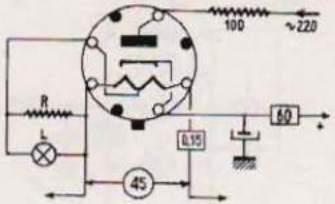
R



45Z5 (35Z5) ⓪

R

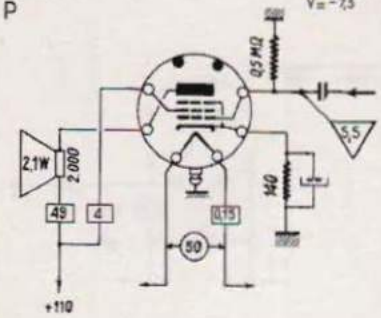
R = I = 60
R = 300 I = 70
R = 150 I = 80
R = 100 I = 90
L = 5,5V (0,1A)



50A5 ⓛ

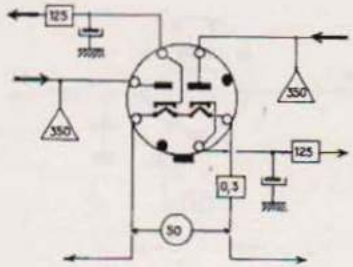
P

S = 8,2
f = 10.000
V = −7,5



50AX6 ⓪

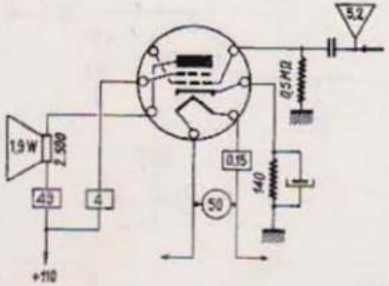
R



50B5 Ⓜ

P

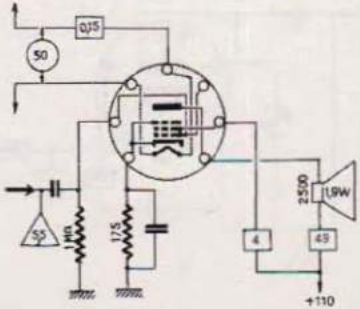
S = 7,5
f = 14000
V = −7,5



50C5 Ⓜ

P

S = 7,5
f = 10000
V = −7,5

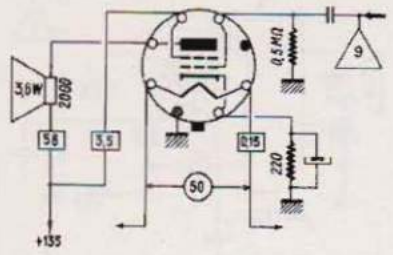


50BM8 = UCL82
55N3 = UY82

50C6 (6Y6) ⓞ

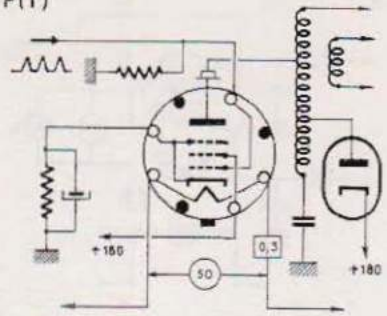
P

S = 7
ρ = 9,300
V = -13,5



50CD6 ⓞ

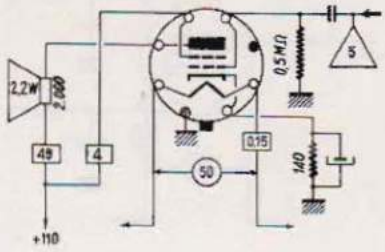
P(T)



50L6 (25L6) ⓞ

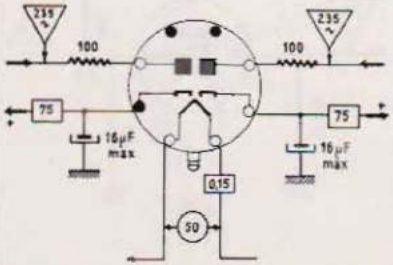
P

S = 6,2
ρ = 10,000
V = -7,5



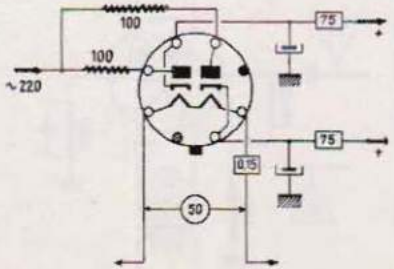
50X6 Ⓛ

R



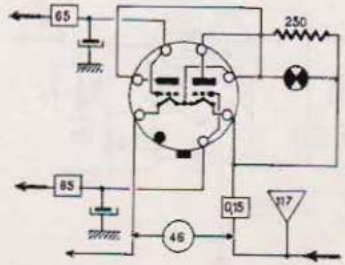
50Y6 (25Z6) ⓞ

R



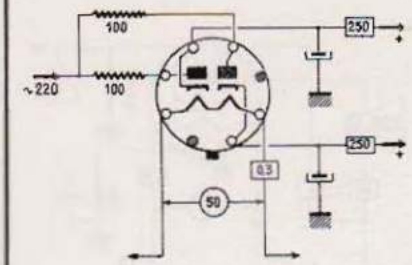
50Y7 ⓞ

P



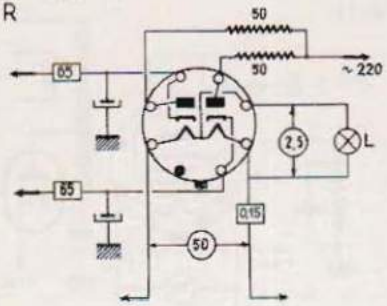
50Z6 ⓪

R



50Z7 ⓪

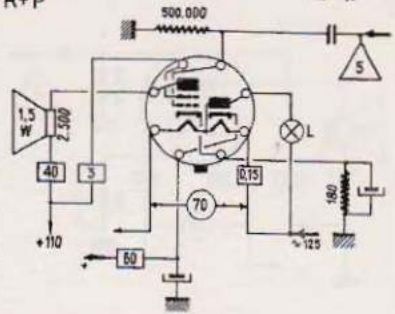
R



70A7 ⓪

R+P

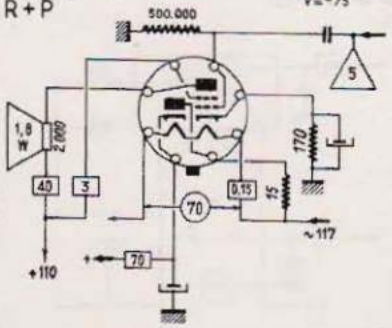
S = 5,8
ρ = 15.000
V = −7,5



70L7 ⓪

R+P

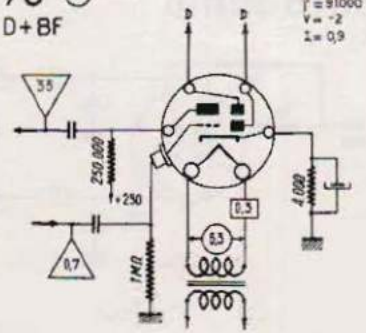
S = 7,5
ρ = 15.000
V = −7,5



75 (US)

D+BF

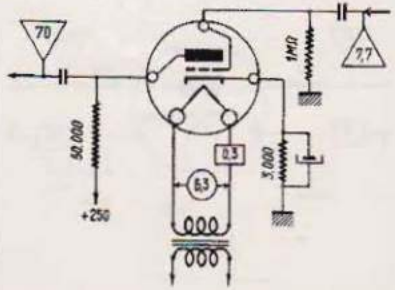
S = 1,1
ρ = 91000
V = −2
I = 0,9



76 (56) (US)

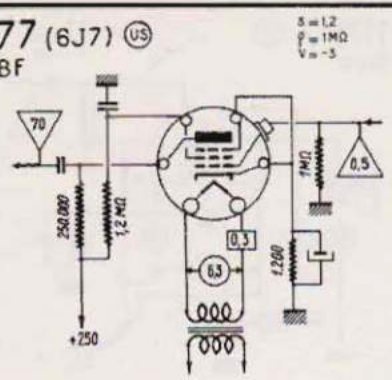
BF

S = 1,4
ρ = 9.500
V = −13,5
I = 1,3



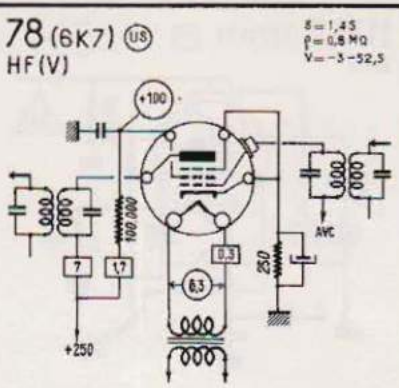
77 (6J7) US

BF



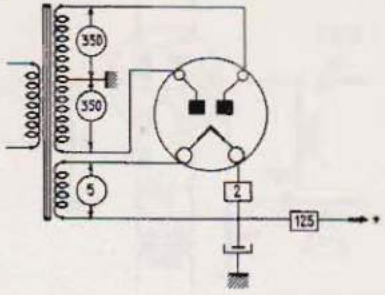
78 (6K7) US

HF (V)



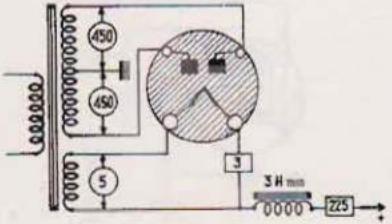
80 (5Y3) US

R



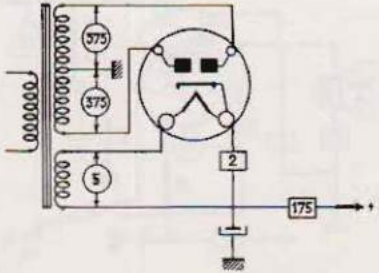
83 US

R



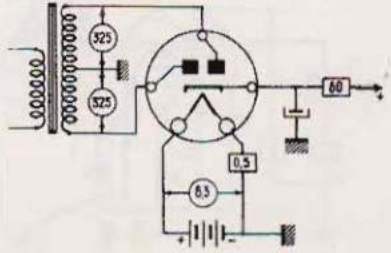
83 (5V4) US

R



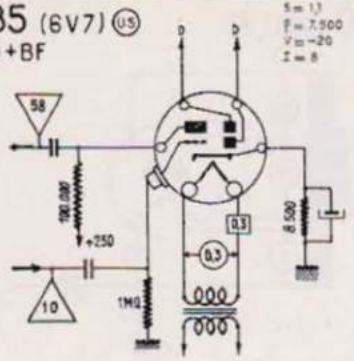
84 (6Z4) US

R



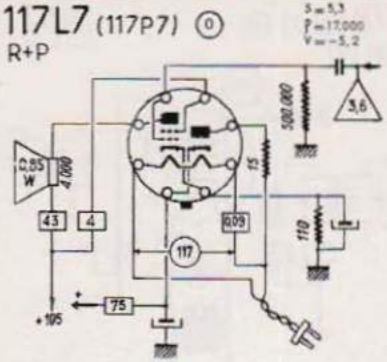
85 (6V7) (US)

D+BF



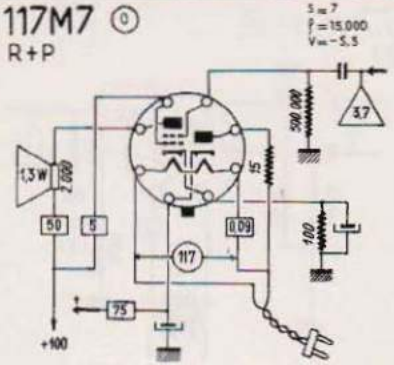
117L7 (117P7) (O)

R+P



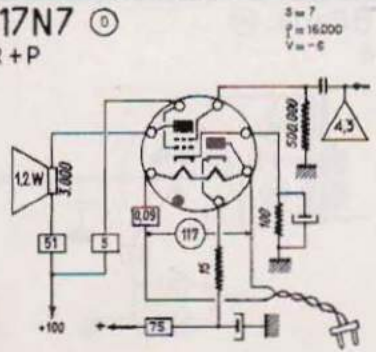
117M7 (O)

R+P



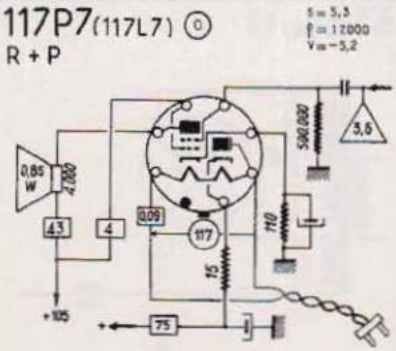
117N7 (O)

R+P



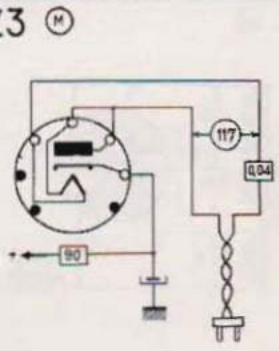
117P7 (117L7) (O)

R+P



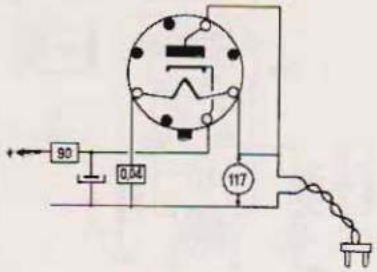
117Z3 (M)

R



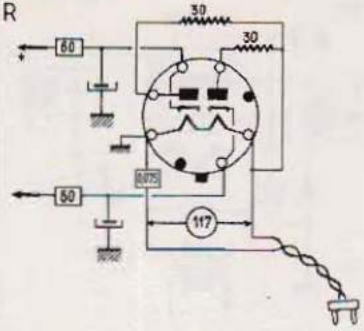
117Z4 ⓪

R



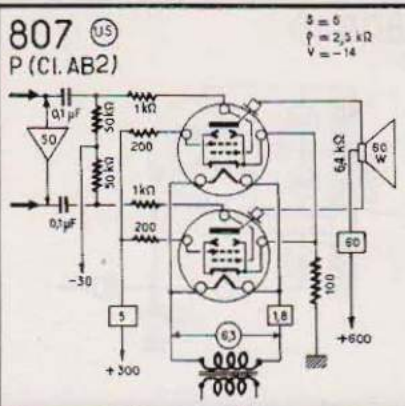
117Z6 ⓪

R



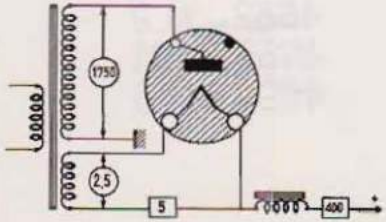
807 (US)

P (Cl. AB2)



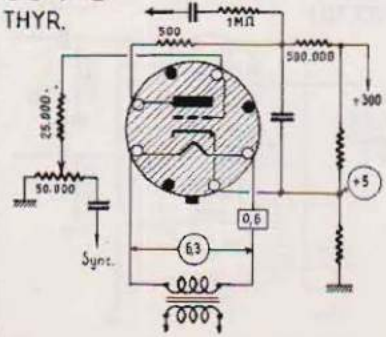
866 (US)

R



884 ⓪

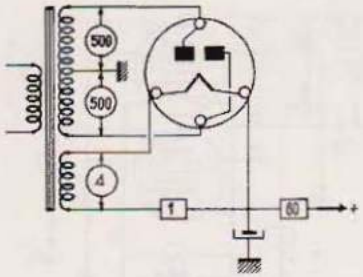
THYR.



1275 = 5Z3
1276 = 6A3
1291 = 3B7
1299 = 3D6
1612 = 6L7
1629 = 6E5

1805 (E)

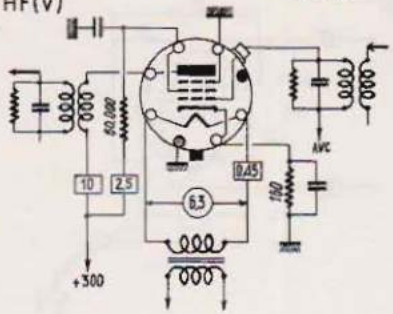
R



1851 (D)

HF(V)

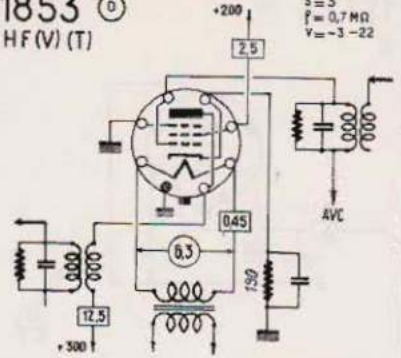
S = 9
P = 0,75 MΩ
V = −3 −22



1853 (D)

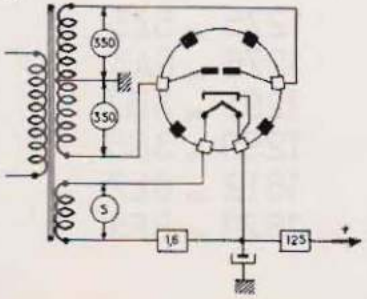
HF(V) (T)

S = 5
P = 0,7 MΩ
V = −3 −22



1883 (T)

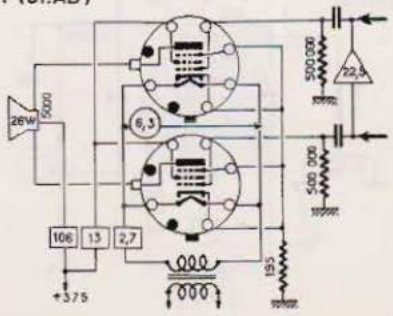
R



4654 K (D)

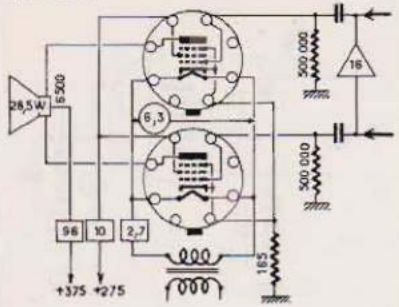
P(Cl.AB)

S = 8,5
P = 22.000
V = −14,5

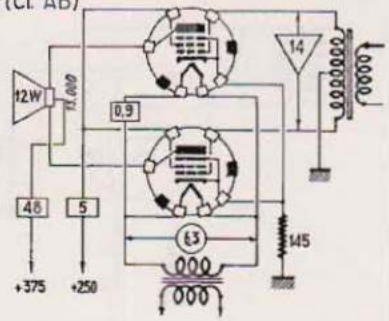


4682 = AL2
4683 = AD1
4699 = EL6

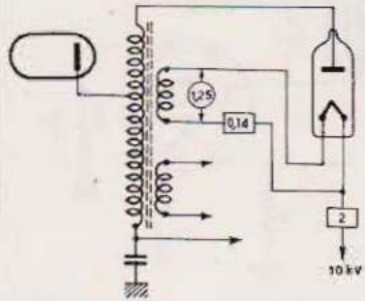
4689 K ⓞ
P(Cl. AB)



4694 ⓣ
P(Cl. AB)

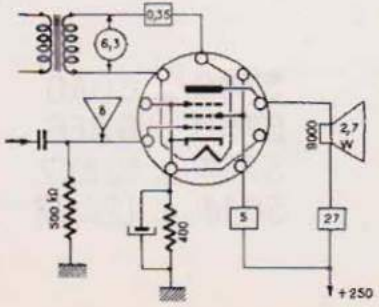


5642 ⓢⓦ
R(THT)(T)



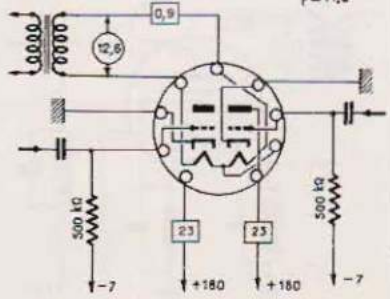
5686 Ⓝ
P

S = 3,1
V = -12,5



5687 Ⓝ
VF (T)

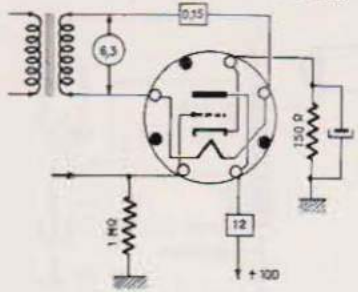
S = 6,4
ρ = 2,7 kΩ
V = -7
P = 17,5



5654 = 6AK5
5670 = 2C51
5725 = 6AS6
5726 = 6AL5
5727 = 2D21
5732 = 6K7

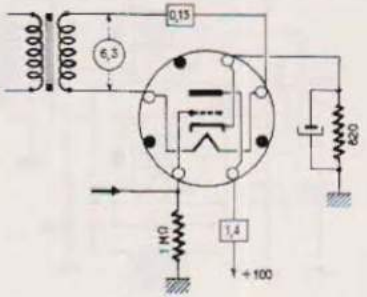
5718 (SM)
BF

S = 5,5
ρ = 3,65 Ω
V = −2
μ = 20



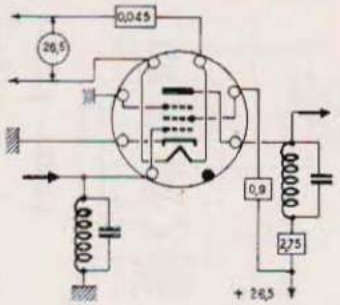
5719 (SM)
BF

S = 2,7
ρ = 26 kΩ
μ = 70



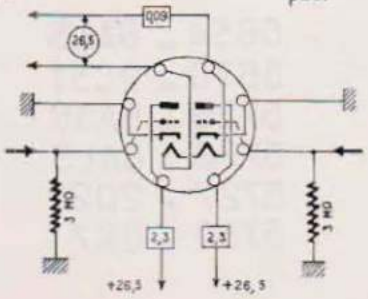
5797 (SM)
HF (T)

S = 3,45
ρ = 70 kΩ
V = 0



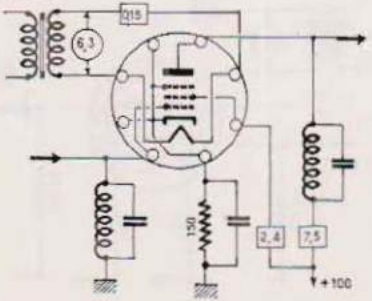
5798 (SM)
BF

S = 3,15
ρ = 6,7 kΩ
V = 0
μ = 21



5840 (SM)
HF (T)

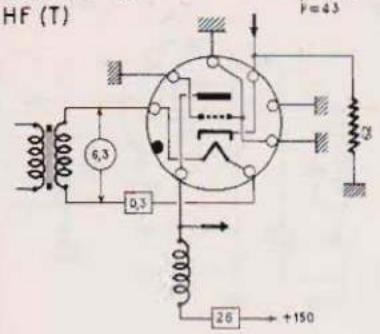
S = 5
ρ = 230 kΩ



5749 = 6BA6
5750 = 6BE6
5751 = 12AX7
5814 = 12AU7

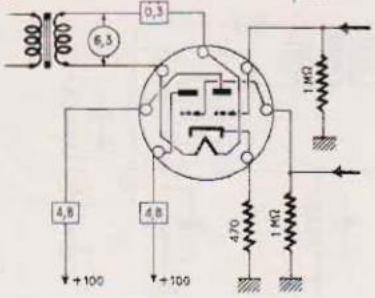
5842 (N)
HF (T)

S = 24
ρ = 1,8 kΩ
V = 43



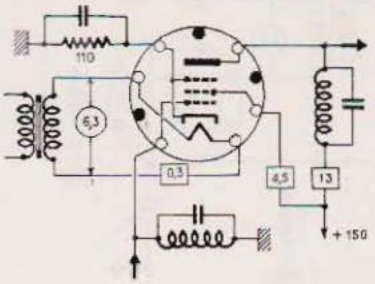
5844 (M)
BF

S = 3,4
ρ = 7950
V = −4,5
μ = 27



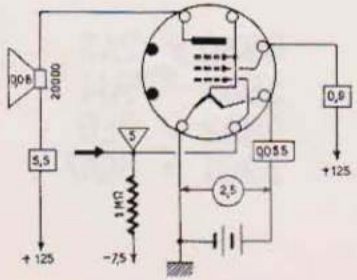
5847 (N)
HF (T)

S = 12,5



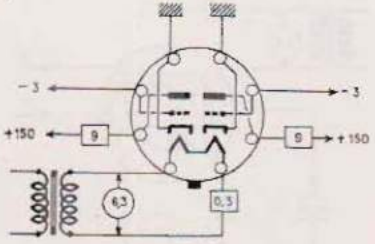
5851 (SM)
P

S = 1,6
ρ = 175 kΩ
V = −7,5

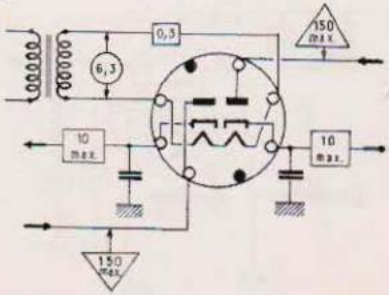


5873 (SM)
BF

S = 2,9
V = −3
P = 22



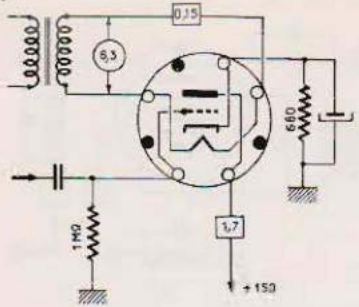
5896 (6H6) (SM)
D



5898 (SM)

BF

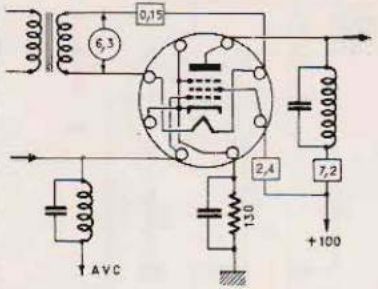
S = 2,7
μ = 70



5899 (SM)

HF (V) (T)

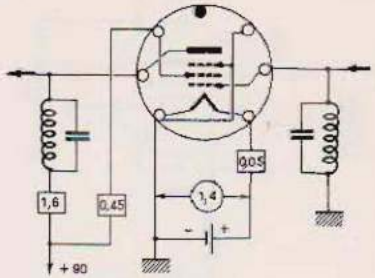
S = 4,5
R = 260 kΩ
V = −1,5 −20



5910 (M)

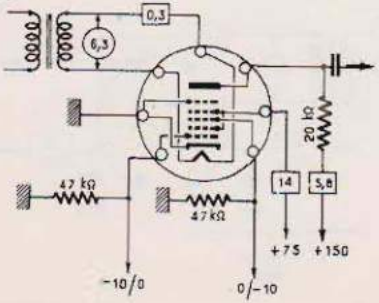
HF

S = 0,9
R = 1,5 kΩ
V = 0



5915 (M)

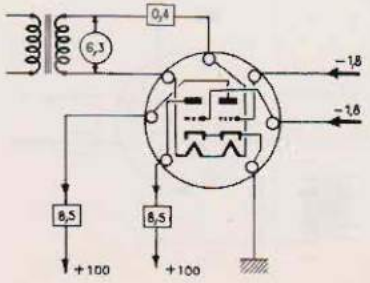
HF



5920 (M)

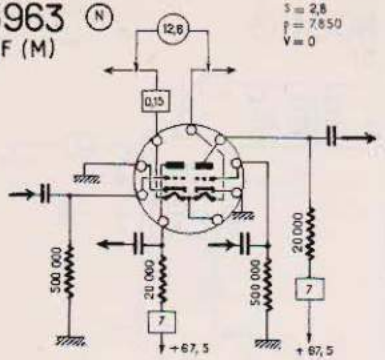
VF (T)

S = 3,5
V = −1,8
R = 25

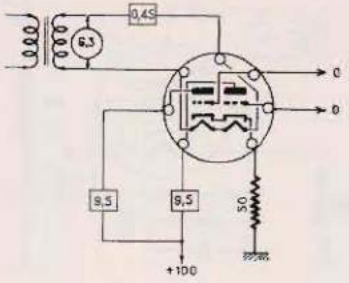


5930 = 2A3
5931 = 5U4
5932 = 6L6
5961 = 6SA7

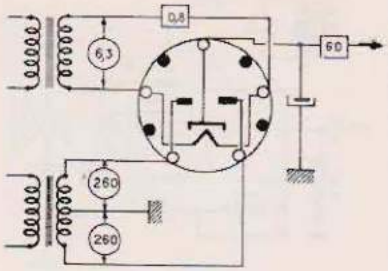
5963 (N)
BF (M)



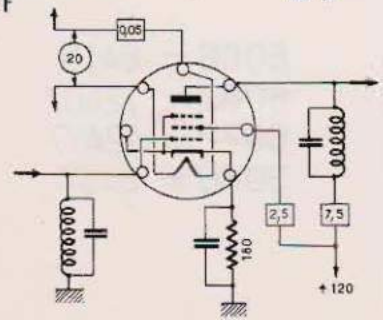
5964 (M)
HF/BF



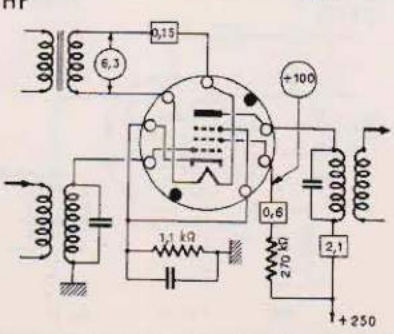
5993 (N)
R



6028 (M)
HF



6059 (N)
HF

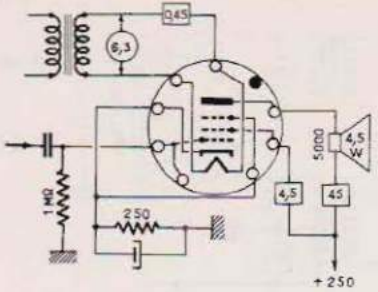


6005 = 6AQ5
6057 = 12AX7
6058 = 6AL6
6060 = 12AT7
6063 = 6X4

6061 (N)

P

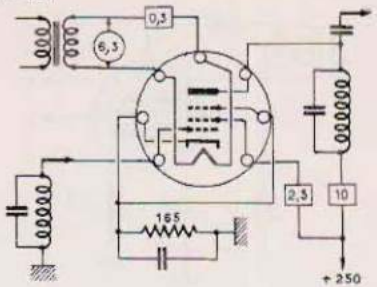
S = 4,1
ρ = 52 kΩ
Va = -12,5



6064 (M)

HF(T)

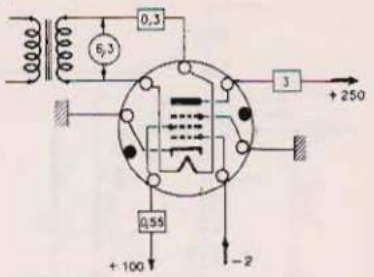
S = 7,5
ρ = 1 MΩ
Va = -2



6084 (N)

BF

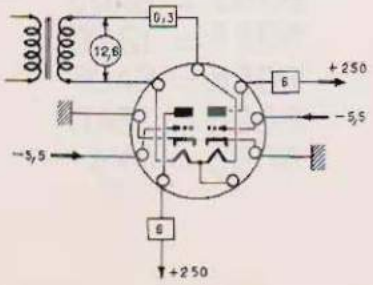
S = 1,85
ρ = 1,8 MΩ
Va = -2



6085 (N)

BF

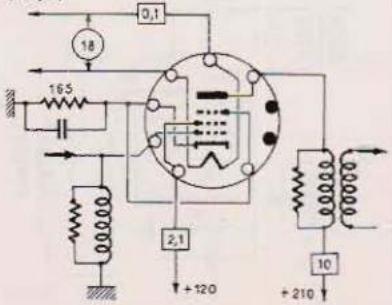
S = 2,7
Va = -5,5
μ = 30



6086 (N)

VF(T)

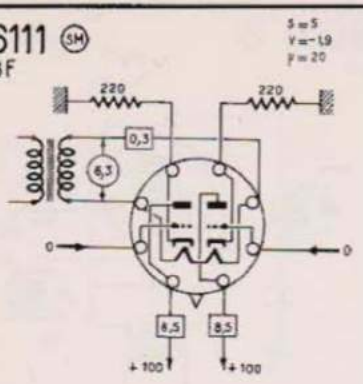
S = 9
ρ = 500 kΩ
Va = -1,5



6066 = 6AT6
6067 = 12AU7
6072 = 12AY7
6080 = 6AS7

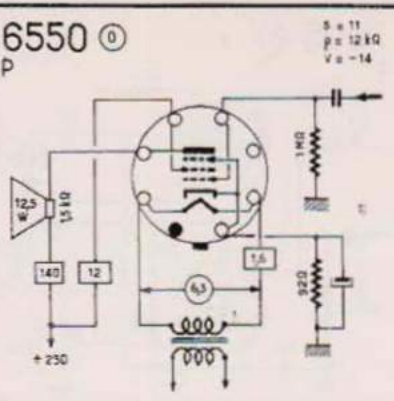
6111 (SM)

BF



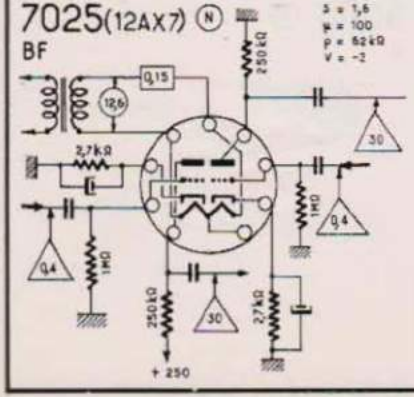
6550 (O)

P



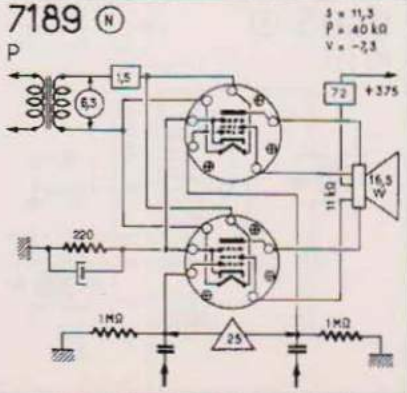
7025 (12AX7) (N)

BF



7189 (N)

P

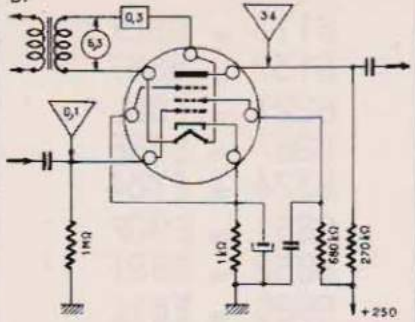


6113 = 6SL7
6137 = 6SK7
6227 = E80L
6267 = EF86
6374 = EY84
6661 = E90F
6662 = E99F
6686 = E81L
6687 = E91H
6688 = E180F
6689 = E89F
6922 = E88CC
7062 = E180CC
7119 = E182CC
7316 = ECC186
7534 = E130L

7543 (6AU6) Ⓜ

BF

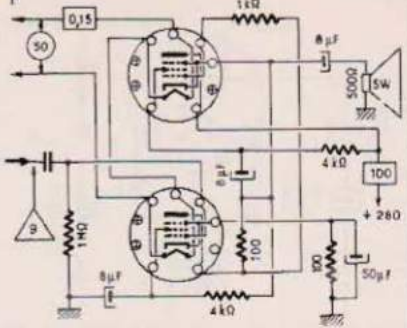
S = 5,2
P = 1 MΩ
V = −1



7695 Ⓝ

P

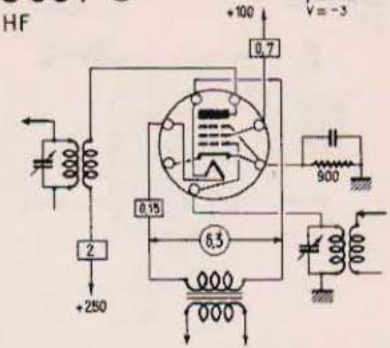
S = 11
p = 7 kΩ
V = −11



9001 Ⓜ

HF

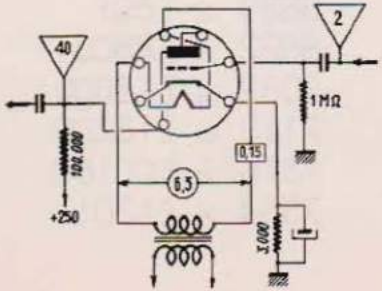
S = 1,4
P = 1 MΩ
V = −3



9002 Ⓜ

BF

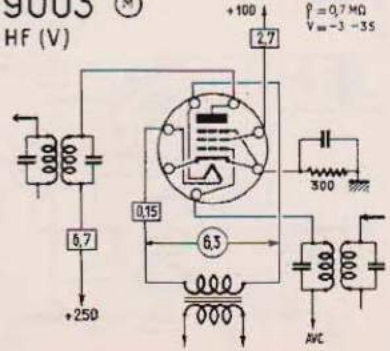
S = 2,2
p = 11 400
V = −7



9003 Ⓜ

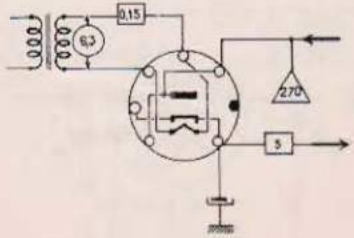
HF (V)

S = 1,8
P = 0,7 MΩ
V = −3 −35



9006 Ⓜ

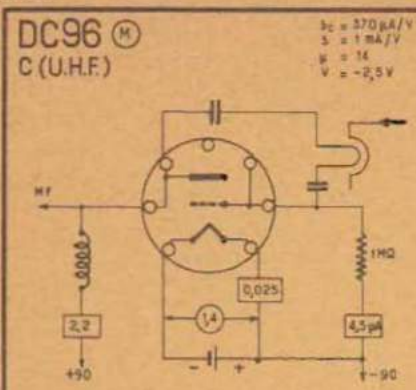
D



IMPRESSION PHOTOMÉCANIQUE. LES PROCÉDÉS DOREL PARIS

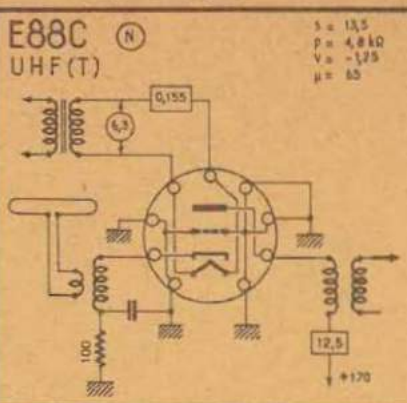
DC96 (M)

C (U.H.F.)



E88C (N)

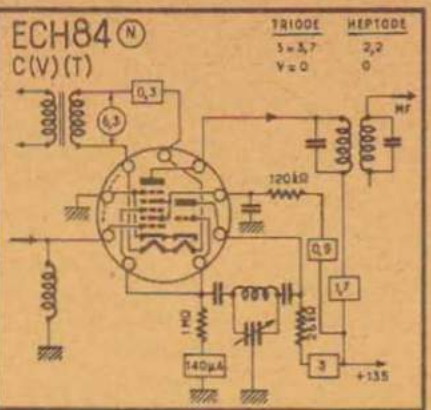
UHF (T)



ECH84 (N)

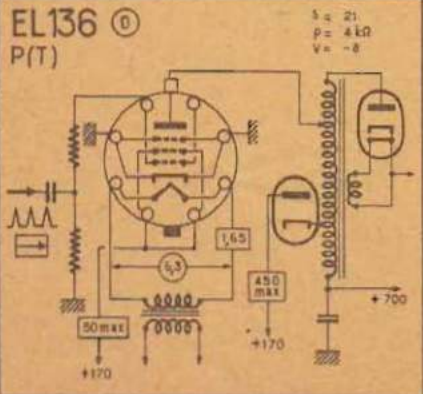
C(V)(T)

	TRIODE	HEPTODE
S =	3,7	2,2
V =	0	0



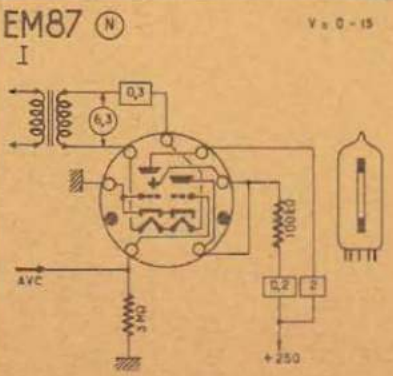
EL136 (O)

P(T)



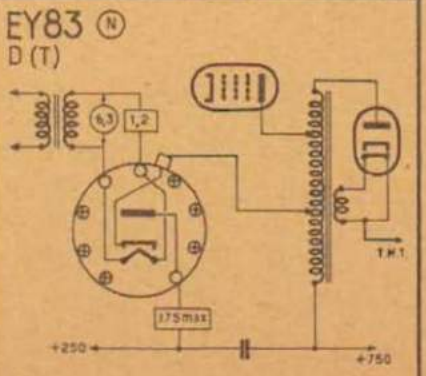
EM87 (N)

I



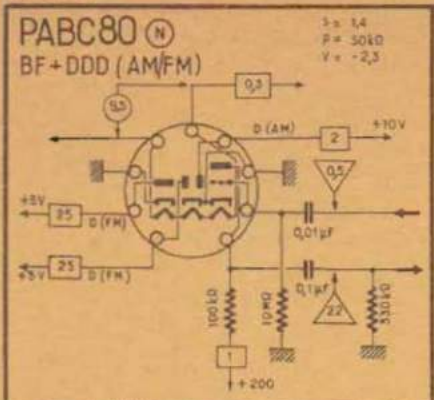
EY83 (N)

D (T)



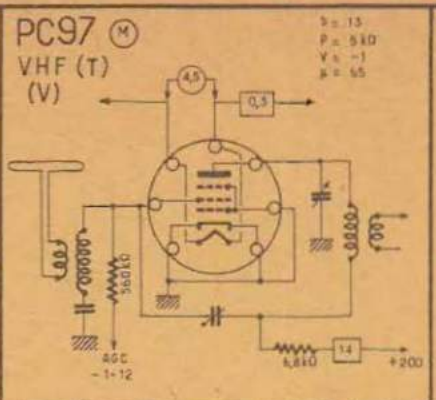
PABC80 (N)

BF + DDD (AM/FM)



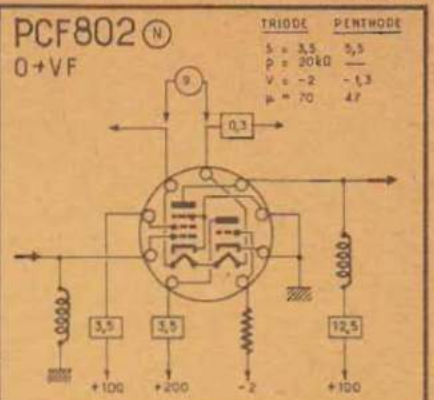
PC97 (M)

VHF (T) (V)



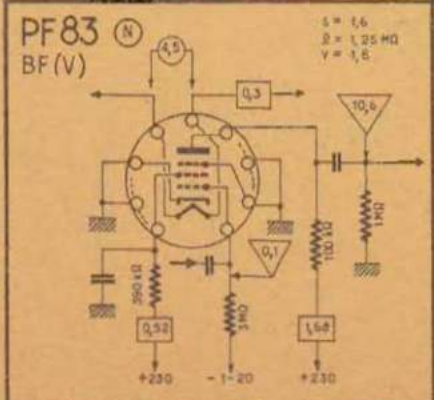
PCF802 (N)

O+VF



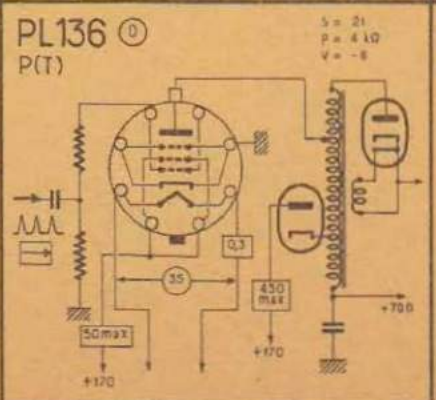
PF83 (N)

BF (V)



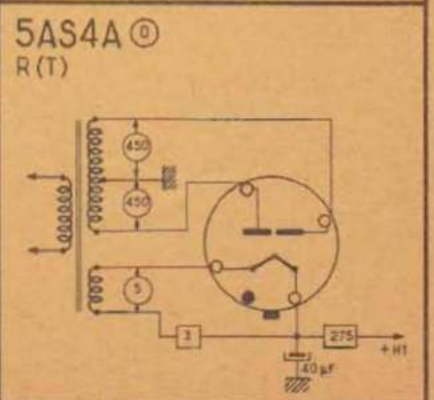
PL136 (D)

P (T)

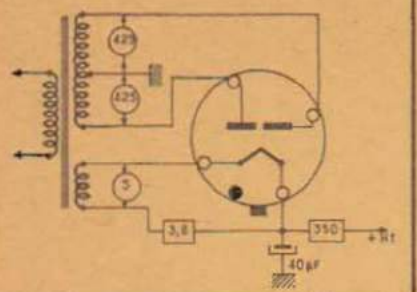


5AS4A (D)

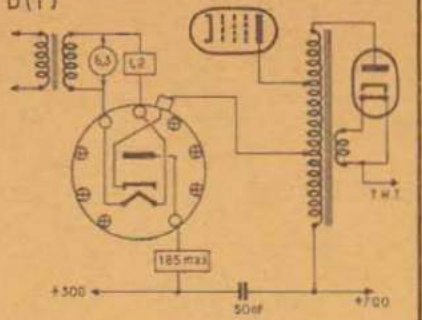
R (T)



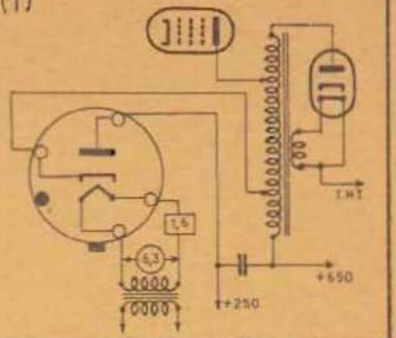
5V3 ⓪
R(T)



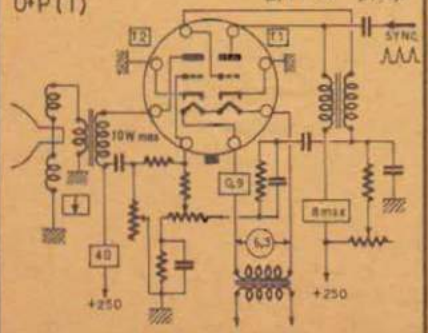
6AF3 Ⓝ
D(T)



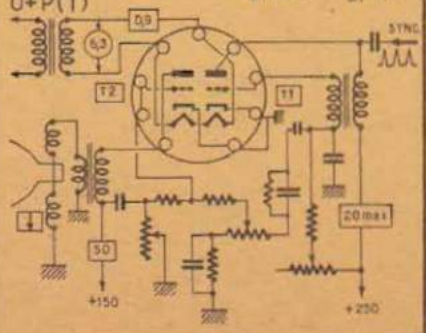
6DE4 ⓪
R(T)



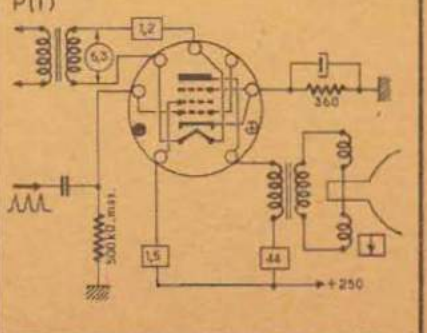
6DN7 ⓪
0+P(T)



6DR7 Ⓝ
0+P(T)



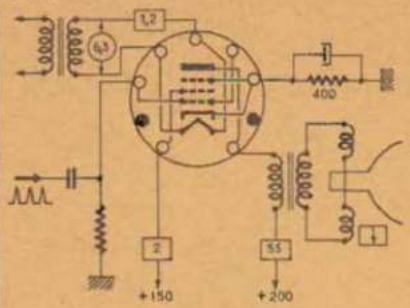
6DT5 Ⓝ
P(T)



6DW5 (N)

P(T)

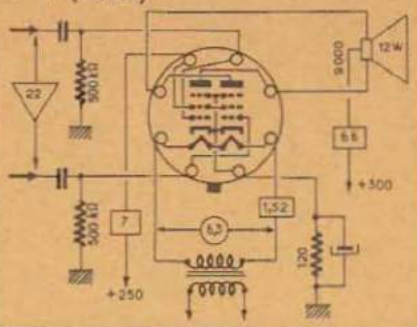
S = 5,5
P = 15 kΩ
Vs = -22



6DZ7 (D)

P+P (stéréo)

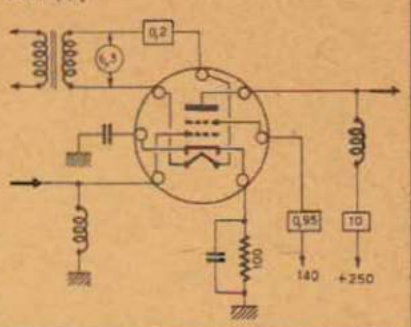
S = 11,3
P = 38 kΩ
Vs = -3,3



6EA5 (M)

VHF(T)

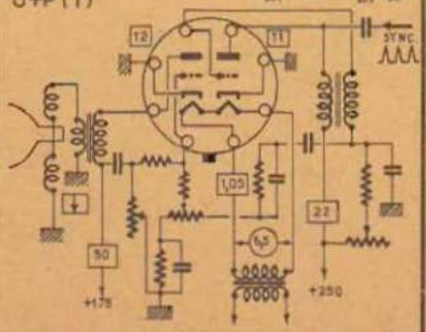
S = 6
P = 0,15 MΩ
V = -1



6EA7 (O)

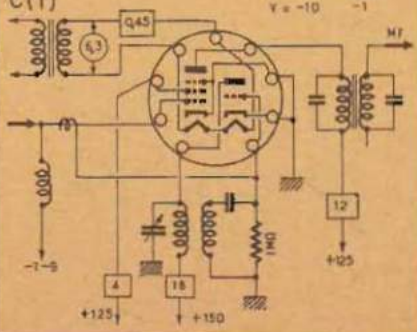
O+P(T)

TRIODE 1: S = 1,9 P = 34 kΩ V = -3
TRIODE 2: 6,5 770 -25



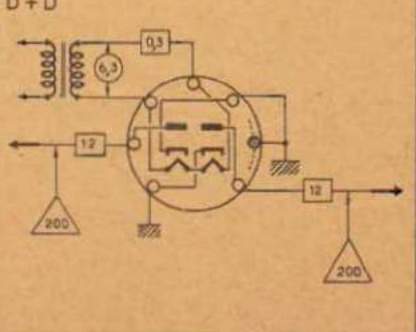
6EA8 (N)

	TRIODE	PENTHODE
S =	6,5	6,4
P =	5000	80 kΩ
V =	-10	-1



6EB5 (M)

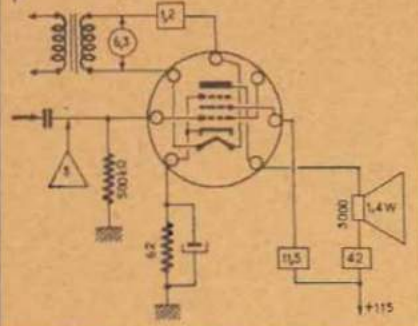
D+D



6EH5 (M)

P

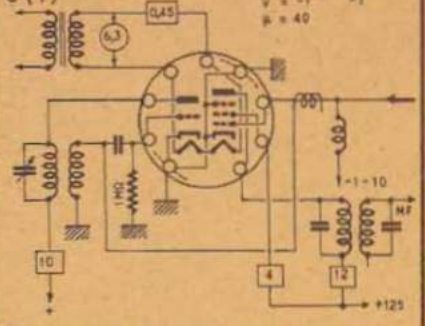
S = 14,6
ρ = 11 kΩ
V = -3



6EH8 (N)

C (T)

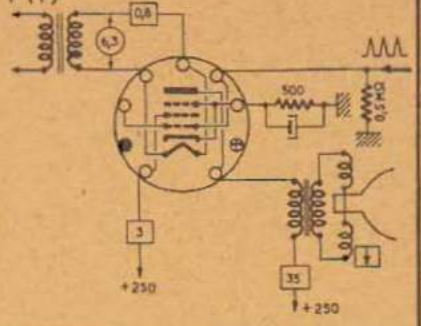
	TRIODE	PENTHODE
S	7,5	6
ρ	5000	0,17 MΩ
V	-1	-1
μ	40	



6EM5 (N)

P(T)

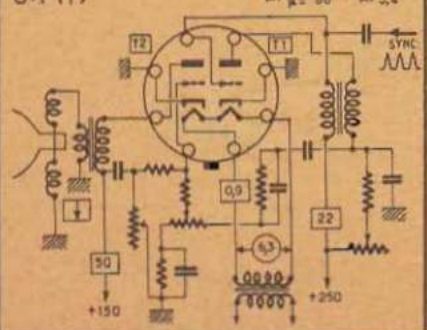
S = 5,1
V = -16



6EM7 (O)

O+P(T)

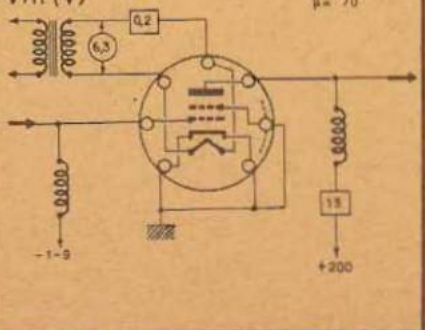
	TRIODE 1	TRIODE 2
S	1,6	7,2
ρ	40 kΩ	750
V	-3	-20
μ	68	5,4



6ES5 (M)

VHF(V)

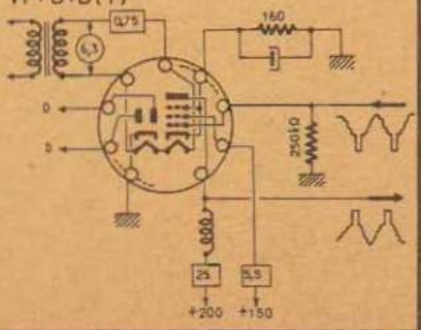
S = 9,5
ρ = 7400
V = -1
μ = 70



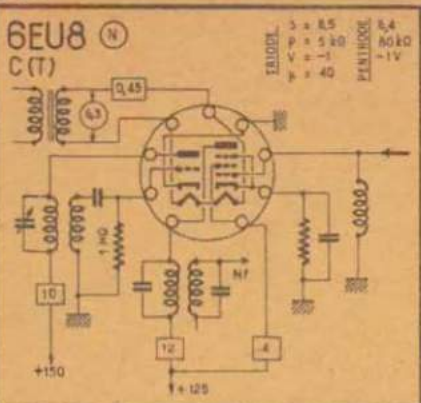
6ET7 (N)

VF+D+D(T)

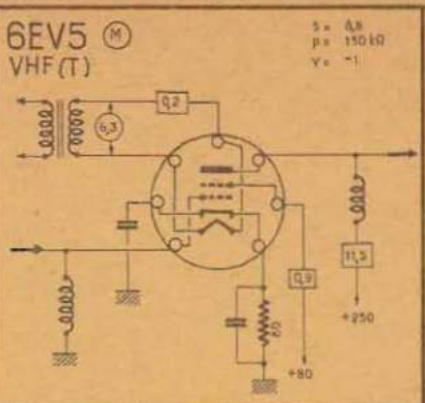
S = 11,5
ρ = 60 kΩ
V = -3



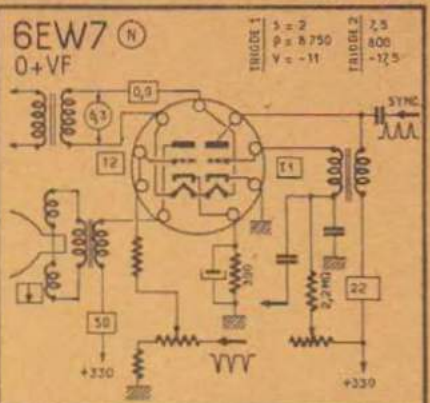
6EU8 (N)
C(T)



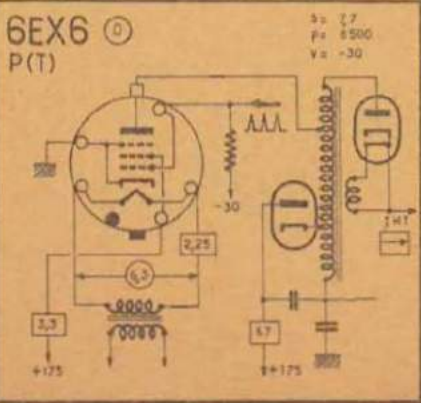
6EV5 (M)
VHF(T)



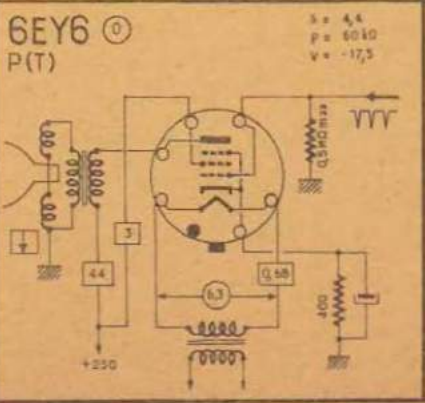
6EW7 (N)
0+VF



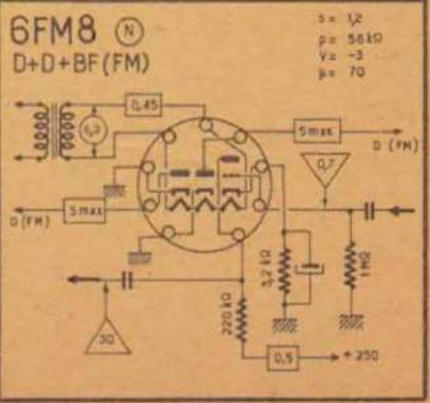
6EX6 (D)
P(T)



6EY6 (D)
P(T)



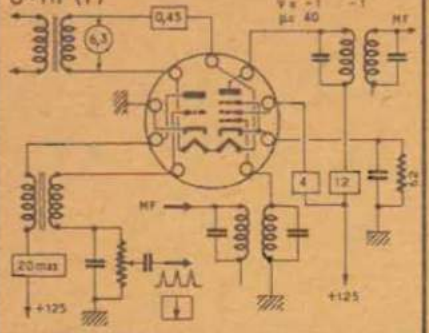
6FM8 (N)
D+D+BF(FM)



6FV8 (N)

O+HF (T)

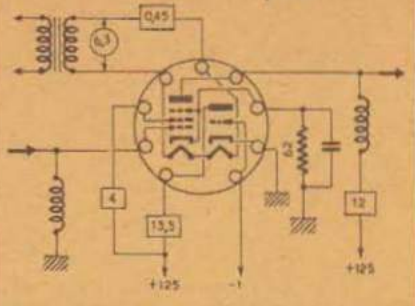
	TRIODE	PENTHODE
S =	8	4,5
P =	5 kΩ	6,2 MΩ
Vg =	-1	-1
μ =	40	



6GH8 (N)

VF+HF(T)

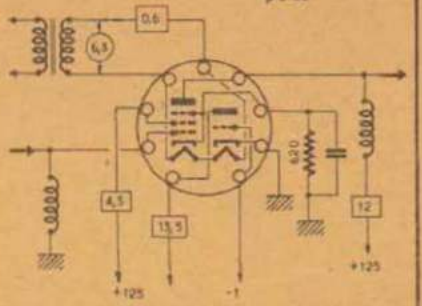
	TRIODE	PENTHODE
S =	6,5	2,5
P =	3,4 kΩ	0,2 MΩ
Vg =	-1	-1
μ =	44	



6GJ8 (N)

VF+O(T)

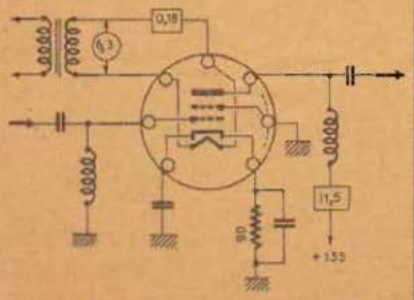
	TRIODE	PENTHODE
S =	8,5	2,5
P =	5 kΩ	0,15 MΩ
Vg =	-1	-1
μ =	40	



6GK5 (M)

VHF

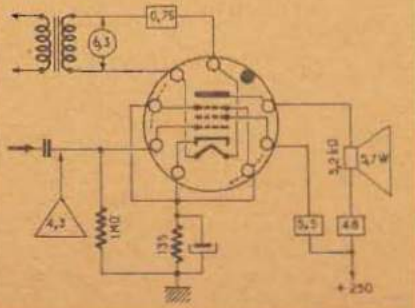
S = 15
P = 5400
V = -1



6GK6 (N)

P

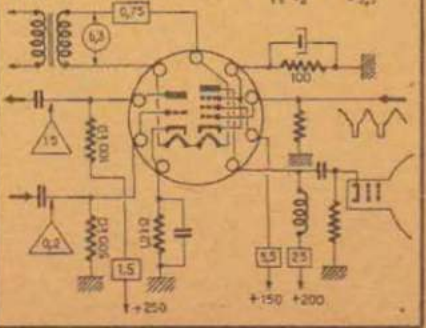
S = 11,3
P = 30 kΩ
Vg = -7,3

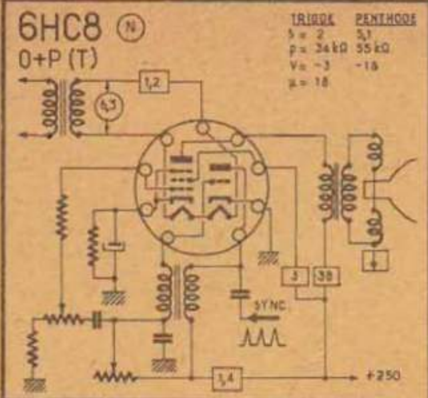


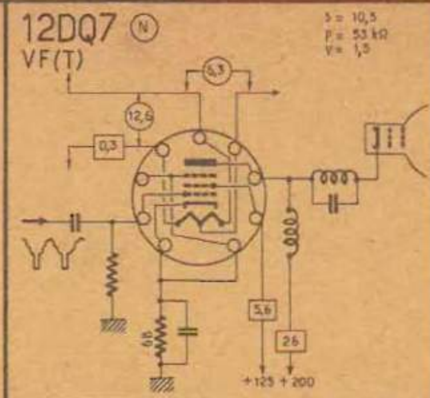
6GN8 (N)

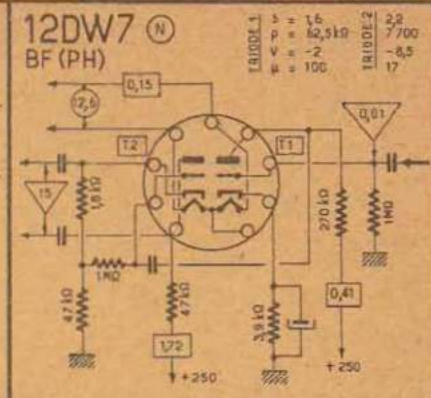
VT(T)

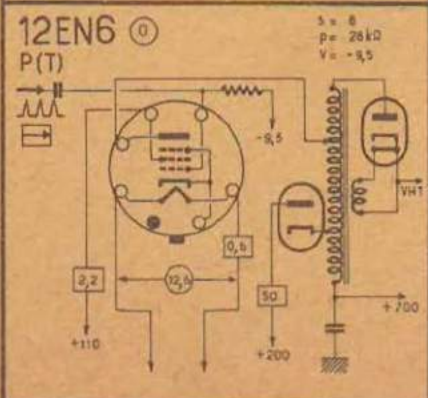
	TRIODE	PENTHODE
S =	2,7	11,5
P =	37 kΩ	60 kΩ
Vg =	-2	-3,5

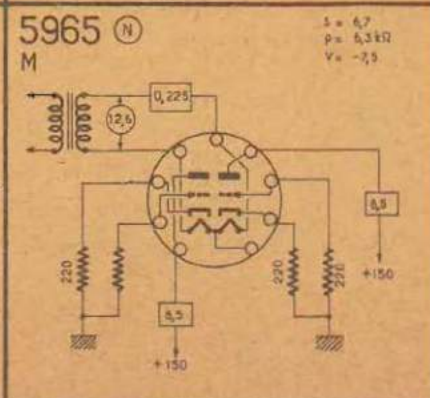


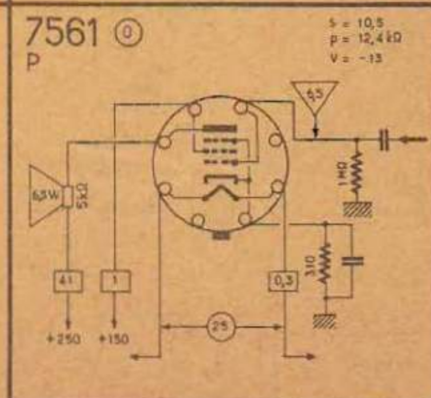












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