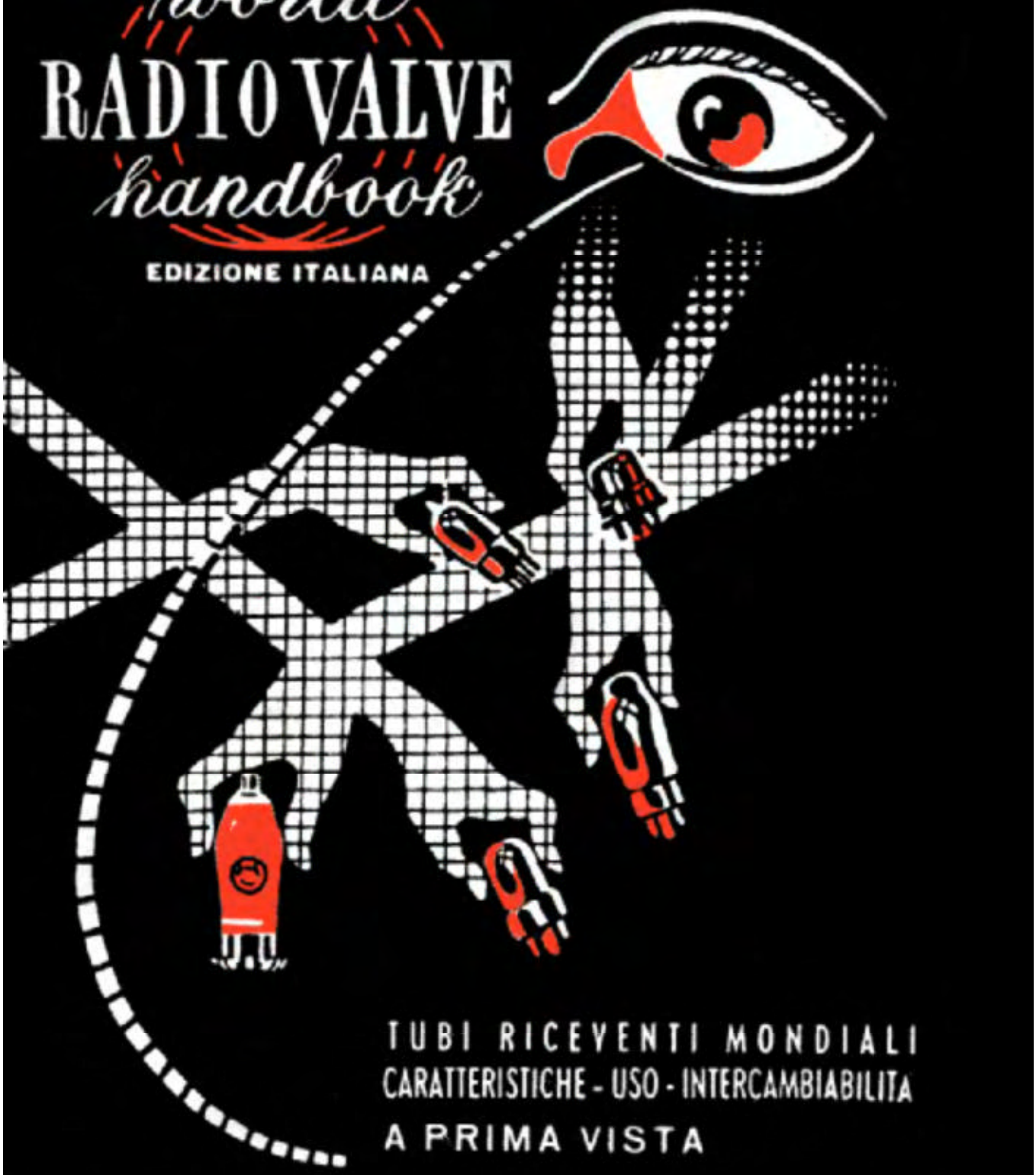
world RADIO VALVE handbook

EDIZIONE ITALIANA



TUBI RICEVENTI MONDIALI
CARATTERISTICHE - USO - INTERCAMBIABILITA
A PRIMA VISTA

EDITRICE IL ROSTRO - MILANO

Nella edizione Inglese non era stata contemplata per i tubi elettronici del tipo europeo la denominazione **VE.**

Si è creduto opportuno inserire tale denominazione per togliere difficoltà ai tecnici non in possesso della tabella di comparazione. È bene chiarire però che nel testo i tubi non erano stati trascurati in quanto inclusi con la dizione **EM 4 (WE 12) E 447 (WE 24),** *ecc.*

WE 12	vedi EM4	EM11	WE 31	AB1		
WE 13	ECL11		WE 32	AK2		
WE 14	EL6	EL12	WE 33	AF3		
WE 15	EL3	EL11	WE 34	AF7		
WE 16	EF5		WE 35	AL1		
WE 17	EF6		WE 36	AB2		
WE 18	EFN11	EFM1	WE 37	ABC1		
WE 19	EBF2	EBF11	WE 38	AL4		
WE 20	ECH3		WE 39	AC2		
WE 21	AK1		WE 40	ACH1		
WE 22	ACH1		WE 41	ABL1		
WE 23	E446	RENS1284	WE 42	AL5		
WE 24	E447	RENS1294	WE 43	ACH1		
WE 25	AF2		WE 51	566	1805	1801
WE 26	E444	RENS1254	WE 52	1561		RGN1064
WE 27	E424N	REN904	WE 53	AZ2		RGN2004
WE 28	E499	RENS914	WE 54	AZ1		
WE 29	E444S	REN924	WE 55	AZ1		
WE 30	E443H	RES964	WE 56	AZ2	AZ4	

ERRATA CORRIGE: a pag. 60 il tubo 955 usa zoccolo 24 e non 25.

WORLD
RADIO VALVE
HANDBOOK

VALVOLE RICEVENTI MONDIALI
LORO CARATTERISTICHE, USO
ED INTERCAMBIABILITÀ
A PRIMA VISTA

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TUTTI I DIRITTI SONO RISERVATI

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O. LUND JOHANSEN
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Consigliere Tecnico: L. Brock-Nannestad
Collaboratori: K. Boye Clansen - K. Mortensen - J. Poulsen
Disegno di copertina: Robert Viby
Traduzione: Nino Pisciotta

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PREFAZIONE

Lo scopo di questo World Radio Valve Handbook è di provvedere i tecnici e gli ingegneri della radio di un semplice e pronto mezzo per ottenere risposte a tutte quelle domande e problemi, concernenti l'impiego delle valvole radio di ogni tipo, di fronte ai quali essi si trovano nel lavoro quotidiano.

Il volume tratta solo le valvole radio usate in apparecchi riceventi ed amplificatori.

Le valvole trasmittenti e quelle di tipo speciale, simili, per esempio, ai thyratrons, fotocellule, klystrons, magnetrons, ecc. sono state omesse poichè pochi particolari di esse potevano essere forniti senza l'uso di tabelle speciali.

In aggiunta alle tabelle contemplate, è stata fatta menzione di un certo numero di nuove valvole i cui dettagli tecnici pervennero troppo tardi per l'inclusione nelle tabelle.

Critiche e correzioni al contenuto di questo W.R.V.H. e suggerimenti per il suo miglioramento saranno benevolmente accolti.

L'intenzione è di edire una nuova edizione ad intervalli convenienti possibilmente in ciascun anno, se il numero delle nuove valvole lo giustificherà.

La prossima edizione potrà probabilmente apparire verso la fine del 1952 od al principio del 1953.

Ringraziamenti sono dovuti ai collaboratori ed alle ditte costruttrici delle valvole la cui collaborazione è stata di valido aiuto nella preparazione di questo manuale.

Si spera che il manuale adempirà ai suoi duplici scopi: facilitare il quotidiano lavoro degli ingegneri e tecnici della radio di tutto il mondo e contribuire verso l'espansione ed il commercio internazionali.

O. LUND JOHANSEN

Novembre 1951.

Per consultare con profitto il « World Radio Valve Handbook » occorre leggere le avvertenze contenute nelle pagine III, IV, V, VI, XXII e seguenti. La lettura preliminare di queste pagine risparmierà tempo e fatica, costituendo esse la chiave indispensabile per la completa e rapida consultazione del « World Radio Valve Handbook ».

INTRODUZIONE E DIRETTIVE PER L'USO DEL MANUALE

Nella maggior parte delle pubblicazioni dedicate al soggetto valvole radio esse sono classificate secondo le loro tensioni di filamento e le loro correnti.

Il metodo adottato nel presente manuale, che racchiude in se ogni tipo di valvola ricevente o amplificatrice è interamente differente.

Esso è basato sul fatto che ci sono certe tolleranze di costruzione permesse nelle costanti delle valvole come mutua conduttanza, fattore di amplificazione e resistenza anodica.

Supposto, per esempio, che la mutua conduttanza (S) di una valvola di un tipo determinato è data, in una delle tabelle seguenti, con 6 mA/V, allora questa indica la media ottenuta per esperimenti su un certo numero di valvole dello stesso tipo. Questa misura può indicare che la mutua conduttanza di una valvola individuale di questo tipo può differire tra 6,6 mA/V e 5,4 mA/V.

Simili considerazioni possono applicarsi alle altre costanti.

Ciò che se ne deduce è che tutte le valvole di cui la mutua conduttanza e le altre caratteristiche rientrano in questi limiti; sono nella pratica reale intercambiabili e quindi possono essere usate per rimpiazzarsi l'un l'altra.

Questa è la base per la classificazione usata in questo libro.

Il primario fattore per stabilire alle valvole un particolare raggruppamento è l'adozione per quel gruppo di particolari costanti, ciascuna con tolleranze del ± 10 %; la costante media di ciascuna valvola del gruppo è mantenuta in questi limiti. I valori segnati nelle tabelle delle caratteristiche sono medî, i valori reali per ogni valvola individuale possono anche differire tra loro leggermente, ma rientrano sempre nei limiti fissati.

Il manuale è diviso in quattro parti.

La I parte del manuale è un indice delle tabelle. Esso indica le pagine e le tabelle dedicate alle valvole distinte in classi particolari

Il termine « classi » impiegato qui si riferisce all'uso normale (Pentodi alta frequenza, Pentodi finali, e così via) al quale la valvola è destinata

La II parte è un indice di tutte le valvole descritte. L'indice porta la sigla dei costruttori di ciascuna valvola, il numero della tabella contenente i suoi particolari e l'appropriato numero della pagina. Sarebbe da notare che nell'indice designante l'indicazione delle valvole sono date priorità a quelle comincianti per lettera (ARP 31) sopra quelle comincianti per numero (6V6 GT).

Una valvola può avere due o più designazioni: la designazione « services » può essere differente dalla designazione « civilian ». In simile caso la designazione *civile* è usata nell'appropriata tabella, la designazione *servizio* appare nell'indice, ma con richiamo alla valvola civile dello stesso tipo.

Il principale scopo della I e II parte è di permettere al lettore

di conoscere i particolari di ciascuna valvola in modo da essere prontamente ritrovata nella parte III. Quest'ultima è la parte più intelligente di tutte le altre poichè contiene le tabelle delle caratteristiche delle valvole.

Poichè il sistema di classificazione delle valvole più ampiamente usato è basato sul numero dei loro elettrodi, la parte III è divisa in sezioni con Diodi, Triodi, Tetrodi, Pentodi e così via.

L'indice delle tabelle è diviso in sezioni simili.

Oltre a dare i valori medi di tutte le caratteristiche di lavoro ogni tabella da anche notizie sugli usi normali delle valvole segnalate, sotto ogni tabella vi è una lista di valvole con caratteristiche consimili.

Altre notizie sono anche date attorno a ciascuna valvola segnalata in queste liste

Nella colonna I (Type) la designazione è in conformità con quella apparente nell'indice delle valvole nella parte II. Il numero della colonna 2ª si riferisce alla zoccolo della valvola, una illustrazione della quale può essere trovata nella parte IV.

La colonna 3ª (Pin connections) indica le connessioni degli elettrodi di ciascuna valvola. Le lettere sono i simboli (spiegati nel corsivo in calce) degli stessi elettrodi.

Il simbolo della lettera che stà per prima nella colonna 3ª indica che il corrispondente elettrodo è connesso al piedino n. 1; il secondo, che il corrispondente elettrodo è connesso al piedino n. 2 e così via.

La colonna 4ª (If A) e 5ª (Vf V) danno rispettivamente la corrente e la tensione di riscaldamento del filamento.

I numeri della colonna 6ª (Notes) conducono il lettore agli speciali punti trattati nelle note in calce alla tabella.

Le illustrazioni nella parte IV mostrano gli zoccoli delle valvole visti dal di sotto. Il numero di ogni zoccolo si riferisce alla colonna 2ª della parte III ed il numero del contatto dello zoccolo corrisponde con quello del contatto al piedino della valvola segnato nella colonna 3ª della stessa parte.

Il supplemento alla fine della parte III (pag. 112) è dedicato alle valvole i cui particolari furono ricevuti troppo tardi per essere inclusi nelle tabelle. La disposizione del supplemento è simile, eccetto che qui la colonna 6ª (No-Pa) indica la tabella alla quale la valvola appartiene, qualunque le sue caratteristiche possano essere.

ABBREVIAZIONI USATE NEL TESTO

1) SIMBOLI DEGLI ELETTRODI:

a	Placca
aH	Placca dell'Esodo (Eptodo)
aP	Placca del Pentodo
aT	Placca del Triodo
a1	Placca del 1° sistema
a2	Placca del 2° sistema
d	Placca del Diodo
d1	Placca del 1° Diodo
d2	Placca del 2° Diodo
f	Filamento o riscaldatore
f+	Positivo del filamento
f—	Negativo del filamento
g1	1ª griglia
g1 H	1ª griglia dell'Esodo (Eptodo
g1 P	1ª griglia del Pentodo
g	Griglia
fc	Presa centrale del filamento
g T	Griglia del Triodo
g1 1	1ª griglia del I sistema
g1 2	1ª griglia del II sistema
g2	2ª griglia
g2 H	2ª griglia dell'Esodo (Eptodo)
g2P	2ª griglia del Pentodo
g2I	2ª griglia del I sistema
g22	2ª griglia del II sistema
g3	3ª griglia
ic	Connessione interna
k	Catodo
k1	Catodo del I sistema
k2	Catodo del II sistema
kD	Catodo del Diodo
l	Schermo fluorescente
m	Massa metallica (involucro)
s	Schermo interno
x	Piedino non usato

2) SIMBOLI DELLE TENSIONI:

V	Volt
Va	Tensione di placca
Vf	Tensione del filamento
Vg	Tensione di griglia
Vg1	Tensione della 1ª griglia
Vg2	Tensione della 2ª griglia
Vl	Tensione dello schermo fluorescente
Vo	Tensione all'uscita

3) SIMBOLI DELLE CORRENTI:

Ia	Corrente anodica
If	Corrente del filamento
Ig2	Corrente della 2ª griglia
Io	Corrente d'uscita del raddrizzatore

4) SIMBOLI DI POTENZA:

W	Watt
mW	Milliwatt = 0,001 Watt
Wa	Dissipazione anodica
Wo	Potenza erogata

5) SIMBOLI DELLE RESISTENZE:

Ra	Resistenza esterna del circuito di placca
Rg	Resistenza esterna del circuito di griglia
Rk	Resistenza catodica

6) SIMBOLI GENERALI:

A	Ampère
mA	Milliampère = 0,001 Ampère
Ω	Ohm
KΩ	Kiloohm
MΩ	Megaohm
S	Mutua conduttanza o pendenza
μ	Coefficiente di amplificazione (o fattore)

COME USARE IL MANUALE

1) Per trovare le caratteristiche di una data valvola.

A fianco della denominazione l'indice dà il numero della appropriata tabella e la pagina in cui essa appare.

Portandoci a questa le caratteristiche richieste sono in tal modo trovate così come altre notizie circa il normale uso della valvola.

Il filamento o riscaldatore, le connessioni allo zoccolo, ed in molti altri casi, altri particolari appaiono nella lista supplementare.

Esempio:

Si vuole una informazione su una valvola la cui denominazione è 6AT6. L'indice porta il lettore alla tabella n. 14, a pagina 55,

dove si trova essere un doppio-diodo-triodo con alto coefficiente di amplificazione. Le caratteristiche elettriche sono date parzialmente nella tabella stessa e parzialmente nella lista supplementare sotto la tabella stessa, che contiene tutte le valvole di caratteristiche consimili in ordine alfabetico o numerico a seconda della loro denominazione.

2) Per trovare una valvola adatta alla sostituzione.

Trovare prima la tabella corrispondente alla valvola alla quale è richiesta una sostituzione. Una sostituzione adatta (ammesso che ve ne sia una) può essere trovata nella lista sotto alla tabella. I dovuti riguardi debbono essere naturalmente posti alle caratteristiche del filamento o riscaldatore come pure alle connessioni dello zoccolo.

Esempio:

Si richiede la sostituzione della 6AT6.

La tabella corrispondente alla 6AT6 mostra che questa valvola adotta uno zoccolo n. 6 e che essa ha 6,3 Volt 0,3 Ampère come valori di riscaldamento. La lista mostra che la 6AQ6, con una più debole corrente di filamento (0,15 A), con identiche connessioni dei contatti base, con lo stesso zoccolo, può servire in modo eccellente come sostituta.

3) Per trovare una valvola di dati elettrici che si adattino ai valori richiesti.

Mediante l'indice delle tabelle se ne trova l'appropriato gruppo. L'esame di questo gruppo mostra che una tabella si riferisce alle valvole entro i cui limiti di tolleranza, le cui costanti cioè, cadono i valori medi che si cercano. Una valvola posta in questa tabella può essere selezionata con i requisiti richiesti di filamento, connessioni e zoccolo.

Esempio:

Nella costruzione di un ricevitore di tipo medio a corrente alternata è richiesta una valvola atta a funzionare come rivelatrice AVC, rettificatrice AF, amplificatrice, il cui coefficiente di amplificazione sia vicino ad 80.

L'indice dà le tabelle dalla n. 13 alla n. 18 (da pagina 55 a 58) sotto la denominazione «Doppio-diodo-triodo»: si trova che la tabella n. 14 si riferisce a valvole col fattore di amplificazione richiesto e fra queste si può sceglierne una che si adatti con le altre nell'apparecchio.

Se, per esempio, le altre valvole si accendono a 6,3 Volt si può scegliere la 6AT6.

4) Trovare le connessioni dei contatti allo zoccolo di una data valvola.

Quando si richiede tale informazione si trova l'apposita tabella attraverso l'indice, trovata la particolare valvola nella lista sotto

la tabella, il lettore è messo nelle condizioni di accertarsi delle connessioni allo zoccolo nella colonna 3, ed il tipo di zoccolo nella colonna 2. Lo zoccolo indicato è da trovarsi nella parte VI.

Esempio:

Si richiede una informazione sui contatti allo zoccolo della valvola 6AT6.

La tabella è stata già trovata nel modo descritto in precedenza e si nota che la 6AT6 ha lo zoccolo n. 6.

Per l'illustrazione posta nella parte IV è chiaro che il piedino n. 1 ed il contatto n. 1 corrispondono alla I griglia (g1); il piedino n. 2 ed il contatto n. 2 corrispondono al catodo (k); e così via.

INDICE DELLE TABELLE

L'indice delle tabelle è diviso in due parti: la prima comprende tutte le tabelle che si riferiscono alle valvole alimentate da batterie; la seconda comprende le tabelle che si riferiscono alle valvole alimentate dalla rete a corrente alternata.

1. **Valvole per apparecchi a batteria**		
DIODI		1
Diodi (per strumenti di misura)	1	1
Doppi-diodi	2	1
TRIODI		2
Triodi	1-17	2-7
Diodi-triodi	18	8
Doppi-diodi-triodi	19-23	8-9
Doppi-triodi	24-25	10
Triodi amplificatori di uscita	26-31	10-12
Doppi-triodi amplificatori di uscita	32-34	12-13
PENTODI A.F.		14
Pentodi A.F. (tetrodi) a mu variabile	1-4	14-15
Pentodi A.F. (tetrodi)	5-14	15-19
Pentodo per microamplificatori	15	19
Pentodi (tetrodi) per microamplificatori	16	19
Diodi-pentodi (tetrodi)	17-19	20-21
Doppi-diodi-pentodi	20	21
Doppio-pentodo (tetrodo) per microamplificatori	21	21
Doppio-pentodo per microamplificatori	22	22
Diodo-eptodo	23	22
Diodo-triodo-pentodo A.F.	24	22
PENTODI AMPLIFICATORI D'USCITA		23
Pentodi amplificatori d'uscita (tetrodi)	1-17	23-29
Diodo-pentodo amplif. d'uscita (tetrodo)	18	30
Diodi-triodi-pentodi ampl. usc. (tetrodi)	19	30
Doppi-pentodi ampl. uscita (tetrodi)	20-22	30-31
MESCOLATRICI		32
Esodi (convertitori di frequenza)	1-2	32
Eptodi (convertitori di frequenza)	3-4	33
Ottodi (convertitori di frequenza)	5-6	33-34
Triodi-pentodi (convertitori di freq.)	7	34
Triodi-eptodi-esodi (convertitori di frequenza)	8-9	35
INDICATORI DI SINTONIA		35
Indicatori di sintonia	1	35

2.
Valvole per apparecchi alimentati con corrente alternata

DIODI A.F.		36
Diodi A.F.	1-2	36-37
RETTIFICATORI		38
Diodi monoplacca	1-9	38-42
Diodi biplacca	10-16	43-49
Duplicatore di tensione	17	49
TRIODI		50
Triodi	1-10	50-54
Triodo biplacca	11	54
Diodo-triodo	12	55
Doppi diodi-triodi	13-18	55-58
Doppi triodi	19-21	59-60
Triodi U.A.F.	22-28	60-62
Doppi triodi U.A.F.	29	63
Triodi amplificatori di uscita	30-45	63-48
Doppi triodi amplificatori d'uscita	46-47	69
PENTODI A.F.		70
Pentodi (tetrodi) A.F. a mu variabile	1-3	70-73
Pentodi (tetrodi) A.F.	4-15	73-79
Pentodi (tetrodi) A.F. ampl. larga banda	16-23	79-82
Pentodi amplif. larga banda ad em. second.	24-25	83
Pentodi (tetrodi) U. A. F.	26	83
Doppi-pentodi (tetrodi) U.A.F.	27	84
Diodi-pentodi A.F. (tetrodi) a mu variab.	28	84
Doppi - diodi - pentodi A.F. (tetrodo) a mu variab.	29-30	84-85
Pentodi A.F. - triodi	31-34	85-86
Esodo A.F. a mu variabile	35	87
Esodi A.F.	36	87
PENTODI AMPLIFICATORI DI USCITA		88
Pentodi amplificatori d'uscita (tetrodi)	1-22	88-98
Pentodi amplificatori d'uscita (tetrodi) con diodi rettificat. monoplacca	23-25	98-99
Doppi - diodi - pentodi ampl. usc. (tetrodi)	26-29	99-100
Triodi-pentodi ampl. usc. (tetrodi)	30-32	101
Tetrodi ampl. - pentodi ampl. usc. (tetrodi)	33	101
Doppio pentodo ampl. uscita	34	102
Doppi pentodi ampl. uscita	35-36	102
Pentodi amplif. uscita (tetrodi) per circuiti televisivi	37-39	102-103
Pentodi ampl. uscita video	40	103
MESCOLATRICI		104
Eptodi (esodi) convertitori di frequenza	1-3	104-105
Ottodi convertitori di frequenza	4-5	105-106
Triodi-pentodi convertitori di frequenza	6	106
Triodi-eptodi (esodi) convertitori di frequenza	7-10	107-109
Enneodi (rivelatori-limitatori FM)	11	109
INDICATORI DI SINTONIA		110
Indicatori di sintonia	1-2	110-111
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INDICE DEI TIPI

AA61	Ma	21-60	ARTP1	=	TF22	A23A	Ev	15-56	CCH35	Mu	9-108
ABC1	Ph	15-56	ARTP2	=	TF25	A27D	Ev	28-100	CC1	Ph	4-51
ABL1	Ph	28-100	ARD4	=	D42	A30B	Ev	3-51	CC2	Ph	4-51
AB1	Ph	1-36	ARH1	=	6L7	A30D	Ev	7-53	C/EM2	Ph	1-110
AB2	Ph	1-36	ARP2	=	SP2	A36C	Ev	9-107	CF1	Ph	9-75
ACHL	Hi	7-53	ARP3	=	9D2	A50A	Ev	10-77	CF2	Ph	2-70
AC/HLDD	Ma	17-58	ARP4	=	SP210	A50B	Ev	14-78	CF3	Ph	3-72
ACH1	Ph	9-107	ARP5	=	VP2	A50M	Ev	9-75	CF7	Ph	9-75
AC/P	Ma	2-50	ARP6	=	SP4	A50N	Ev	9-75	CF50	Ph	14-78
AC/PEN	Ma	5-90	ARP7	=	42MPT	A50P	Ev	11-77	CF61		9-108
ACP1	Ma	51-63	ARP8	=	AC4/PEN	A70B	Ev	5-90	CF141	Ma	8-107
AC/SG	Ma	2-70	ARP9A	=	7D8	A70D	Ev	17-95	CH1	Ph	2-104
AC/SGVM	Ma	2-70	ARP10	=	PEN/A4	A80A	Ev	5-106	CK1	Ph	5-106
ACS2PEN	Ma	7-75	ARP12	=	VP23	A214	Tr	11-5	CK3	Ph	5-106
AC/TH1	Ma	10-109	ARP15	=	KTW63	A408	Ph	11-5	CK502AX	Us	3-23
AC/TP	Ma	34-86	ARP16	=	6J7	A409	Ph	9-5	CK503AX	Ra	5-24
AC/VP1	Ma	11-77	ARP18	=	KT24	A415	Ph	11-5	CK505	Ra	17-20
AC/VP2	Ma	11-77	ARP19	=	SP41	A420	Tr	11-5	CK506AX	Ra	4-24
AC/2HL	Ma	9-54	ARP20	=	SP42	A425	Ph	11-5	CK507AX	Ra	5-24
AC2	Ph	4-51	ARP23	=	MS/PEN	A430	Ph	13-6	CK509AX	Ra	1-2
AC2/PEN	Ma	17-95	ARP25	=	KT41	A430H	Tr	4-51	CK510AX	Ra	21-21
AC2/PEN/DD	Ma	28-100	ARP26	=	KT44	A442	Ph	11-17	CK515BX	Ra	1-2
AC4/PEN	Ma	22-98	ARP33	=	MSP4	A1714		25-61	CK1005	Ra	11-45
AC5/PEN	Ma	17-95	ARP34	=	EF39	A4110	Va	4-51	CL1	Ph	3-89
AC5/PEN/DD	Ma	28-100	ARP35	=	EF50	BB1	Te	1-36	CL2	Ph	8-92
AC6PEN	Ma	18-96	ARP36	=	SP61	BEP61	Te	7-16	CL4	Ph	16-94
AC.042	Mu	42-67	ARP37	=	QP25	BF61	Te	17-95	CL6	Ph	16-94
AC.044	Mu	42-67	AR5	=	P220	BF62	Te	7-91	CL33	Mu	16-94
AD1	Ph	42-67	AR6	=	LP2	BF451	Ma	19-97	CV9	=	AL60
AF2	Ph	2-70	AR7	=	4D1	BHP61	Ma	7-16	CV21	=	VP41
AF3	Ph	3-72	AR8	=	HL23DD	BLP61	Ma	16-29	CV24	=	HL41
AF7	Ph	9-75	AR10	=	TDD2A	BL2	Te	8-92	CV65	=	PEN25
AF100	Te	20-81	AR17	=	MH4	BM061	Te	5-33	CV66	=	RL37
AG495	Tu	4-51	AR21	=	EBC33	B36	Mi	21-60	CV118	=	SP61
AH1	Ph	2-104	AR495	Tu	3-51	B65	Os	21-60	CV131	=	9D6
AH100	Te	3-105	AR4100	Tu	1-50	B217	Ph	11-5	CV133	=	6C4
AK1	Ph	5-106	AR4101	Tu	1-50	B405	Ph	26-10	CV138	=	EF91
AK2	Ph	5-106	AR4120	Tu	3-51	B406	Ph	26-10	CV140	=	6AL5
AL1	Ph	5-90	AS4100	Tu	4-73	B409	Ph	27-11	CV175	=	XSG1,5V
AL2	Ph	5-90	AS4105	Tu	1-70	B424	Ph	11-5	CV176	=	XP1,5V
AL3	Ph	17-95	AS4120	Tu	9-75	B438	Ph	15-7	CV181	=	ECC31
AL4	Ph	17-95	AS4125	Tu	9-75	B442	Ph	11-17	CV185	=	PM202
AL5	Ph	18-96	AX1	Ph	13-47	B443	Ph	8-25	CV260	=	SP61
AL60	Mu	22-98	AX50		14-48	B543	Ph	8-25	CV281	=	X61M
AMOE	Mu	18-96	AZ1	Ph	11-45	B2038	Ph	4-51	CV283	=	6AL5
AM1	Ph	1-110	AZ3	Ph	11-45	B2046	Ph	9-75	CV303	=	EF22
AM2	Ph	1-110	AZ4	Ph	12-46	B2047	Ph	2-70	CV305	=	EF51
APP4120	Tu	3-89	AZ11	Ph	11-45	CBC1	Ph	15-56	CV358	=	EF37
APP4130	Tu	5-90	AZ12	Ph	12-46	CBL1	Ph	27-99	CV380	=	EF54
ARDD1	=	10D1	AZ21	Ph	11-45	CBL6	Ph	29-100	CV384	=	CK502
ARDD3	=	6H6	AZ31	Mu	11-45	CBL31	Mu	27-99	CV386	=	CK505
ARDD5	=	EB34	AZ41	Ph	10-43	CB1	Ph	1-36	CV387	=	CK506
ARTH2	=	ECH35	AZ50		14-48	CB2	Ph	1-36	CV394	=	EM34
			A110	Ev	12-46	CCH1	Te	9-108	CV500	=	6T7
			A11D	Ev	11-45	CCH2	Ph	9-108	CV501	=	EBF32
			A20B	Ev	1-36						

CV504 = 6U5
CV509 = 6V6G
CV511 = 6V6GT
CV512 = 6W7G
CV515 = 6Y6G
CV517 = 0Z4A
CV518 = AG/VP1
CV519 = PEN4DD
CV520 = VP2B
CV522 = 7B7
CV525 = 12A6
CV526 = 12A6GT
CV529 = 12AH7GT
CV531 = 12C8
CV534 = 12J5
CV535 = 12J5GT
CV537 = 12SA7
CV538 = 12SA7
CV540 = 12SC7
CV543 = 12SK7
CV544 = 12SK7
CV546 = 12SQ7
CV547 = 12SQ7
CV549 = 25A6
CV550 = 25A6
CV551 = 25L6
CV552 = 25L6
CV553 = 25L6
CV561 = 35L6
CV562 = 35L6
CV571 = 50L6
CV578 = 6A6
CV579 = 6A6
CV580 = 6A6
CV581 = 6C5
CV582 = 6C5
CV583 = 6C5
CV585 = 6C6
CV587 = 6Q7
CV588 = 6Q7
CV589 = 6Q7
CV590 = 6SJ7
CV591 = 6SJ7
CV592 = 6SJ7
CV594 = 6SH7
CV595 = 6SH7
CV597 = 2X2A
CV599 = 1851
CV604 = 30
CV606 = 37
CV608 = 41
CV609 = 42
CV610 = 45
CV615 = 76
CV617 = 80
CV618 = 83
CV619 = 84
CV649 = 956
CV652 = 1603
CV654 = 1612
CV660 = 6AC7
CV661 = 6AB7
CV664 = 9002
CV665 = 9003
CV692 = 0Z4
CV694 = 12SG7
CV697 = 12SJ7
CV698 = 12SJ7
CV700 = 12SR7
CV703 = 12K8
CV705 = 1D5GP
CV706 = 6U7G
CV712 = 38
CV726 = 35Z3
CV728 = 1P5GT
CV729 = 5V4G
CV730 = 6A3
CV731 = 6F6
CV747 = 6AC7
CV750 = 01-A
CV753 = 1A3
CV754 = 1A4P
CV757 = 1A6
CV758 = 1B4P
CV759 = 1B5/25S
CV760 = 1B7GT
CV764 = 1D5
CV765 = 1D7G
CV766 = 1E5GP
CV767 = 1F4
CV768 = 1F5G
CV769 = 1F6
CV770 = 1F7
CV771 = 1G5
CV772 = 1G6
CV773 = 1G6
CV774 = 1H4
CV775 = 1LA6
CV776 = 1LB4
CV777 = 1LC5
CV778 = 1LC6
CV779 = 1LD5
CV780 = 1LH4
CV781 = 1LN5
CV782 = 1R5
CV783 = 1S4
CV785 = 1S5
CV785 = 1T4
CV786 = 1T5
CV795 = 2D4A
CV805 = 5OY6
CV807 = 3A4
CV808 = 3A5
CV811 = 1291
CV815 = 3D6/1299
CV818 = 3Q4
CV819 = 3Q5
CV820 = 3S4
CV826 = 4THA
CV828 = 4TPB
CV829 = 4TPB
CV830 = 4TSP
CV833 = 89
CV837 = 12C8
CV841 = 5U4GT
CV842 = 5W4G
CV843 = 6AB5/6N5
CV844 = 6AC5
CV845 = 6AC5
CV846 = 6AC7
CV847 = 6AF6G
CV848 = 6AG5
CV849 = 6AC7
CV850 = 6AK5
CV852 = 6C4
CV854 = 6C7
CV856 = 6C8G
CV858 = 6J6
CV859 = 6J8
CV860 = 6K5
CV861 = 6K5
CV862 = 6L5
CV864 = 6P7G
CV865 = 6SD7
CV866 = 6SJ7Y
CV867 = 6SR7
CV870 = 6V7
CV871 = 6Z5
CV872 = 6Z7
CV873 = 6ZY5
CV876 = 7A6
CV877 = 7A7
CV878 = 7A8
CV879 = 7B4
CV880 = 7B5
CV881 = 7B5
CV882 = 7B6
CV883 = 7B8
CV885 = 7C5
CV886 = 7C5
CV887 = 7C6
CV888 = 7D7
CV889 = 7D8
CV890 = 7E3
CV891 = 7E6
CV892 = 7E7
CV893 = 7F7
CV894 = 7G7
CV895 = 7H7
CV896 = 7K7
CV897 = 7J7
CV898 = 7N7
CV899 = 7Q7
CV900 = 7R7
CV901 = 7Y4
CV902 = 7W7
CV908 = 12A5
CV909 = 12A7
CV910 = 12A8
CV911 = 12B8
CV916 = 12H6
CV917 = 12J7
CV918 = 12K7
CV919 = 12SF5
CV920 = 12SF5
CV921 = 12SF7
CV922 = 12SH7
CV924 = 12SL7
CV925 = 12SN7
CV927 = 12Z3
CV930 = 14F7
CV931 = 15
CV936 = 24A
CV937 = 24A7
CV938 = 25AC5
CV939 = 25B6
CV940 = 25B8
CV942 = 25Y5
CV945 = 28D7
CV946 = 28D7
CV948 = 32L7
CV949 = 33
CV995 = 6AJ5
CV996 = EL32
CV1000 = 4D1
CV1018 = 215SG
CV1019 = PM2
CV1020 = 220P
CV1021 = 210LF
CV1022 = 220PA
CV1023 = 230XP
CV1027 = 210LF
CV1035 = QP21
CV1037 = MH4
CV1038 = MHL4
CV1039 = MU14
CV1040 = PX25
CV1041 = PM12M
CV1042 = 210LF
CV1043 = 210PG
CV1044 = 210DDT
CV1046 = PT25H
CV1049 = 210SPT
CV1052 = EL32
CV1053 = EF39
CV1054 = EB34
CV1055 = EBC33
CV1056 = EF36
CV1057 = EK32
CV1059 = 955
CV1064 = U12/14
CV1065 = SP61

CV1066 = P61
CV1067 = 6J5
CV1071 = 5U4
CV1073 = H63
CV1074 = 6J7
CV1075 = KT66
CV1082 = 220TH
CV1091 = EF50
CV1092 = EA50
CV1095 = 954
CV1106 = 9D2
CV1107 = 15D2
CV1108 = 6D2
CV1109 = 4D1
CV1113 = U17
CV1117 = 41MTL
CV1119 = DDL4
CV1120 = SU2150A
CV1122 = 41MXP
CV1123 = EF8
CV1124 = MS/PEN
CV1125 = MS/PENB
CV1127 = PEN46
CV1129 = MS/PEN
CV1130 = HL23
CV1134 = HVR2
CV1136 = EF54
CV1137 = EC52
CV1164 = ACSG
CV1165 = VMS4
CV1166 = P220
CV1167 = PM24A
CV1168 = PX4
CV1169 = VMP4G
CV1170 = D41
CV1178 = DA30
CV1179 = ML4
CV1181 = KT41
CV1183 = W42
CV1187 = D41
CV1189 = AC6PEN
CV1191 = KT241
CV1193 = X65
CV1195 = KTW63
CV1196 = AC5PENDD
CV1246 = PM202
CV1264 = U18
CV1268 = 5Y3
CV1280 = 6L7
CV1282 = MSP4
CV1283 = SP4
CV1285 = 6N7
CV1286 = 6L6
CV1296 = MU14
CV1300 = 10D1
CV1301 = 6H6
CV1302 = D42
CV1304 = LP2
CV1306 = HL23DD
CV1308 = TDD2A
CV1320 = SP2
CV1321 = 9D2
CV1322 = SP210
CV1323 = VP2
CV1324 = SP4
CV1325 = 42MPT
CV1326 = AC4PEN
CV1328 = 7D8
CV1329 = PENA4
CV1331 = VP23
CV1334 = KT24
CV1335 = SP41
CV1336 = SP42
CV1340 = KT44
CV1341 = MSP4
CV1342 = QP25
CV1344 = TP22
CV1345 = TP25
CV1347 = ECH35
CV1356 = U22
CV1359 = ME41
CV1401 = CL33
CV1402 = CY31
CV1403 = DD41
CV1404 = EF36
CV1407 = PEN45
CV1408 = P41
CV1409 = SP2
CV1410 = TH2
CV1413 = UU6
CV1414 = VP41
CV1424 = 20A1
CV1425 = 7D5
CV1426 = EK2
CV1427 = EF9
CV1428 = EBC3
CV1429 = EL2
CV1433 = EC31
CV1434 = EM4
CV1438 = KT61
CV1443 = B1
CV1444 = 42SPT
CV1454 = 225DU
CV1456 = PEN383
CV1457 = VP133
CV1458 = 41MP
CV1460 = X41
CV1463 = CBL31
CV1502 = KT32
CV1505 = MH41
CV1569 = R3
CV1574 = SP41
CV1578 = EF50
CV1579 = 954
CV1691 = DDL4
CV1695 = DH30
CV1697 = X41
CV1715 = EBC3
CV1718 = ACTP
CV1720 = XL1,5
CV1721 = XP1,5
CV1727 = Z22
CV1732 = ML4
CV1753 = 35A5
CV1756 = 1629
CV1757 = 9001
CV1758 = IL4
CV1762 = 6AK6
CV1763 = 6J4
CV1770 = 7A4
CV1772 = 47
CV1773 = 82
CV1775 = 36
CV1776 = 6D7
CV1777 = 7C7
CV1784 = 6AK7
CV1790 = 7Z4
CV1796 = DW4/350
CV1800 = 1A7
CV1802 = 1A7
CV1803 = 1C5
CV1805 = 1C5
CV1806 = 1D5
CV1811 = 1D8
CV1812 = 1E7
CV1817 = 1G4
CV1818 = 1H5
CV1819 = 6P5
CV1820 = 1H5
CV1821 = 1N5
CV1823 = 1N5
CV1824 = 1Q5
CV1826 = 1Q5
CV1829 = 1T5
CV1846 = 5T4
CV1849 = 5W4
CV1851 = 5X4G
CV1854 = 5Y3
CV1856 = 5Y3
CV1857 = 5Y4
CV1861 = 5Z3
CV1863 = 5Z4
CV1864 = 5Z4
CV1867 = 6A6
CV1873 = 6AB7
CV1876 = 1852
CV1878 = 6AD7
CV1882 = 6AG7
CV1887 = 6B6
CV1891 = 6B7
CV1893 = 6B8
CV1894 = 6B8
CV1896 = 6C8
CV1900 = 6D6
CV1902 = 6D8
CV1906 = 6E5
CV1908 = 6F5
CV1909 = 6F5
CV1910 = 6F5
CV1911 = 6B6
CV1912 = 6F6
CV1915 = 6F7
CV1917 = 6F8
CV1918 = 6F8
CV1926 = 6G6
CV1929 = 6H6
CV1930 = 6H6
CV1931 = 6H6
CV1932 = 6J5
CV1933 = 6J5
CV1934 = 6J5
CV1935 = 6J7
CV1936 = 6J7
CV1937 = 6J7
CV1938 = 6K6
CV1940 = 6K6
CV1941 = 6K7
CV1942 = 6K7
CV1943 = 6K7
CV1944 = 6K8
CV1945 = 6K8
CV1946 = 6K8
CV1947 = 6L6
CV1948 = 6L6
CV1950 = 6L7
CV1951 = 6L7
CV1956 = 6N7
CV1958 = 6N7
CV1958 = 6N7
CV1960 = 6R6
CV1962 = 6R7
CV1963 = 6R7
CV1964 = 6R7
CV1966 = 6SA7
CV1967 = 6SA7
CV1969 = 6SC7
CV1970 = 6SC7
CV1972 = 6SF5
CV1973 = 6SF5
CV1974 = 6S7
CV1975 = 6S7
CV1978 = 6SG7
CV1981 = 6SK7
CV1982 = 6SK7
CV1985 = 6SL7
CV1988 = 6SN7
CV1990 = 6SQ7
CV1991 = 6SQ7
CV1993 = 6SS7
CV1995 = 6ST7
CV1996 = 6ST7
CV2500 = 35Z4

CV2503 = 41MH
CV2504 = 41MWL
CV2505 = 41MPG
CV2506 = 41MPT
CV2508 = 41STH
CV2511 = 42DT
CV2512 = 420TDD
CV2514 = 43
CV2533 = 50
CV2534 = 50L6
CV2535 = 53
CV2537 = 55
CV2538 = 59
CV2541 = 71A
CV2544 = 78
CV2545 = 79
CV2548 = 84
CV2556 = 117L7
CV2557 = 117N7
CV2558 = 11726
CV2570 = 210HF
CV2571 = 210HL
CV2574 = 210VPA
CV2581 = 220OT
CV2640 = 405BU
CV2644 = 460BU
CV2645 = R1
CV2700 = 957
CV2701 = 958A
CV2704 = 7E5
CV2706 = 7C4
CV2707 = 1231
CV2709 = 1R4
CV2710 = 3D6
CV2716 = 6SC7
CV2718 = 1876
CV2808 = AC2PEN
CV2809 = AC5PEN
CV2811 = AC/HL
CV2812 = AC/HL
CV2813 = AC/HLDD
CV2815 = ACP
CV2822 = AC/SG
CV2830 = AC/TH1
CV2832 = AC/VP2
CV2833 = AF3
CV2860 = AZ1
CV2862 = AZ31
CV2874 = 1005
CV2875 = CL4
CV2912 = DL63
CV2925 = EBF2
CV2926 = EBL31
CV2929 = ECH3
CV2930 = ECH33
CV2938 = EL33
CV2941 = EL50
CV2954 = FC2A
CV2955 = FC4
CV2956 = FC13C
CV2985 = HD24
CV2991 = HL2
CV2994 = HL23
CV2996 = HL41DD
CV2999 = HL133DD
CV3502 = HL1320
CV3503 = HLDD1320
CV3515 = KB2
CV3516 = KK2
CV3531 = L2
CV3546 = MHD4
CV3553 = MS4B
CV3562 = MSP41
CV3571 = MVSPEN
CV3572 = MVSPENB
CV3576 = MX40
CV3582 = VP4B
CV3626 = PENB4
CV3630 = PEN44
CV3631 = PEN45DD
CV3638 = PENA4
CV3643 = PM2A
CV3647 = PM22A
CV3703 = SP4B
CV3704 = SP13C
CV3726 = TDD2A
CV3727 = TDD4
CV3735 = TP26
CV3751 = U21
CV3753 = U31
CV3758 = UR3C
CV3759 = R2
CV3787 = VP2
CV3788 = VP4
CV3790 = VP13C
CV3793 = VP23
CV3794 = VP210
CV3796 = VP1322
CV3818 = x22
CV3819 = X24
CV3820 = X24
CV3823 = X 41
CV3830 = XH1,5
CV3831 = XL2
CV3833 = XSG2,0
CV3836 = 221
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CY2 Ph Sup-112
CY31 Mu 2-38
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C30B Ev 7-53
C36A Ev 9-107
C36C Ev 9-107
C50B Ev 9-75
C50N Ev 9-75
C70D Ev 16-94
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C243N Ph 16-29
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DBC31 Ph 22-9
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DDD25 Ph 34-13
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DDT6S Tu 15-57
ED6 Tu 1-36
DD6 Fe 1-37
DD14 Fe 1-36
DD41 Ma 1-36
DD207 Ma 2-1
DD620 Ma 1-36
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DF91 Mu 12-18
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DH77 Mi 14-55
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DL67 Ph 3-23
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EAF42 Ph 28-84
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EBC3 Mu 15-57
EBC11 Ph 15-57
EBC33 Mu 15-57
EBC41 Ph 14-55
EBF1 Ph Sup-112
EBF2 Ph 30-85
EBF11 Ph 30-85
EBF15 Ph 18-80
EBF32 Ph 30-85
EBF35 Ph 30-85
EBF80 Ph 30-85
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EBL21 Ph 28-100
EBL31 Mu 28-100
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ECC32 Mu 21-60
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EFF51 Ph 27-84
EFM1 Ph 2-110
EFM11 Ph 2-110
EFP60 Ph 25-83
EF1 Te 9-75
EF2 Ph 2-70
EF3 Te 3-72
EF5 Ph 3-72
EF6 Ph 9-75
EF7 Te 9-75
EF8 Ph 35-87
EF9 Ph 2-70
EF11 Ph 2-70
EF12 Ph 9-75
EF13 Ph 2-70
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EF36 Mu 9-75
EF37 Mu 9-75
EF39 Mu 2-70
EF40 Ph 9-75
EF41 Ph 2-70
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EM4 Ph 1-110
EM11 Ph 1-110
EM34 Mu 1-110
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EQ80 Ph 11-109
EY1 Ph 8-41
EY51 Mu 8-41
EY80 Ph 3-39
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EZ2 Ph 10-43
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HL23	Ma	13-6	KF2	Ph	14-18	LV16	Te	22-82	NR43	= PM24A	
HL23DD	Ma	23-9	KF3	Ph	7-16	L2	Ma	13-6	NR44	= pX4	
HL41	Ma	7-53	KF4	Ph	7-16	L4	Fe	10-54	NR45	= VMP4G	
HL41DD	Ma	17-58	KF35	Mu	10-17	L42MD	Fe	3-89	NR46	= D41	
HL42DD	Ma	17-58	KH1	Ph	4-33	L63	Os	4-52	NR47	= PX25	
HL133DD	Ma	17-58	KK2	Ph	5-33	L77	Os	4-52	NR48	= EBC33	
HL1320	Ma	7-53	KK32	Mu	5-33	L410	Va	26-10	NR49	= EF36	
HM20	Mp	4-51	KLL32	Mu	22-31	L413	Va	27-11	NR55	= 4D1	
HPS4A	Mp	3-72	KL1	Ph	16-29	L414	Tu	27-11	NR56	= DA30	
HPS15U	Mp	3-72	KL2	Ph	9-26	L414	Va	26-10	NR57	= ML4	
HP2	Fe	33-13	KL4	Ph	9-26	L491D	Va	1-88	NR59	= KT41	
HP4A	Mp	9-76	KL5	Ph	7-25	L495D	Va	9-92	NR61	= W42	
HP13U	Mp	9-76	KL35	Mu	16-29	L496D	Va	5-90	NR65	= MSP4	
HP2018	Tu	9-76	KTW61		3-72	L510D	Va	8-25	NR66	= D41	
HP2118	Tu	2-70	KTW63	Os	2-71	L4150D	Va	3-89	NR67	= 6L7	
HP4100	Tu	9-76	KT241	Os	22-82	ME4	Tu	1-110	NR68	= 6Q7	
HP4105	Tu	2-70	KT263	Os	5-74	ME6	Tu	Sup-112	NE70	= MS/PEN	
HP4115	Tu	2-70	KT2	Os	16-29	ME41	Ma	2-110	NE71	= MS/PEN	
HR2	Fe	9-42	KT24	Os	16-29	ME91	Ma	2-110	NE73	= 6N7	
HR4	Fe	7-41	KT32	Os	19-97	MHD4	Os	15-57	NE74	= AC6PEN	
HR406	Tu	12-6	KT33C	Os	18-96	MHL4	Os	4-52	NE76	= KT241	
HR410	Tu	12-6	KT36	Mi	19-97	MH4	Os	7-53	NE77	= 6L6	
HSD	Fe	18-58	KT41	Os	17-95	MH41	Os	9-54	NE78	= 6C5	
HVR1	Mu	9-42	KT44	Os	39-103	MKT4	Os	5-90	NE81	= 6K7	
HVR2	Mu	9-42	KT45	Os	39-103	MKT4/7		5-90	NE82	= X65	
HVR2A	Mu	9-42	KT61	Os	17-95	ML4	Os	6-52	NE83	= 6J7	
H4	Sa	11-5	KT63	Os	5-90	MP/PEN	Co	5-90	NE86	= KTW63	
H4D	Fe	17-58	KT66	Os	18-96	MS/PEN	Co	13-78	NE87	= AC5PENDD	
H63	Os	3-51	KT71	Os	19-97	MS/PENB	Co	13-78	NSS42	Sa	9-76
H406D	Va	11-17	KT76	Os	7-91	MSP4	Os	9-76	NSS43	Sa	9-76
H410D		11-17	KT81	Os	17-95	MSP4/5		9-76	NSS44	Sa	36-87
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H426N	Tr	36-87	K23B	Ev	22-9	MS4B	Os	14-78	NT82	= PM202	
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H2518d	Va	9-76	K40N	Ev	4-15	MVSPENB	Co	2-71	NV183	Sa	2-71
H2618D	Va	2-70	K50M	Ev	4-15	MX40	Os	5-106	NW4	Sa	1-50
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KCF30	Mu	7-34	LL610	Sa	8-25	NP43	Sa	5-90	OM6	Co	2-71
KCH1	Ph	9-35	LP2	Os	28-11	NR26	= MHL4		OM10	Co	9-108
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015/400	Tu	36-65	PX4	Os	42-67	RES105	Te	8-25		Te	3-14
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0202	Tr	5-34	PY31	Mu	3-39	RES174d	Te	8-25		Te	3-14
0408		5-106	PY80	Ph	3-39	RES212	Te	16-29	RV12H300	Te	2-104
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PA1	Br	44-68	P230	Mu	12-46	RES664d	Te	1-88		Te	5-74
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PENB4	Mu	18-96	P25/500	Tu	38-66	REC84	Te	11-5		Te	9-76
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	Ma	26-99	P41	Ma	10-54	REC124	Te	26-10		Te	9-76
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PEN25	Ma	16-29	P225	Tr	16-29	RGN504	Te	10-43	RV239	Tu	30-53
PEN36C	Mu	16-94	P226	Tr	9-26	RGN1054	Te	10-43	RV258	Te	35-65
PEN44	Ma	18-96	P410	Tu	26-10	RGN1064	Te	11-45	R1	Br	10-43
PEN45	Ma	17-95	P414	Tu	26-10	RGN1404	Te	6-41	R2	Br	11-45
PEN45DD	Ma	28-100	P422	Tr	3-89	RGN1503	Te	10-43	R3	Br	12-46
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PEN3820	Ma	19-97	P440N	Tr	3-89	RG12D60	Te	10-43	R42	Da	11-45
PL33	Mu	17-95	P441N	Tr	5-90	RG12D300	Te	14-48	R52	Fe	11-45
PL38	Mu	22-98	P460	Tr	34-64	RL7	= EF54		R2018D	Tu	4-52
PL81	Pu	38-103	P469	Tr	18-96	RL12T1	Te	23-61	SD	Fe	1-36
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PM2	Mu	9-5	P496	Tr	17-95	RL37		27-62	SD6	Co	2-37
PM2A	Mu	28-11	P520	Tr	8-25	RO337	Re	10-43	SPT2	Fe	4-15
PM2B	Mu	33-13	P626	Tr	5-90	RO423	Re	10-43	SP2	Mu	14-18
PM2HL	MU	13-6	P628	Tr	5-90	RO431	Re	12-46	SP4	Mu	9-76
PM12M	Mu	4-15	P1320	Tr	3-89	RO433	Re	13-47	SP4	Tu	9-76
PM22A	Mu	16-29	P2060	Tr	8-92	RO446	Re	10-43	SP4B	Tu	10-77
PM24A	Mu	3-89	P2460	Tr	8-92	RO452	Re	13-47	SP6	Co	20-81
PM24M	Mu	5-90	P3580	Tr	16-94	RO457	Re	11-45	SP13C	Mu	10-77
PM202	Mu	31-12	P4100	Tu	36-65	RO481	Re	6-41	SP13	Mu	9-76
PP3/250	Ma	42-67	QPT2	Os	22-31	RO534	Re	11-45	SP41	Ma	20-81
PP5/400	Ma	43-68	QP21	Os	22-31	RO771	Re	6-41	SP42	Ma	22-82
PP222	Tu	16-29	QP22B	Mu	22-31	RO4109	Vi	= A409	SP61	Ma	20-81
PP431	Tu	3-89	QP25	Ma	22-31	RO4125	Vi	= A425	SP181	Ma	20-81
PP4100	Tu	1-88	QP230	Ma	22-31	RO4142	Vi	= A442	SP210	Ma	14-18
PP4101	Tu	5-90	RD12P6	Te	9-76	RO4206	Vi	= B406	SU25	Co	8-41
PTA	Fe	5-90	RENS1214	Te	1-70	RO4215	Vi	= A415	SU2150A		9-42
PTSD	Fe	28-100	RENS1234	Te	36-87	RO4243	Vi	= B443	SU2150	Co	8-41
PT2	Fe	16-29	RENS1284	Te	9-76	RO4305	Vi	= B405	SU3130	Co	8-41
PTZ	Fe	17-95	RENS1374d			RO4324	Vi	=B424	S11A	Ev	10-43
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PT4D	Fe	28-100	RENS1384	Te	3-89	RRAF	Fi	11-5	S30C	Ev	42-67
PT5		17-95	RENS1884	Te	9-76	RREF	Fi	11-5	S30D	Ev	42-67

S207	Tr	11-17	T136	Pi	11-6	UM4	Ph	1-110	UY133A	jap.	= 33
S209	Tr	7-16	T204	Tr	13-6	UM11	Te	1-110	UY224	jap.	= 24A
S210	Tu	4-15	T435	Tr	4-52	UM34	Mu	1-110	UZ6C6	jap.	= 6C6
S214		14-19	T635	Tr	6-52	UM051	Sa	5-106	UZ6D6	jap.	= 6D6
S218	Tr	14-19	T1335	Tr	4-52	UP6	Ox	16-94	UZ41	jap.	= 41
S310A	Sw	8-75	UAA11	Te	1-36	UP13		16-94	UZ42	jap.	= 42
S311A	Sw	6-91	UAF21	Te	Sup-112	UP35U	Mp	16-94	UZ43	jap.	= 43
S328A	Sw	8-75	UAF41	Ph	28-84	UB1C	Mu	2-38	UZ55	jap.	= 55
S329A	Sw	6-91	UAF42	Ph	28-84	UR2	Mu	3-39	UZ57	jap.	= 57
S329L	Sw	6-91	UBC41	Mu	14-55	UR3C	Mu	11-45	UZ78	jap.	= 78
S406/7	Tu	11-17	UBF2	Te	30-85	US6A8	jap.	= 6A8	UZ85	jap.	= 85
S408	Tr	11-17	UBF11	Ph	30-85	US6B8	jap.	= 6B8	U4B	Mp	41-67
S409	Tr	11-17	UBF15	Te	18-80	US6C5	jap.	= 6C5	U4F	Mp	41-67
S410	Tu	11-17	UBF80	Ph	30-85	US6J5	jap.	= 6J5	U4H	Mp	36-65
S410N	Tr	4-73	UBL1	Ph	29-100	US6J7	jap.	= 6J7	U10	Os	10-43
S412N	Tr	4-73	UBL3		29-100	US6K7	jap.	= 6K7	U12	Os	11-45
S415N	Tr	1-70	UBL21	Ph	29-100	US6Q7	jap.	= 6Q7	U12/14	Os	12-46
S424	Tr	9-76	UCF12		6-106	US6V6	jap.	= 6V6	U14	Os	12-46
S430N	Tr	9-76	UCH4	Ph	10-109	UTH4	Ox	10-109	U16	Os	9-42
S431N	Tr	9-76	UCH5		10-109	UTH12	Ox	9-108	U17	Os	7-41
S432	Tr	3-72	UCH11	Te	9-108	UTH13	Ox	9-108	U18	Os	14-48
S434N	Tr	2-71	UCH21	Ph	10-109	UT2	Ox	4-52	U18/20	Os	14-48
S435N	Tr	9-76	UCH41	Ph	8-107	UT6A7	jap.	= 6A7	U21	Ma	9-42
S617	Tr	3-72	UCH42	Mu	9-108	UT6F7	jap.	= 6F7	U22	Ma	9-42
S620	Tr	9-76	UCH42	Ph	9-108	UU5	Ma	12-46	U24	Ma	8-42
S628	Tr	2-71	UCL11	Te	32-101	UU6	Ma	11-45	U31	Os	3-39
S629	Tr	9-76	UDDL71		29-109	UU8	Ma	13-47	U33	Mi	9-42
S1323	Tr	3-72	UDD51	Sa	1-36	UU9	Ma	11-45	U37		8-42
S1324	Tr	9-76	UDP12	Ox	29-100	UVG51	Sa	3-39	U50	Os	11-45
S1327	Tr	2-71	UDP13	Ox	29-100	UX1A4	jap.	= 1A4P	U52	Os	14-48
S1328	Tr	9-76	UDP14	Ox	29-100	UX1B4	jap.	= 1B4P	U71	Os	2-38
S2035N	Tr	9-76	UDT1	Ox	15-57	UX1F4	jap.	= 1F4	U76	Os	3-39
S2043N	Tr	2-71	UEL51	RFT	Sup-112	UX30M	jap.	= 30	U81	Os	13-47
S4020A	Sw	4-3				UX45	jap.	= 45	U82	Os	2-38
S4020B	Sw	4-3	UEL11	Te	33-101	UX71A	jap.	= 71A	U84	Os	2-38
S4021A	Sw	16-7	UEP51	Sa	3-72	UX199	jap.	= X99	U101	Mi	3-39
S4021B	Sw	16-7	UE1	Ox	2-38	UY1(N)	Ph	3-39	U107	Os	2-38
S4022AR	Sw	14-7	UE2	Ox	3-39	UY3	Va	3-39	U142	Mi	2-38
S4022B	Sw	14-7	UE13	Ox	2-38	UY4	Va	2-38	U143	Mi	11-45
TDD2A	Mu	22-9	UE100	Ox	3-39	UY11	Te	3-39	U145	Mi	2-38
TDD4	Mu	15-57	UFM11	Te	2-111	UY21	Mu	3-39	U147		10-43
TH2	Mu	9-35	UF5	Ph	2-71	UY24B	jap.	= 24A	U149	Os	10-43
TH4B	Mu	10-109	UF6	Ph	9-76	UY27	jap.	= 27	U201	Ma	2-38
TH21C	Mu	10-109	UF9	Te	2-71	UY27	jap.	= 27	U403	Ma	3-39
TH30C	Mu	10-109	UF11	Te	2-71	UY33	jap.	= 33	U404	Ma	2-38
TH41	Mu	10-109	UF14	Te	20-81	UY36	jap.	= 36	U801		4-40
TH233	Ma	10-109	UF15	Te	18-80	UY36A	jap.	= 36	U4020	Ma	3-40
TH2321	Ma	10-109	UF21	Ph	2-71	UY37	jap.	= 37	VCH11	Te	9-108
TK406	Tr	2-111	UF41	Ph	2-71	UY37A	jap.	= 37	VCL11	Te	31-101
TK606	Tr	2-111	UF42	Ph	20-81	UY38	jap.	= 38	VC1	Te	7-53
TK607		2-111	UHF51	Sa	9-76	UY38A	jap.	= 38	VEG51	Sa	2-39
TP22	Ma	7-34	UHF52	Sa	9-76	UY39	jap.	= 39	VEL11	Te	33-101
TP23	Ma	7-34	UH3	Ox	3-72	UY39/44	jap.	= 39	VF3	Te	2-71
TP25	Ma	7-34	UH7	Ox	9-76	UY39A	jap.	= 39	VF7	Te	9-76
TP26	Ma	7-34	ULP51	Sa	8-92	UY41	Ph	2-38	VF14	Te	20-81
TP2620	Ma	34-86	ULP61	Sa	16-94	UY42	Ph	2-38	VG406	Sa	10-43
TT4		6-52	UL2	Ph	10-92	UT47	jap.	= 47	VG410	Sa	10-43
TT210	Tr	33-13	UL12	Te	22-98	UT56	jap.	= 56	VG411	Sa	11-45
TT3U	Mp	4-52	UL41	Ph	19-97	UT76	jap.	= 76	VG420	Sa	12-46

VG421	Sa	13-47	VR67	=	6J5	VT86/A	=	6K7	VT180	=	3LF4
VG2503	Ho	10-43	VR82	=	220TH	VT87/A	=	6L7	VT181	=	7Z4
VG2908	Ho	10-43	VR91	=	EF50	VT88A/B	=	R67	VT182	=	3B7
VG3008	Ho	10-43	VR91A	=	EF50	VT89	=	89	VT183	=	1R4
VG3060		12-46	VR92	=	EA50	VT90/A	=	6H6	VT185	=	3D6
VG3630		13-47	VR95	=	954	VT91/A	=	6J7	VT188	=	7B6
VG5006	Ho	11-45	VR95A	=	954	VT92/A	=	6Q7	VT189	=	7F7
VG5007		11-45	VR106	=	9D2	VT93/A	=	6B8	VT190	=	7H7
VG5107		11-45	VR107	=	15D2	VT94A-D	=	6J5	VT192	=	7A4
VHTA	Fe	5-106	VR108	=	8D2	VT96	=	6N7	VT193	=	7C7
VHTS	Fe	5-106	VR109	=	4D1	VT97	=	5W4	VT194	=	7J7
VHT2	Fe	5-34	VR109A	=	4D1	VT98	=	6U5	VT195	=	100S
VHT2A	Fe	5-34	VR117	=	41MTL	VT99	=	6F8	VT196	=	6W5
VL561	Br	9-42	VR119	=	DDL4	VT103	=	6SQ7	VT197A	=	5Y3
VL1	Te	5-90	VR122	=	41MXP	VT104	=	12SQ7	VT198A	=	6G6
VL4	Te	16-94	VR123	=	EF8	VT105	=	6SC7	VT199	=	6SS7
VMP4G	Os	3-72	VR124	=	MS/PEN	VT107/A-B	=	6V6	VT201/C	=	25L6
VMS4	Os	3-72	VR125	=	MS/PENB	VT112	=	6AC7	VT202	=	9002
VMS4B	Os	3-72	VR129	=	MS/PEN	VT114	=	5T4	VT203	=	9003
VPTA	Fe	2-71	VR130	=	HL23	VT115/A	=	6L6	VT205	=	6ST7
VPTS	Fe	2-71	VR136	=	EF54	VT116/A-B	=	6SJ7	VT206A	=	5V4
VPT2	Fe	4-15	VR137	=	EC52	VT117/A	=	6SK7	VT207	=	12AH7
VPT4	Fe	2-71	VR502	=	KT32	VT119	=	2X2	VT208	=	7B8
VPT4B	Fe	2-71	VR505	=	MH41	VT120	=	954	VT209	=	12SC7
VP2	Mu	4-15	VS2	Fe	4-15	VT121	=	955	VT210	=	1S4
VP2B	Mu	4-15	VT20	=	220P	VT124	=	1A5	VT211	=	6SC7
VP4	Mu	2-71	VT23	=	230XP	VT125	=	1C5	VT213A	=	6L5
VP4A	Mu	2-71	VT24	=	864	VT126/A/B	=	6X5	VT214	=	12H6
VP4B	Mu	11-77	VT26	=	22	VT127	=	PEN46	VT215	=	6E5
VP12D	Fe	29-84	VT27	=	30	VT131	=	12SK7	VT221	=	3Q5
VP13A	Mu	2-71	VT28	=	24A	VT132	=	12K8	VT223	=	1H5
VP13C	Mu	11-77	VT30	=	O1-A	VT133	=	12SR7	VT229	=	6SL7
VP23	Ma	14-19	VT33	=	33	VT134	=	12A6	VT231	=	6SN7
VP41	Ma	11-77	VT36	=	36	VT135/A	=	12J5	VT233	=	6SR7
VP133	Ma	3-72	VT37	=	37	VT138	=	1629	VT237	=	957
VP210	Ma	4-15	VT38	=	38	VT145	=	523	VT238	=	956
VP1322	Ma	11-77	VT40	=	40	VT146	=	1N5	VT239	=	1LE3
VR18	=	215SG	VT45	=	45	VT147	=	1A7	VT241	=	7E5
VR19	=	PM2	VT46	=	PT25H	VT148	=	1D8	VT243	=	7C4
VR21	=	210LF	VT47	=	47	VT149	=	3A8	VT244	=	5U4
VR22	=	220PA	VT48	=	41	VT150/A	=	6SA7	VT247	=	6AG7
VR27	=	210LF	VT50	=	50	VT151/B	=	6A8	VT250	=	EF50
VR35	=	QP21	VT52	=	EL32	VT152/A	=	6K6	VT264	=	3Q4
VR37	=	MH4	VT65	=	6C5	VT153	=	12C8	VT268	=	12SC7
VR38	=	MHL4	VT65A	=	6C5	VT161	=	12SA7	VT288	=	12SH7
VR40	=	PX25	VT66	=	6F6	VT162	=	12SJ7	VT289	=	12SL7
VR41	=	PM12M	VT66A	=	6F6	VT163	=	6C8	VW42	=	210LF
VR43	=	210PG	VT68	=	6B7	VT167/A	=	6K8	VY1	Te	2-38
VR44	=	210DDT	VT69	=	6D6	VT168A	=	6Y6	VY2	Te	2-38
VR49	=	210SPT	VT70	=	6F7	VT169	=	12C8	V41	SIF	10-43
VR53	=	EL32	VT73	=	6P5	VT170	=	1E5	V51	SIF	11-45
VR54	=	EB34	VT74	=	524	VT171	=	1R5	V61		10-43
VR55	=	EBC33	VT75	=	KT66	VT172	=	1S5	V99	Sy	2-2
VR56	=	EF36	VT75A/B	=	KT44	VT173	=	1T4	V311	Ma	2-38
VR57	=	EK32	VT76	=	76	VT174	=	3S4	V312	Ma	2-39
VR59	=	955	VT78	=	78	VT176	=	6AB7	V312	Ma	7-53
VR65	=	SP41	VT80	=	80	VT177	=	1LH4	V503	Ma	45-68
VR65A	=	P61	VT83	=	83	VT178	=	1LC6	V914	Ma	1-36
VR66	=	P41	VT84	=	624	VT179	=	1LN5	V4200	Tu	6-41

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W17	Os	12-18	X22	Os	5-34	1E5GP	Sy	2-14	1T4/1T4T	Sy	12-18
W21	Os	4-15	X24	Os	9-35	1E7G	Sy	22-31	1T5GT	Sy	7-25
W42	Os	3-72	X30	Os	5-106	1E8	Sy	1-32	1T6	Sy	17-20
W61	Os	3-72	X41	Os	9-108	1FD9	Ma	18-20	1U4	Sy	8-16
W76	Os	2-71	X61M	Os	9-108	1F2	Ma	12-18	1U5	Sy	18-20
W77	Mi	3-72	X63	Os	5-106	1F3	Ma	12-18	1U6		3-33
W81	Os	3-72	X65	Os	9-108	1F4	Sy	12-27	1V2		8-42
W101	Os	3-72	X76M	Os	9-108	1F5G	Sy	12-27	1V5	Sy	6-24
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W143	Mi	2-71	X81/M	Os	9-108	1F7G/GT	Sy	20-21	1W5	Sy	9-17
W145	Mi	3-72	X99	Sy	2-2	1F7GV	Sy	20-21	1X2	TS	8-42
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W406	Va	11-6	X147		9-108	1H5G/GT	Sy	18-8	2B25	Ra	Sup-112
W411	Va	15-7	X148	Mi	9-108	1H6G	Sy	20-8	2C51	Ra	Sup-112
W412	Tr	11-6	X4123	Va	36-87	1J5G	Sy	16-29	2D4A	Mu	1-36
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W4080	Va	1-50	ZD	Fe	1-36	1K5B	Sup-112		2E32	Ra	6-16
W4110	Va	3-53	ZD2	Tr	9-5	1K6	Sup-112		2E35	Ra	3-23
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6AQ6	Sy	14-55	6D6	Sy	3-72	6Q6G	Us	14-56	6Y7G	Sy	47-69
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7D6	Br 20-97	12BD6	Sy 3-72	14F8	Sy 21-60	25Z5	Sy 10-44
7D7	GE 7-107	12BE6	Sy 1-104	14H7	Sy 15-79	25Z6G/GT	Sy 10-44
7D8	Br 20-97	12BF6	Sy 16-58	14J7	GE 7-107	26A6	RCA 15-79
7E5	Sy 25-61	12BH7	Sy Sup-112	14N7	Sy 21-60	26A7GT	Sy 36-102
7E6	Sy 16-58	12BK6	14-56	14Q7	Sy 1-104	26B	2-50
7E7	Sy 29-85	12BT6	14-56	14R7	Sy 29-85	26BK6	Sy Sup-112
7F7	Sy 19-59	12BU6	16-58	14S7	Sy 7-107	26C6	RCA 16-58
7F8	Sy 21-60	12B7	3-72	14V7	US 17-80	26G6	RCA Sup-112
7G7	Sy 15-79	12B8GT	Sy 32-86	14W7	Sy 17-80	26D6	RCA 1-104
7H7	Sy 15-79	12C	20-59	14X7	NU 14-56	27S/HM	Sy 2-50
7J7	Sy 7-107	12C8	Sy 29-85	14Y4	Sy 10-44	27SV	Co 4-40
7K7	Sy 14-56	12C8Y	29-85	1423	Sy 2-39	28D7	Sy 36-102
7L7	Sy 14-78	12E5GT	GE 2-50	15	Sy 3-14	2825	GE 11-45
7N7	Sy 21-60	12F	2-39	15A2	Br 3-105	30	Sy 2-2
7Q7	Sy 1-104	12F5GT	Sy 3-51	15D1	Br 3-105	30GP9	8-92
7R7	Sy 29-85	12H6	Sy 2-37	15D2	Br 3-105	32L7GT	Sy 24-99
7S7	Sy 7-107	12J5GT	Sy 16-58	18	Sy 5-91	33	Sy 5-91
7T7	Sy 15-79	12J7GT	Sy 5-74	19	Sy 33-13	34P1	2-88
7V7	Sy 17-80	12K7GT	Sy 3-72	19AG5	17-95	35A5	Sy 13-93
7W7	Sy 17-80	12K8/G	Sy 7-107	19EG6G	GE 37-102	35A5/LT	US 13-93
7X6	10-44	12L8GT	Sy 35-102	19J6	RCA 29-63	35B5	Sy 12-93
7X7	Sy 14-56	12Q7GT	Sy 14-56			35Q5	RCA 12-93
7Y4	Sy 10-44	12SA7G/GT	Sy 1-104			35L6G/GT	Sy 13-93
7Z4	Sy 10-44	12SC7	Sy 19-59			35RE	Br 10-44
8A1	Br 14-78	12SF5	Sy 3-51			35W4	Sy 2-39
8D2	Br 5-74	12SF7	Sy 28-84			35Y4	2-39
8D3	Br 20-81						
8D5	9-77						

35Z3	Sy 2-39	63ME	Co 2-111	225DU	Co 17-49	1851GT	Fi 21-82
35Z3LT	Sy 2-39	63SPT	Co 18-80	230XP	Co 30-12	1852GT	17-80
35Z4GT	Sy 2-39	64ME	Co 2-111	240QP	Mu 22-31	1852	US 21-82
35Z5GT	Sy 2-39	70A7GT	Sy 25-99	354V	Mu 7-53	1853	US 17-80
35Z6G	GE 10-44	70L7GT	Sy 25-99	402P	Co 44-68	1875	Ph Sup-112
36	Sy 4-73	71A	Sy 34-64	402PEN	Co 17-96	1876	Ph Sup-112
37	Sy 2-50	75M	Ro 14-56	402PENA	Co 19-97	1877	Ph 9-42
38	Sy 5-91	75S	Sy 14-56	405BU	Co 16-49	1878	Ph Sup-112
39A	Sy 3-73	76	Sy 2-50	441U	12-46	1882	Ph 11-46
39/44	3-73	77	Sy 5-74	442BU	Co 11-45	1883	Ph Sup-112
40SUA	Co 2-39	78	Sy 3-73	420T	US 17-95	2101	US 16-29
40Z5	Sy 2-39	79	Sy 47-69	420T4d	US 26-99	2102	Co 22-9
41	Sy 3-89	80	Sy 13-47	450U	14-48	2103	US 22-31
41FP	Co 6-52	80BK	5-40	460BU	Co 12-46	2151	US 5-91
41MH	Co 9-54	80K	11-46	485	Sy 2-50	4610	US 4-73
41MHF	Co 7-53	80M	Sy 13-47	506	Ph 10-44	4613	Ph 37-65
41MHL	Co 7-53	81M	Sy 6-41	506BU	Ph 10-44	4614	Ph 2-50
41MP	Co 10-54	82	Sy 13-47	511D	11-46	4623	Ph 2-37
41MPG	Co 3-105	83	Sy 13-47	864	Sy 2-2	4624	Ph 35-65
41MPT	Co 17-80	83V	Sy Sup-	879	US 9-42	4636	Ph 9-77
41MTL	Co 5-52		112	950	Sy 16-29	4650	Ph 9-92
41MXP	Co 44-68	84	US 10-44	951	Sy 2-14	4652	Ph 13-47
41STH	Co 9-108	85AS	Sy 15-57	954	Sy 5-74	4654	Ph 18-96
42	Sy 5-91	85S	NU 13-55	955	GE 22-60	4654K	Ph 18-96
42MPT	Co 20-81	89	Sy 5-91	956	Sy 2-71	4654P	Ph 18-96
42SPT	Co 23-82	99V	US 2-2	957	Sy 8-4	4671	Ph 22-60
43	US 4-89	99X	US 2-2	958A	GE 10-5	4672	Ph 26-83
44	Sy 3-73	117L7GT	RCA 25-99	1003	Ph 10-44	4673	Ph 18-80
45	Sy 31-63	117M7GT	US 25-99	1005	Ra 11-46	4675	Ph 22-60
45Z3	Sy Sup-112	117N7GT	Sy 25-99	1103	14-56	4676	Ph 26-83
45Z5	Sy Sup-112	117P7GT	Sy 27-99	1201	Sy 10-44	4682	Ph 5-91
46	Sy Sup-112	117Z3	Sy 2-39	1201	US 25-61	4683	Ph 42-67
47	Sy 5-91	117Z4GT	GE 2-39	1203A	Sy 2-37	4684	Ph 17-96
47B	2-88	117Z6G/GT	Sy 10-44	1204	Sy 9-77	4688	Ph 18-96
48	Sy 8-92	142BT	Co 7-91	1221	Sy 5-74	4689	Ph 18-96
50	Sy 31-63	183/483	Sy 31-63	1223	Sy 5-74	4689K	Ph 18-96
50A5	Sy 13-93	185BT	39-103	1230	US 2-2	4689P	Ph 18-96
50B5	Sy 12-93	202DDT	Co 15-57	1231	Sy 17-80	4694	Ph 17-96
50C5	RCA 12-93	202STH	Co 9-108	1232	15-79	4695	Ph 3-73
50C6G/GT	Sy 16-95	202THA	Co 9-108	1247	Sy 2-37	4696	Ph 24-83
50L6G/GT	Sy 16-95	202VP	Co 2-71	1273	Sy 5-74	4699	Ph 22-98
50X6	Sy 10-44	202VPB	Co 2-71	1274	10-44	4699M	Ph 22-98
50Y6	RCA 10-44	203THA	Co 9-108	1275	Sy 14-48	5590	US 10-77
50Y7GT	Sy 10-44	210DDT	Co 19-8	1276	Sy 42-67	5591	US 16-79
5026	Sy 13-47	210HF	Co 13-6	1280	Sy 5-74	5670	US Sup-112
5027G	Sy 10-44	210HL	Co 13-6	1291	Sy 34-13	5679	GE 2-37
52KU	Co 13-47	210LF	Co 4-3	1293	Sy Sup-112	5691	RCA 19-59
53	Sy 47-69	210PG	Co 5-34	1294	Sy 1-1	5692	RCA 21-60
54KU	Co 13-47	210PGA	Co 5-34	1299	Sy 14-28	5693	RCA 2-71
55	Sy 13-55	210SPG	Co 5-34	1560	Ph 11-46	5751	Hy Sup-112
55S	Sy 13-55	210SPT	Co 14-19	1561	Ph 12-46	5814	Hy Sup-112
56A	US 2-50	210VPA	Sy 14-19	1562	Ph 6-41	5919	2-71
56AS	Sy 2-50	215P	Co 29-11	1603T	US 5-74	6302	21-82
56S	Sy 2-50	215SG	Co 14-19	1612	Sy 3-105	6304	20-92
57AS	Sy 5-74	210-OT	Co 16-29	1629	Sy 1-110	7700	US 5-74
57S	Sy 5-74	220P	Co 29-11	1801	Ph 10-44	8016	RCA 8-42
58AS	Sy 6-74	220PA	Co 29-11	1805	Ph 11-46	9001	Sy 5-74
59	Sy 5-91	220PT	Co 15-28	1815	Ph 13-47	9002	Sy 15-57
61BT	Co 38-103	220TH	Co 9-35	1817	Ph 13-47	9003	Sy 3-73
61SPT	Co 40-103			1832	Ph 6-41		

VALVOLE PER APPARECCHI ALIMENTATI CON BATTERIA

DIODI

BATT. HF DIODE (FOR MEASUREMENTS) — 1

S mA/V	μ	V_{g1} V	V_{g2} V	V_a V	J_a mA	J_{g2} mA		
				125	0,3			

Type	Base No.	Base Pin Connections	J_f A	V_f V	Notes
DA50	45	f-d-f	0,3	1,2	
DA90	6	f-a-k-x-x-a-f	0,15	1,4	
1A3	6	f-a-k-x-x-a-f	0,15	1,4	
1R4	2	f-x-x-a-x-x-k-f	0,15	1,4	
1294	2	f-x-x-a-x-x-k-f	0,15	1,4	1)

1) Va = 30.

BATT. DOUBLE DIODE — 2

S mA/V	μ	V_{g1} V	V_{g2} V	V_a V	J_a mA	J_{g2} mA		
				125	0,5			

Type	Base No.	Base Pin Connections	J_f A	V_f V	Notes
D200	18	f-f-d2-d1-k-x	0,1	2	
D201	18	f-f-d2-d1-k-x	0,1	2	
DD207	11	f-d1-f-d2	0,075	2	
KB1	18	f-f-d2-d1-k-x	0,095	2	
KB2	18	f-f-d2-d1-s-x	0,09	2	

TRIODI

BATT. TRIODE — 1

S mA/V	μ	V_{g1} V	V_{g2} V_c	V_a V	J_a mA	J_{g2} mA		
0,2	20	0		45	0,15			

Type	Base No.	Base Pin Connections	J_f A	V_f V	Notes
CK509AX	47	f-g1-f-a	0,03	0,6	
CK515BX	47	f-g1-f-a	0,03	0,625	

BATT. TRIODE — 2

S mA/V	μ	V_{g1} V	V_{g2} V	V_a V	J_a mA	J_{g2} mA		
0,43	6	-4,5		90	2,5			

Type	Base No.	Base Pin Connections	J_f A	V_f V	Notes
V99	16	a-f-f-g1	0,063	3,3	
X99	16	f-a-g1-f	0,063	3,3	
1H4G	1	x-f-a-x-g1-x-f-x	0,06	2	1)
30	16	f-a-g1-f	0,06	2	1)
99V	16	g1-f-a-f	0,063	3,3	
99X	16	f-a-g1-f	0,063	3,3	
864	16	f-a-g1-f	0,25	1,1	
1230	16	f-a-g1-f	0,06	2	1)

1) S = 0,8.

BATT. TRIODE 3

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,5	15	-0,5		50	0,6			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
00A	16	f-a-g-f	0,25	5	1)
XD1,5V	31	g1-f-f-a	0,08	1,5	
XD2,0V	31	g1-f-f-a	0,08	2	
XH1,5V	31	g1-f-f-a	0,075	1,5	
XH2,0V	31	g1-f-f-a	0,08	2	
XL1,5V	31	g1-f-f-a	0,08	1,5	
XL2,0V	31	g1-f-f-a	0,08	2	2)
XL01,5V	31	g1-f-f-a	0,08	1,5	
XL02,0V	31	g1-f-f-a	0,08	2	2)

1) Ja = 1,5. 2) S = 0,8. Ja = 1.

BATT. TRIODE 4

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,6	26	-1		130	1,3			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
S4020A	16	f-a-g1-f	0,25	2	
S4020B	11	f-g1-f-a	0,25	2	
210LF	11	fs-g1-f-a	0,1	2	1)

1) μ = 13. Vg1 = -3.

BATT. TRIODE 5

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,75	8	-4,5		90	3			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
01	16	f-a-g1-f	1	5	
01-A	16	f-a-g1-f	0,25	5	
01-AA	16	f-a-g1-f	0,25	5	
01-B	16	f-a-g1-f	0,125	5	
1G4G	1	s-f-a-x-g1-x-f-x	0,05	-1,4	
1G4GT	1	s-f-a-x-g1-x-f-x	0,05	1,4	

BATT. TRIODE 6

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,75	15	-3		90	1,5			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
1E4G	1	s-f-a-x-g1-x-f-x	0,05	1,4	
1LE3	1	f-a-x-x-x-g1-f	0,05	1,4	
1LF3	1	f-a-x-x-x-g1-f	0,05	1,4	

BATT. TRIODE 7

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,8	5,5	-4		50	1,8			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
XP1,5V	31	g1-f-f-a	0,08	1,5	
XP2,0V	31	g1-f-f-a	0,08	2	

BATT. TRIODE 8

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,9	15	-5		120	2			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DC11	4	g1-fm-x-f-fm-x-s-x	0,025	1,4	
DC25	2	fs-a-x-x-fs-g1-x-f	0,025	1,4	
957	24	f-a-g1-f-io	0,05	1,25	

BATT. TRIODE — 9

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,2	8	-9		135	5			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
A409	11	fs-g-f-a	0,065	4	
H412	11	fs-g-f-a	0,065	4	
PM2	11	fs-g-f-a	0,15	4	
ZD2	11	fs-g-f-a	0,15	4	

BATT. TRIODE — 10

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,2	12	-7,5		135	3			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
958A	24	f-a-g1-f-1c	0,1	1,25	

BATT. TRIODE — 11

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,3	17	-4		135	4			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
A214	11	fs-g1-f-a	0,1	2	
A408	11	fs-g1-f-a	0,08	4	
A415	11	fs-g1-f-a	0,085	4	
A420	11	fs-g1-f-a	0,085	4	
A425	11	fs-g1-f-a	0,065	4	
B217					
B424	11	fs-g1-f-a	0,1	4	
G407	11	fs-g1-f-a	0,06	4	
G409	11	fs-g1-f-a	0,08	4	
H4	11	fs-g1-f-a	0,1	4	
084	11	fs-g1-f-a	0,08	4	
RE074	11	fs-g1-f-a	0,06	4	
RE084	11	fs-g1-f-a	0,08	4	
RRAF	11	fs-g1-f-a	0,08	4	
RRBF	11	fs-g1-f-a	0,06	4	3)
RT2	11	fs-g1-f-a	0,15	4	1)

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
T136	11	fs-g1-f-a	0,1	4	2)
W4	11	fs-g1-f-a	0,1	4	
W406	11	fs-g1-f-a	0,06	4	
W412	11	fs-g1-f-a	0,06	4	
W420	11	fs-g1-f-a	0,1	4	

1) Ja = 18. 2) Vg1 = -8. Va = 200. 3) μ = 10. Ja = 8.

BATT. TRIODE — 12

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,5	20	-3		200	1			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
HR406	11	fs-g1-f-a	0,06	4	
HR410	11	fs-g1-f-a	0,1	4	
RE034	11	fs-g1-f-a	0,06	4	

BATT. TRIODE — 13

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,5	25	-1		135	1,8			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
A430	11	fs-g1-f-a	0,1	4	2)
HL2	11	fs-g1-f-a	0,1	2	
HL23	1	f-x-a-x-g1-x-x-f	0,05	2	1)
HLB1	11	fs-g1-f-a	0,1	2	3)
KC1	3	f-m-a-x-g1-x-x-f	0,065		2)
KC4	3	f-m-a-x-g1-x-x-f	0,1	2	
K30K	11	f-g1-f-a	0,1	2	
L2	11	fs-g1-f-a	0,1	2	
PM2HL	11	fs-g1-f-a	0,1	2	
T204	3	f-x-a-x-g1-x-x-f	0,065	2	2)
210HF	11	fs-g1-f-a	0,1	2	3)
210HL	11	fs-g1-f-a	0,1	2	3)

1) Ja = 0,5. 2) S = 0,6. 3) Vg1 = -3.

BATT. TRIODE — 14

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2,2	12	-4,5		130	5			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
S4022AR	16	f-f-a-g	0,25	4	
S4022B	11	f-g-f-a	0,25	4	

BATT. TRIODE — 15

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2,2	30	-2,5		135	3			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
B438	11	fs-g1-f-a	0,1	4	
K03	3	f-m-a-x-g1-x-x-f	0,21	2	
W411	11	fs-g1-f-a	0,1	4	

BATT. TRIODE — 16

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
3	6	-8		130	20			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
S4021A	16	f-a-g1-f	0,25	4	
S4021B	11	f-g-f-a	0,25	4	

BATT. TRIODE — 17

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
3,5	14	-3,5		150	20			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DC80	7	g1-x-f-f-x-x-x-a-x	0,2	1,25	1)

1) VHF

BATT. DIODE TRIODE — 18

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,3	50	0		90	0,15			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DAC21	1	fs-m-a-x-x-d-x-f-g1	0,025	1,4	1)
DAC25	2	fs-a-g1-fs-fs-a-fs-f	0,025	1,4	2)
DAC32	1	x-f-a-x-d-x-f-x-g1	0,05	1,4	
HD14	1	a-f-a-x-d-x-f-x-g1	0,05	1,4	
1H5G	1	x-f-a-x-d-x-f-x-g1	0,05	1,4	
1H5GT	1	x-f-a-x-d-x-f-x-g1	0,05	1,4	
1LH4	2	f-a-x-d-x-g1-x-f	0,05	1,4	

1) Ja = 0,5. 2) Ja = 0,35.

BATT. DOUBLE DIODE TRIODE — 19

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,5	28	-1,5		90	0,35			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
21ODDT	11	fs-d1-f-d2-a-g1	0,1	1,4	

BATT. DOUBLE DIODE TRIODE — 20

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,6	20	-3		135	0,8			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
1B5	12	f-a-d1-d2-g1-f	0,06	2	
1H6G	1	a-f-a-d2-d1-x-f-x-g1	0,06	2	
25S	12	f-a-d1-d2-g1-f	0,06	2	

BATT. DOUBLE DIODE TRIODE — 21

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,1	18	-4,5		135	2,5			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DDT2BS	3	f-sm-a-x-d1-d2-x-f-g1	0,1	2	
DT215	3	f-sm-a-x-d1-d2-x-f-g1	0,1	2	
KBC1	3	f-m-a-x-d1-d2-x-f-g1	0,05	2	
KBC32	1	m-f-a-d2-d1-x-f-x-g1	0,12	2	1)

1) Vg1 = 0.

BATT. DOUBLE DIODE TRIODE — 22

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,1	25	-1,5		120	1,6			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DBC21	1	f-sm-a-x-d2-d1-x-f-g1	0,05	1,4	
DBC31	1	s-f-a-d1-d2-x-f-g1	0,05	1,4	
K23B	11	fs-d1-f-d2-a-g1	0,12	2	
TDD2A	11	fs-d1-f-d2-a-g1	0,12	2	
2102	12	f-a-d1-d2-g1-f	0,12	2	

BATT. DOUBLE DIODE TRIODE — 23

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,4	36	-1,5		100	0,8			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
HD24	11	fs-d1-f-d2-a-g1	0,1	2	
HL21DD	11	fs-d1-f-f-d2-a-g1	0,15	2	
HL23DD	1	f-x-a-x-d1-s-d2-f-g1	0,05	2	1)

1) p = 25.

BATT. DOUBLE TRIODE — 24

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,3	15	0		90	4,5		1)	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
XXB	2	f-x-a1-g11-g12-a2-fc-f	0,1 0,05	1,4 2,8	
306	2	f-x-a1-g11-g12-a2-fc-f	0,1 0,05	1,4 2,8	

1) per section.

BATT. DOUBLE TRIODE — 25

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,8	15	-2,5		90	3,7			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DCC90	6	f-a1-g11-fc-g12-a2-f	0,1	1,5	1)
3A5	6	f-a1-g11-fc-g12-a2-f	0,1 0,05	1,4 2,8	1)

1) VHF.

BATT. OUTPUTTRIODE — 26

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
1,5	5	-16		150	10		4k	0,3

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
B405	11	fs-g1-f-a	0,15	4	
B406	11	fs-g1-f-a	0,1	4	
E414	11	f-g1-f-a	0,15	4	
E420	11	fs-g1-f-a	0,15	4	
L410	11	fs-g1-f-a	0,15	4	
L414	11	fs-g1-f-a	0,15	4	1)
P410	11	fs-g1-f-a	0,15	4	
P414	11	fs-g1-f-a	0,15	4	2)
RE114	11	fs-g1-f-a	0,15	4	
RE124	11	fs-g1-f-a	0,15	4	2)

1) Valvo. 2) S = 2,8.

BATT. OUTPUTTRIODE — 27

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
1,8	9	-16		200	12		12k	0,65

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
B409	11	fs-g1-f-a	0,15	4	
E4	11	fs-g1-f-a	0,15	4	
E422	11	fs-g1-f-a	0,15	4	
LU4A	11	fs-g1-f-a	0,15	4	
L413	11	fs-g1-f-a	0,15	4	
L414	11	fs-g1-f-a	0,15	4	1)
ME134	11	fs-g1-f-a	0,15	4	

1) Tungsram Vg1 = -8. S = 2,8.

BATT. OUTPUTTRIODE — 28

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
2	12	-5		135	5		7	0,15

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
K30G	11	fs-g1-f-a	0,2	2	
LP2	11	fs-g1-f-a	0,2	2	1)
PM2A	11	fs-g1-f-a	0,2	2	
P220	11	fs-g1-f-a	0,2	2	

1) S = 3,6. Ja = 8.

BATT. OUTPUTTRIODE — 29

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
2,3	12	-6		150	10		9k	0,6

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
215P	11	fs-g1-f-a	0,15	2	
220P	11	f-g1-f-a	0,2	2	
220PA	11	fs-g1-f-a	0,2	2	

BATT. OUTPUTTRIODE — 30

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
3	4,5	-18		150	22		3,5k	1,4

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
230XP	11	fs-g1-f-a	0,3	2	

BATT. OUTPUTTRIODE — 31

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	
3	7,5	-6		100	11		6,5	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
P2	11	fs-g1-f-a	0,2	2	
PM202	11	fs-g-f-a	0,3	2	1)

1) Vg1 = -12. Ra = 4.

BATT. DOUBLE OUTPUTTRIODE (CLASS B) — 32

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
0,7		0		90	1		12k	0,675

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
1G6G	1	x-f-a1-g11-g12-a2-f-x	0,1	1,4	
1G6GT/G	1	s-f-a1-g11-g12-a2-f-x	0,1	1,4	

BATT. DOUBLE OUTPUTTRIODE (CLASS B) — 33

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
1		0		120	2x1,4		10	2

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
HP2	15	s-g1-g3-f-f-x-g2-a	0,2	2	
KDD1	3	f-x-a1-g2-g1-a2-x-f	0,22	2	
PM2B	15	g1-g2-a2-f-f-x-a1	0,2	2	1)
TT210	3	f-x-a1-g12-g11-a2-f-x	0,2	2	
1J6G	1	s-f-a1-g11-g12-a2-f-x	0,24	2	
1J6GT	1	s-f-a1-g11-g12-a2-f-x	0,24	2	
4A6G	1	x-f-a1-g11-g12-a2-f-fc	0,12	2	2)
19	1	s-f-a1-g11-g12-a2-f-x*	0,24	2	

1) Wo = 1,2. 2) Vg = +1,5. Wo = 1. Va = 90.

BATT. DOUBLE OUTPUTTRIODE (CLASS B) — 34

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
1,9	20	-5,5		120	2x9		14k	1,4

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DDD11	4	g1-fm-x-f-fm-g2-a2-a1	0,1	1,2	
DDD25	2	fs-x-a1-g1-g2-a2-x-f	0,1	1,2	
K33B	15	x-a1-g11-f-f-g12-a2-x	0,2	2	
3B7	2	f-a1-g11-fc-x-g12-a2-f	0,22	1,4	1) 2)
			0,11	2,8	1) 2)
1291	2	f-a1-g11-fc-x-g12-a2-f	0,22	1,4	1) 2)
			0,11	2,8	1) 2)

1) Vg1 = 0. 2) Ja = 2,2. KL AB2.

PENTODI A.F.

BATT. HF-PENTODE (TETRODE) VAR.MU. — 1

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,6		-5	50	90	0,65	0,15		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DF25	2	f-a-g2-g3m-ig-g1-ic-f	0,025	1,4	

BATT. HF PENTODE (TETRODE) VAR.MU. — 2

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,75		-3	67	175	2,3	0,8		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
1A4E	16	f-a-g2-f-g1	0,06	2	
1A4P	16	f-a-g2-fg3-g1	0,06	2	
1A4T	16	f-a-g2-f-g1	0,06	2	
1B4P	16	f-a-g2-fg3-g1	0,06	2	
1B4T	16	f-a-g2-fg3-g1	0,06	2	
1D5GP	1	x-f-a-g2-x-x-fg3-x-g1	0,06	2	
1D5GT	1	x-f-a-g2-x-x-fg3-x-g1	0,06	2	
1E5GP	1	x-f-a-g2-x-x-fg3-x-g1	0,06	2	
951	16	f-a-g2-fg3-g1	0,06	2	

BATT. HF-PENTODE (TETRODE) VAR.MU. — 3

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,0		-1,5	90	120	1,4	0,4		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DF22	1	f-s-a-g2-g3-x-x-f-f-g1	0,05	1,4	
RV2P800	42	f-s-a-g2-g3-f-g1	0,18	1,9	1)
RV2,4P710	41	f-g3-a-g2-k-f-g1	0,13	2,4	2)
RV2,4P711	41	f-g3-a-g2-k-f-g1	0,13	2,4	2)
15	17	f-a-g2-kg3-f-g1	0,22	2	2) 3)

1) Ja = 3,5. Jg2 = 0,8. 2) Ja = 2. 3) Vg2 = 67.

BATT. HF-PENTODE (TETRODE) VAR.MU. 4

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,2		-1,5	90	150	3	1		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
D1F	38	g2-a-g3-f-g1-x-f	0,1	1,4	1)
K50M	15	ic-g1-g3-f-f-x-g2-a	0,18	2	2)
K40N	11	f-g1-f-g2-a	0,18	2	
K50N	15	ic-a-g3-f-f-g4-g2-g1	0,14	2	
PM12M	11	fm-g1-f-g2-a	0,18	2	
SPT2	15	m-g1-g3-f-f-x-g2-a	0,1	2	2)
S210	11	fm-g1-f-a-x-x-g2	0,18	2	
VP2	15	x-g1-g3-f-f-x-g2-a	0,15	2	2)
VP2B	16	x-a-g3-f-f-g4-g2-g1	0,14	2	3)
VP210	15	x-g1-g3-f-f-x-g2-a	0,1	2	4)
VPT2	15	m-g1-g3-f-f-x-g2-a	0,1	2	1)4)
VS2	11	f-g1-f-g2-a	0,15	2	1)
W21	11	fm-g1-f-g2-a	0,1	2	2)
W216	15	m-g1-x-fg3-f-x-g2-a	0,1	2	
1L05	2	f-a-g2-g3-ic-g1-x-f	0,05	1,5	

1) Vg2 = 60. 2) Vg1 = 0. Vg2 = 135. 3) Hexode. 4) Jg2 = 0,6.

BATT. HF-PENTODE (TETRODE) 5

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,3		0	30	50	0,6	0,22		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
XSG1,5V	31	g1-f-f-g2-a	0,08	1,5	
XSG2,0V	31	g1-f-f-g2-a	0,08	2	
XVS2,0V	31	g1-f-f-g2-a	0,08	2	
XW1,5V	30	f-g2-g3-a-f-g1	0,08	1,5	1)
XW2,0V	30	f-g2-g3-a-f-g1	0,08	2	2)4)
1AD5	9	x-g1-x-fg3-fg3-x-a-g2	0,04	1,2	3)4)

1) S = 0,5. 2) S = 0,6. 3) S = 0,45. 4) Ja = 0,9.

BATT. HF-PENTODE (TETRODE) 6

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,5		-2	22,5	22,5	0,35	0,3		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
2E31	29	fg3-g1-f-g2-a	0,05	1,25	
2E32	29	fg3-g1-f-g2-a	0,05	1,25	

BATT. HF-PENTODE (TETRODE) 7

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,7		-0,5	135	135	2,4	0,8		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
BEP61	3	f-m-a-g2-x-g3-x-f-g1	0,05	2	
BHP61	3	f-m-a-g2-x-g3-x-f-g1	0,065	2	
KF3	3	f-s-a-g2-x-g3-x-f-g1	0,045	2	
KF4	3	f-s-a-g2-x-g3-x-f-g1	0,065	2	
S209	3	f-s-a-g2-x-g3-x-f-g1	0,05	2	

BATT. HF-PENTODE (TETRODE) 8

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,75		0	90	90	1,25	0,25		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DF33	1	s-f-a-g2-x-x-fg3-x-g1	0,05	1,4	
LV9	40	f-f-a-g1-g2-g3s-g3s-a	0,05	1,2	1)
Z14	1	x-f-a-g2-x-x-fg3-x-g1	0,05	1,4	
1AF4	6	fg3-a-g2-x-fg3-g1-f	0,025	1,4	
1AF5	6	fg3-x-d-g2-a-g1-f	0,025	1,4	2)
1LO5	2	f-a-g2-g3-ic-g1-x-f	0,05	1,4	3)
1LN5	2	f-a-g2-g3-ic-g1-x-f	0,05	1,4	
1N5G	1	x-f-a-g2-x-x-fg3-x-g1	0,05	1,4	
1N5GT	1	x-f-a-g2-x-x-fg3-x-g1	0,05	1,4	
1P5GT	1	x-f-a-g2-x-x-fg3-x-g1	0,05	1,4	4)
1R	1	x-f+-a-g2-g3-x-f-x-g1	0,05	1,4	
1U4	6	fg3-a-g2-x-fg3-g1-f	0,05	1,4	5)

1) Vg1 = +2,6. Va = Vg2 = 45. 2) +1 Diode. 3) Vg2 = 45. 4) Ja = 2,3. Jg2 = 0,7. 5) Jg2 = 0,5.

BATT. HF-PENTODE — 9

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
0,75		0	67,5	67,5	1,8	0,75		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
1W5	9	f-x-a-g2-x-g1-x-fg3	0,04	1,25	

BATT. HF-PENTODE (TETRODE) — 10

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
0,8		0	60	120	1,25	0,25		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DF11	4	g1-fg3m-x-f-fg3m-x-a-g2	0,025	1,2	
DF21	1	f-m-a-g2-g3-x-x-f-g1	0,025	1,4	1)
KF35	1	m-f-a-g2-g3-x-f-x-g1	0,05	2	2)

1) Vg2 = 90. 2) Vg1 = +1,5.

BATT. HF-PENTODE (TETRODE) — 11

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
0,8		-1,5	80	175	4	0,5		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
A442	11	f-g1-f-g2-x-a	0,06	4	
B442	11	f-g1-f-g2-x-a	0,1	4	
B442	11	f-g1-f-a-x-x-g2	0,15	2	
H406D	11	f-g1-f-g2-x-a	0,06	4	
H410D	11	f-g1-f-g2-x-a	0,1	4	
RE3094	11	f-g1-f-g2-x-a	0,06	6	
S207	11	f-g1-f-a-x-x-g2	0,15	2	
S406	11	f-g1-f-g2-x-a	0,06	4	1)
S408	11	f-g1-f-g2-x-a	0,06	4	
S409	11	f-g1-f-g2-x-a	0,1	4	
S410	11	f-g1-f-g2-x-a	0,1	4	1)

1) S = 1. Ja = 1,5.

BATT. HF-PENTODE (TETRODE) — 12

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
0,9		0	67,5	90	3	1,4		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DF91	6	fg3-a-g2-x-fg3-g1-f	0,05	1,4	
DF92	6	fg3-a-g2-x-fg3-g1-f	0,05	1,4	
W17	6	fg3-a-g2-x-fg3-g1-f	0,05	1,4	
1AB5	2	f-a-g2-x-x-g1-x-fg3-f	0,13	1,2	1) 4)
1F2	6	f-a-g2-x-fg3-g1-f	0,05	1,4	
1F3	6	f-a-g2-x-f-g1-f	0,05	1,4	
1L4	6	fg3-a-g2-x-fg3-g1-f	0,05	1,4	
1SA6GT	1	x-f-g3-g1-x-g2-f-a	0,05	1,4	4)
1T4	6	fg3-a-g2-x-fg3-g1-f	0,05	1,4	
1T4T	6	fg3-a-g2-x-fg3-g1-f	0,025	1,4	
3E6	2	f-a-g2-g3-fc-g1-x-f	0,1	1,4	2) 1)
			0,05	2,8	
22	16	f-a-g2-f-g1	0,132	3,3	3) 5)

1) Vg2 = 90. 2) S = 2. 3) Vg1 = +1,5. 4) Jg2 = 0,7. 5) S = 0,5.

BATT. HF-PENTODE (TETRODE) — 13

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
1	-	-1,5	75	150	2,2	0,4		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
RV2,4P700	41	f-g3-a-g2-x-f-g1	0,06	2,4	
RV2,4P701	41	f-g3-a-g2-x-f-g1	0,06	2,4	

BATT. HF-PENTODE (TETRODE) — 14

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
1,7		-0,5	120	150	2,5	0,8		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
KF1	18	x-g1-g3-f-f-x-g2-a	0,2	2	
KF2	18	x-g1-g3-f-f-x-g2-a	0,2	2	
SP2	15	x-g1-g3-f-f-x-g2-a	0,18	2	
SP210	15	m-g1-g3-f-f-x-g2-a	0,1	2	1)

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
S214	28	x-g1-g3-f-f-x-g2-a	0,2	2	
S218	28	x-g1-g3-f-f-x-g2-a	0,2	2	
VP23	1	f-x-a-g2-g3-x-x-f-g1	0,05	2	
Z21	11	f-g1-f-g2-x-a	0,1	2	
Z22	15	x-g1-g3-f-f-x-g2-a	0,1	2	
210SPT	15	x-g1-g3-f-f-x-g2-a	0,1	2	
210VPA	15	x-g1-g3-f-f-x-g2-a	0,1	2	
215SG	11	fs-g1-f-g2-x-a	0,15	2	

1) S = 1,2. Ja = 1,1. Jg2 = 0,3.

BATT. AF-PENTODE 15

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,1		-1,5	30	30	0,05	0,02		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DF70	9	f-x-a-g2-x-g1-x-fg3	0,025	0,625	

BATT. AF-PENTODE (TETRODE) 16

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra MΩ	
0,1		0		22,5	0,05	0,01	1	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DF65	10	g3f-a-g2-g1-f	0,013	0,625	
DF67	10	g3f-a-g2-g1-f	0,013	0,625	
XFW10	29	f-g1-f-g2-a	0,025	0,675	
XFW20	29	f-g1-f-g2-a	0,013	0,625	
XW0,75A	29	f-g1-f-g2-a	0,033	0,75	1)
XW0,75B	29	f-g1-f-g2-a	0,025	0,675	1)

1) Va = 30.

BATT. DIODE-PENTODE (TETRODE) 17

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,4		0	30	50	0,3	0,1		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
CK505	29	f-g1-f-g2-a	0,03	0,625	1)
1Q6	9	f-d-a-g2-x-g1-x-fg3	0,04	1,25	
1S6	9	a-x-g1-fg3-f-d-x-g2	0,04	1,25	
1SB6GT	1	x-f-a-g2-d-x-fg3-g1	0,05	1,4	2)
1T6	9	a-x-g1-fg3-f-d-x-g2	0,04	1,25	
2E41	46	fg3-g1-f-d-g2-a	0,03	1,25	
2E42	46	fg3-g1-f-d-g2-a	0,03	1,25	

1) S = 0,2 no diode. 2) Va = Vg2 = 45. Ja = 1.

BATT. DIODE-PENTODE (TETRODE) 18

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,6		0	67,5	67,5	1,5	0,4		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DAF91	6	fg3-x-d-g2-a-g1-f	0,05	1,4	
2D17	6	fg3-x-d-g2-a-g1-f+	0,05	1,4	
1FD9	6	fg3-x-d-g2-a-g1-f	0,05	1,4	
1LD5	2	f-a-g2-d-x-g1-x-fg3	0,05	1,4	1) 2)
1S5	6	fg3-x-d-g2-a-g1-f	0,05	1,4	3)
1S5T	6	fg3-x-d-g2-a-g1-f	0,025	1,4	
1U5	6	f-a-g2-d-x-g1-f	0,05	1,4	3)

1) Ja = 0,6. 2) Jg2 = 0,2. 3) Ja = 2,7.

BATT. DIODE-PENTODE (TETRODE) — 19

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,7		0	67,5	67,5	0,8	0,15		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DAF11	4	g1-f-a-f-f-x-d-g2	0,05	1,4	1)
DAF40	5	fg3-a-d-x-g2-g1-x-f	0,025	1,4	
DAF41	5	fg3-a-d-x-g2-g1-x-f	0,025	1,4	

1) S = 2.

BATT. DOUBLE DIODE-PENTODE — 20

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,65		-1,5	67,5	135	2,2	0,7		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
1F6	12	f-a-g2-d1-d2-fg3-g1	0,06	2	
1F7G	1	x-f-a-d1-d2-g2-g3f-x-g1	0,06	2	
1F7GV	1	x-f-a-d1-d2-g2-g3f-x-g1	0,06	2	

BATT. AF DOUBLE PENTODE (TETRODE) — 21

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,065			0	45	0,06			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
CK510AX	44	f-g22-a2-f-g1-a1-g21	0,05	0,625	

BATT. AF-DOUBLE PENTODE — 22

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,22		0	45	45	1	0,5	1)	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DFP101	6	a1-fg3-g11-g2-a2-f-g12	0,025	1,4	

1) per section.

BATT. DIODE-HEPTODE — 23

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,65	60	0	15	15	0,8	1,7		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DAH50	2	fg5-m-a-g2-g4-d-fc-fg1-g3	0,05	1,4	1)

1) g3 = control grid.

BATT. DIODE-TRIODE-HF-PENTODE — 24

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,8		0	90	90	1,5	0,3	PENT.	
0,3	65	0		90	0,2		TRIODE	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
3A8GT	1	fcg3-f-aP-g2P-g1T-aT-f-d-g1P	0,05 0,1	2,8 1,4	

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BATT. OUTPUTPENTODE (TETRODE) — 1

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		Wo mW
0,35		-1,25	22,5	22,5	1	0,3		3

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
XFY10	29	f-g1-f-g2-a	0,025	1,25	

BATT. OUTPUTPENTODE (TETRODE) — 2

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo mW
0,37		-0,5	22,5	22,5	0,25	0,08	175	1,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
XFY11	29	f-g1-f-g2-a	0,025	1,25	1)
XFY12	29	f-g1-f-g2-a	0,025	1,25	
XFY21	29	f-g1-f-g2-a	0,013	1,25	

1) Vg1 = 0.

BATT. OUTPUT PENTODE (TETRODE) — 3

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
0,5		-1,25	45	45	0,55	0,12	100	0,006

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
CK502AX	29	f-g1-f-g2-a	0,03	1,25	1)
DL65	10	f g3-a-g2-g1-f	0,013	1,25	2)
DL67	10	f g3-a-g2-g1-f	0,013	1,25	
DL71	9	x-g1-x-f g3-f-x-a-g2	0,025	1,25	
XX14C	29	f-g1-f-g2-a	0,025	1,25	
2E35	29	f-g1-f-g2-a	0,03	1,25	
2E36	29	f-g1-f-g2-a	0,03	1,25	

1) Wo = 0,003. 2) Vg1 = -2,5.

BATT. OUTPUTPENTODE (TETRODE) — 4

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
0,5		-4,5	45	45	1,25	0,4	30	0,023

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
CK506AX	29	f-g1-f-g2-a	0,045	1,25	
DL72	9	x-g1-x-f g3-f-x-a-g2	0,025	1,25	
XY1,4A	29	f g3-g1-f-g2-a	0,032	1,4	1)
XY1,4B	29	f g3-g1-f-g2-a	0,025	1,25	

1) Wo = 0,01. Vg1 = 0. Ja = 2,4.

BATT. OUTPUTPENTODE (TETRODE) — 5

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
0,6		-2	45	45	0,55	0,2	50	0,010

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
CK503AX	29	f-g1-f-g2-a	0,03	1,25	1)
CK507AX	29	f-g1-f-g2-a	0,05	1,25	

1) Vg1 = 0. Ja = 1,5.

BATT. OUTPUTPENTODE (TETRODE) — 6

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo mW
1		-1,5	45	45	1,8	0,4	24	60

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
XY1,5V	30	f-g2-g1-a-f	0,16	1,5	
XY2,0V	30	f-g2-g1-a-f	0,16	2	
1AC5	9	x-g1-x-f g3-f-x-a-g2	0,04	1,25	1)
1V5	9	x-g1-x-f g3-f-x-a-g2	0,04	1,25	2)

1) Wo = 15. Vg = +3. 2) S = 0,7.

BATT. OUTPUTPENTODE (TETRODE) 7

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
1,0		-4	90	90	5	0,9	20.	0,12

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
KL5	3	f-s-a-g2-g1-x-x-fg3	0,1	2	1)
1A5G	1	s-f-a-g2-g1-x-fg3	0,05	1,4	
1A5GT	1	s-f-a-g2-g1-x-fg3	0,05	2	
1LA4E	2	f-a-g2-x-x-g1-x-fg3	0,05	1,4	
1LA4	2	f-a-g2-x-x-g1-x-fg3	0,05	1,4	
1LB4	2	f-a-g2-x-x-g1-x-fg3	0,05	1,4	1)3)
1T5GT	1	x-f-a-g2-g1-x-fg3-f	0,05	1,4	2)
1W4	6	fg3-a-g2-x-x-g1-f	0,05	1,4	3)

1) S = 1,4. Ra = 12 . Wo = 0,2. 2) Ra = 1 4k. Ja = 7. 3) Vg1 = +9.

BATT. OUTPUTPENTODE (TETRODE) 8

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
1,3		-17	150	200	12	2	20	1

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
B443	11	fg3-g1-f-a-g2	0,15	4	
B543	11	fg3-g1-f-a-g2	0,1	5	
L510D	11	fg3-g1-f-a-g2	0,1	5	
LL610	11	fg3-g1-f-a-g2	0,1	5	
P520	11	fg3-g1-f-a-g2	0,1	5	
RES105	11	fg3-g1-f-a-g2	0,1	5	
RES164	11	fg3-g1-f-a-g2	0,15	4	1)
RES164D	11	fg3-g1-f-a-g2	0,15	4	1)
RES174D	11	fg3-g1-f-a-g2	0,15	4	

1) Vg1 = -12. Vg2 = 80.

BATT. OUTPUTPENTODE (TETRODE)

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo
1,4		-5	120	120	5	1	22	0,3

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DL11	4	g1-fmg3-x-f-fmg3-x-a-g2	0,05	1,4	
DL21	1	fg3-x-a-g2-g1-x-x-f	0,05	1,4	
DL41	5	fm-a-ic-x-g2-g1-f-fg3	0,05	1,4	
KL2	3	f-g3-a-g2-g1-x-x-f	0,27	2	1)
KL4	3	f-g3-a-g2-g1-x-x-f	0,15	2	2)
P226	3	fg3-x-a-g2-g1-x-x-f	0,15	2	2)

1) Vg1 = -7,5. Ra = 7. 2) Vg1 = -3. Wo = 0,2.

BATT. OUTPUTPENTODE (TETRODE) 10

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
1,5		-7	67,5	90	8	2	8	0,25

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DL35	1	s-f-a-g2-g1-x-fg3-x	0,1	1,4	1)
DL91	6	fg3-a-g1-g2-fg3-a-f	0,1	1,4	
DL92	6	f-a-g1-g2-fmg3-a-f	0,1	1,4	2)
N14	1	s-f-a-g2-g1-x-fg3-x	0,1	1,4	1)
N17	6	f-a-g1-g2-fmg3-a-f	0,1	1,4	
1C5G	1	x-f-a-g2-g1-x-fg3	0,1	1,4	1)
1C5GT	1	x-f-a-g2-g1-x-fg3	0,1	1,4	1)
1P10	6	f-a-g1-g2-fcg3-a-f	0,1	1,4	
1S4	6	f-a-g1-g2-fg3-a-f	0,1	1,4	
1S4T	6	fg3-a-g1-g2-fg3-f	0,05	1,4	
3B5GT	1	x-f-a-g2-g1-x-f-fcg3	0,1 0,05	1,4 2,8	4)
3S4	6	f-a-g1-g2-fmg3-a-f	0,1	1,4	2)
3S4T		f-a-g1-g2-fmg3-a-f	0,05	1,4	2)

1) Vg2 = 90V. 2) Jf = 0,05. Vf = 2,8. 3) Vg2 = 90. 4) Va = 67,5. Ra = 5 Jg2 = 0,6.

BATT. OUTPUTPENTODE (TETRODE) 11

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
1,7		-4,5	90	90	8	1,2	9	0,22

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DL33	1	x-f-a-g2-g1-x-f-fg3	0,1	1,4	5)
DL36	1	s-f-a-g2-g1-x-fg3-x	0,1	1,4	7)
DL94	6	f-a-g2-x-fcg3-g1-f	0,1	1,4	1)
DL95	6	f-a-g1-g2-fcg3-a-f	0,1	1,4	
N16	1	x-f-a-g2-g1-x-f-f	0,1	1,4	
1G5G	1	s-f-a-g2-g1-x-fg3	0,12	2	1)6)
1Q5GT	1	x-f-a-g2-g1-x-fg3	0,100	1,4	5)
1P11	6	f-a-g2-x-fcg3-g1-f	0,1	1,4	1)
1T	1	x-f-a-g2-x-x-f-fcg3-g1	0,1	1,4	
			0,05	2,8	
3Q5GT	1	x-f-a-g2-g1-x-f-fcg3	0,1	1,4	2)
			0,05	2,5	
3E5	6	f-a-g2-x-g3fc-g1-f	0,05	1,4	3)
3LE4	2	f-a-g2-x-x-g1-fcg3-f	0,1	1,4	4)5)
			0,05	2,8	
3LF4	2	f-a-g2-x-x-g1-fcg3-f	0,1	1,4	4)5)
			0,05	2,8	
3Q4	6	f-a-g1-g2-fcg3-a-f	0,1	1,4	
			0,05	2,8	
3Q5G	1	f-a-g2-g1-x-f-fm	0,1	1,4	
3V4	6	f-a-g2-x-fcg3-g1-f	0,05	2,8	

1) Ja = 9. Jg2 = 2. 2) Vg1 = +9. Ja = 6. 3) Vg = +8. 4) Vg = +9. Ja = 10. 5) Wc = 0,33. 6) Wo.= 0,5. 7) S = 2,2.

BATT. OUTPUTPENTODE (TETRODE) 12

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
1,7		-4,5	135	135	8	2,6	16	0,34

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
1F4	17	f-a-g1-g2-fg3	0,12	2	
1F5G	1	s-f-a-g2-g1-x-fg3	0,12	2	

BATT. OUTPUTPENTODE (TETRODE) 13

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
2		-8,5	90	150	14	2,2	8	0,7

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DL93	6	f-a-g2-g1-fcg3-a-f	0,2	1,4	
3A4	6	f-a-g1-g2-fcg3-a-fc	0,2	1,4	
			0,1	2,8	

BATT. OUTPUTPENTODE (TETRODE) 14

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
2,4		-4,5	90	150	10	1		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
3D6	2	f-a-g2-x-x-g1-fcg3-f	0,22	1,4	
1299	2	f-a-g2-x-x-g1-fcg3-f	0,22	1,4	
			0,11	2,8	

BATT. OUTPUTPENTODE (TETRODE) 15

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
2,5		-9	150	150	20		7,5	1

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
220 PT	11	fg3-g1-f-a-g2	0,2	2	

BATT. OUTPUTPENTODE (TETRODE) — 15

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
2,7		-4	150	150	7	1,2	18	0,45

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
BLP61	3	fg3-x-a-g2-g1-x-x-f	0,15	2	1)
G243N	11	f-g1-f-a-g2	0,2	2	2)
KL1	3	f-a-a-g2-g1-x-x-fg3	0,15	2	3)6)
KL35	1	a-f-a-g2-g1-x-fg3	0,15	2	
KT2	11	f-g1-f-a-g2	0,2	2	
KT24	11	f-g1-f-a-g2	0,2	2	4)
K70B	11	f-g1-f-a-g2	0,15	2	4)
K70D	11	f-g1-f-a-g2	0,3	2	4)5)
PEN25	1	f-x-a-g2-g1-x-x-f	0,15	2	
PEN220	11	fg3-g1-f-a-g2	0,2	2	
PM22A	11	fg3-g1-f-a-g2	0,15	2	4)
PP222	11	f-g1-f-a-g2	0,2	2	
PT2	11	f-g1-f-a-g2	0,2	2	
P225	11	f-g1-f-a-g2	0,2	2	2)
RES212	11	f-g1-f-a-g2	0,2	2	2)
1J5G	1	a-f-a-g2-g1-x-fg3	0,12	2	7)
2200T	11	f-g1-f-a-g2	0,2	2	
950	17	f-a-g1-g2-fg3	0,12	2	7)
2101	17	f-a-g1-g2-fg3	0,12	2	

1) Vg1 = +5. 2) Wo = 0,6. 3) Vg2 = 100. 4) Wo = 0,35. 5) Vg2 = 120. Vg1 = -3. 6) S = 1,7. 7) S = 1 Vg = +16,5.

BATT. OUTPUTPENTODE (TETRODE) — 17

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
3,4		-5,5	250	250	10	1,8	25	1,2

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
D2F	36	g2-a-g3-f-g1-ms-f	0,24	1,4	

BATT. DIODE OUTPUTPENTODE (TETRODE) — 18

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
0,8		-4,5	90	90	3,4	0,7	25	0,1

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
1N6G	1	x-f-a-g2-g1-d-fg3-x	0,05	1,4	

BATT. DIODE-TRIODE-OUTPUTPENTODE (TETRODE) — 19

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
1		-8	90	90	5,5	1,2	12	0,2
0,6	25	0		90			TRIODE	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
1B6GT	1	x-f-aP-g2-g1P-aT-fg3-d-g1T	0,1	1,4	
1D8GT	1	x-f-aP-g2-g1P-aT-fg3-d-g1T	0,1	1,4	

BATT. DOUBLE OUTPUT PENTODE — 20

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		Wo W
0,55		0	40	40	1,5	0,4		0,015

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DLL102	6	fg3-a1-g11-g2-a2-g12-f	0,025	2,8	

BATT. DOUBLE OUTPUT PENTODE — 21

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
1		-12	67,5	90	10 1)	4 1)	16	0,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DLL101	6	fg3-a1-g11-g2-a2-g12-f	0,025	2,8	

1) max. signal input class B.

BATT. DOUBLE OUTPUT PENTODE (TETRODE) * — 22

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
2		-5	125	150	2x6 1)	2x1	20	0,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DLL21	1	f-g11-a1-g2-g12-a2-fm-f	0,2	1,4	6)
KLL32	1	x-f-a1-g11-g12-a2-fg3-g2	0,3	2	2)
QP21	15	g11-g12-a2-fg3-f-g2-a1	0,4	2	
QP223	15	g11-g12-a2-fg3-f-g2-a1	0,3	2	2)
QP25	1	fg3-x-a1-g2-g11-g12-a2-f	0,2	2	3)6)
QP230	15	g11-g12-a2-fg3-f-g2-a1	0,3	2	3)6)
QPT2	15	g11-g12-a2-fg3-f-g2-a1	0,4	2	
1E7G	1	x-f-a1-g11-g12-a2-fg3-g2	0,24	2	5)
240QP	15	g11-g12-a2-fg3-f-g2-a1	0,4	2	
2103	23	f-a2-g12-g2-g11-a1-fg3	0,26	2	5)

1) max. signal input. 2) Va = Vg2 = 120. Vg1 = -10. 3) Wo = 0,9.
4) Wo = 2. Vg1 = -12. 5) Vg1 = -7,2. 6) Vg1 = -9.

MESCOLATRICI-CONVERTITRICI DI FREQUENZA

BATT. HEXODE (FREQ. CHANGER) — 1

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,15		0	40	40	0,35	0,75		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
1AE5	-	-	0,06	1,25	1)2)
1C8	9	1c-g1-x-fg5-f-a-g2g4-g3	0,04	1,25	
1E8	9	1c-g1-x-fg5-f-a-g2g4-g3	0,04	1,25	
1LB6	2	f-a-g2-g1-g3g5-g4-x-f	0,05	1,4	2)

1) Ja = 0,9. 2) Jg2 = 2.

BATT. HEXODE (FREQ. CHANGER) — 2

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,3		0	67,5	90	1,5	3		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DK91	6	g5f-a-g2g4-g1-g5f-g3-f	0,05	1,4	
X17	6	g5f-a-g2g4-g1-g5f-g3-f	0,05	1,4	
1C1	6	g5f-a-g2g4-g1-g5f-g3-f	0,05	1,2	
1R5	6	g5f-a-g2g4-g1-g5f-g3-f	0,05	1,4	
1R5T	6	fg5-a-g2g4-g1-fg5-g3-f	0,025	1,4	

BATT. HEPTODE (FREQ.CHANGER) 3

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vg3g5 V	
0,25		0	90	90	0,55	0,7	45	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DK32	1	s-f-a-g3g5-g1-g2-f-x-g4	0,05	1,4	
X14	1	s-f-a-g3g5-g1-g2-f-x-g4	0,05	1,4	
1A7G	1	s-f-a-g3g5-g1-g2-f-x-g4	0,05	1,4	
1A7GT	1	s-f-a-g3g5-g1-g2-f-x-g4	0,05	1,4	
1B7GT	1	s-f-a-g3g5-g1-g2-f-x-g4	0,1	1,4	1)
1L6	6	f-a-g2-g1-g3g5-g4-f	0,05	1,4	
1LA6	2	f-a-g2-g1-g3g5-x-f	0,05	1,4	
1LA6E	2	f-a-g2-g1-g3g5-g4-x-f	0,05	1,4	
1LC6	2	f-a-g2-g1-g3g5-g4-x-f	0,05	1,4	
1U6	6	f-a-g2-g1-g3g5-g4-f	0,025	1,4	

1) Ja = 1,5. S = 0,35. Jg2 = 1,3.

BATT. HEPTODE (FREQ. CHANGER) 4

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vg3 V	
0,45		-1,5	60	135	1	1,1	90	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
KH1	3	f-s-a-g2-g4-g3-x-f-g1	0,13	2	

BATT. OKTODE (HEPTODE) (FREQ. CHANGER) 5

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vg3g5 V	Jg3g5 mA
0,25		Vg4=-0,5	135	135	1	2	50	1

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
BM061	3	fg6-x-a-g3g5-g1-g2-x-f-g4	0,13	2	
FC2	15	g2-g1-g3g5-f-f-mg6-a-g4	0,13	2	
FC2A	15	g2-g1-g3g5-f-f-mg6-a-g4	0,13	2	
KK2	3	fg6-x-a-g3g5-g1-g2-x-f-g4	0,13	2	
KK32	1	x-f-a-g3g5-g1-g2-f-x-g4	0,13	2	
K80A	15	g2-g1-g3g5-f-f-g6-a-g4	0,1	2	
K80B	15	g2-g1-g3g5-f-f-g6m-a-g4	0,13	2	1)2)

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
0202	3	fg6-x-a-g3g5-g1-g2-x-f-g4	0,13	2	2)
VHT2	15	g2-g1-g3g5-f-f-x-a-g4	0,1	2	
VHT2A	15	g2-g1-g3g5-f-f-sg6-a-g4	0,1	2	
X22	15	g2-g1-g3g5-f-fg6-x-a-g4	0,15	2	4)
1A6	12	f-a-g2-g1-g3g5-f-g4	0,06	2	3)5)
1C6	12	f-a-g2-g1-g3g5-f-g4	0,12	2	3)5)
1C7G	1	x-f-a-g3g5-g1-g2-f-x-g4	0,12	2	3)5)
1D7G	1	x-f-a-g3g5-g1-g2-f-x-g4	0,06	2	3)5)
210PG	15	g2-g1-g3g5-f-f-s-a-g4	0,1	2	2)4)
210PGA	15	g2-g1-g3g5-f-f-s-a-g4	0,13	2	2)4)
210SPG	15	g2-g1-g3g5-f-f-sg6-a-g4	0,13	2	2)4)

1) Vg1 = -5. 2) Vg2 = 45. 3) Vg1 = -3. 4) S = 0,35. 5) Vg2 = 67.

BATT. OKTODE (HEPTODE) (FREQ. CHANGER) 6

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vg5 V	Jg5 mA
0,45		Vg4=0	60	90	1,5	2,4	90	0,25

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DK21	1	fg6-s-a-g5-g1g3-x-g2-f	0,05	1,4	
DK40	5	fg6-s-g4-g3g5-g2-g1-x-f	0,05	1,4	

BATT. TRIODE PENTODE (FREQ. CHANGER) 7

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,35		-1,5	60	120	0,8		PENT.	
				100	4		TRI.	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
KCP30	1	m-f-aP-g2-gT-aT-fg3-x-g1	0,2	2	1)
TP22	22	g2-aP-g3-f-f-x-aT-gT-s-g1	0,25	2	
TP23	15	aT-gTg3-g2-f-f-s-aP-g1	0,25	2	
TP25	1	f-x-aP-aT-gTg3-s-g2-f-g1	0,2	2	
TP26	1	f-x-aP-aT-gTg3-s-g2-f-g1	0,2	2	

1) Vg1 = -3.

BATT. TRIODE HEPTODE (HEXODE) (FREQ. CHANGER) 8

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,06		0	22,5	22,5	0,2	0,3		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
2G21	44	fg5-g2g4-g3-f-g1gT-aH-aT	0,05	1,25	
2G22	44	fg5-g2g4-g3-f-g1gT-aH-aT	0,05	1,25	

BATT. TRIODE HEPTODE (HEXODE) (FREQ. CHANGER) 9

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,3		0	60	150	1	1,5	HEXODE	
				90	0,75		TRIODE	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DCH11	4	g1-fm-aH-f-fm-gTg3-aT-g2g4	0,075	1,4	
DCH25	2	fs-aH-aT-gTg3-g2g4-g1-fs-f	0,1	1,4	
KCH1	3	f-x-aH-g2g4-gTg3-aT-x-f	0,18	2	1)
TH2	15	aT-g3gT-g2g4-f-f-m-aH-g1	0,23	2	3)
X24	15	aT-g3gT-g2g4-f-f-m-aH-g1	0,2	2	
220TH	15	aT-g3gT-g2g4-fg5-f-m-aH-g1	0,2	2	2)

1) VaH = 90. 2) JaH = 0,4. 3) Vg1 = -1,5.

INDICATORI DI SINTONIA

BATT. TUNING INDICATOR 1

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vi V	
		0/-4		120			120	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DM21	2	f+-x-a-l-g-x-x-f+	0,025	1,4	

VALVOLE PER APPARECCHI ALIMENTATI CON CORRENTE ALTERNATA

DIODI

HF DIODE 1

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
				200	0,8			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AB1	11	f-s-f-k-d1-d2	0,65	4	
AB2	18	f-d1-d2-km-f	0,65	4	
A20B	11	f-d2-f-d1-k	0,65	4	
BB1	11	f-s-f-d1-k-d2	0,18	13	
CB1	18	f-f-s-d1-k-d2	0,2	13	
CB2	18	f-f-d2-d1-k	0,2	13	
C20C	11	f-d2-f-d1-k	0,2	13	
DD6	11	f-d2-f-d-k	0,2	6,3	
DD41	1	f-k1-d1-s-d2-s-k2-f	0,5	4	
DD620	11	f-d2-f-k-d1	0,2	6,3	
DD14	11	f-x-f-k-d2-d1	0,75	4	
D41	11	f-d1-f-d2-ks	0,3	4	
D63	1	s-f-d2-k2-d1-x-f-k1	0,3	6,3	1)
D77	11	k2-d1-f-f-k1-s-d2	0,3	6,3	2)
D400	18	f-f-d2-d1-km	0,65	4	
D401	11	f-s-f-d1-k-d2	0,65	4	
D601	18	f-f-d2-d1-k	0,65	4	
D604	3	f-m-k2-d2-s-d1-k1-f	0,2	6,3	
D1300	18	f-f-d2-d1-km	0,2	13	
D1301	18	f-f-d2-d1-k	0,2	13	
EAA11	4	k1-m-x-f-f-k2-d2-d1	0,4	6,3	
EAB1	3	f-s-d1-d2-d3-k-f	0,2	6,3	
EB1	18	f-f-x-d1-k-d2	0,25	6,3	
EB2	18	f-f-d2-d1-ks	0,25	6,3	
EB4	3	f-x-k2-d2-s-d1-k1-f	0,2	6,3	
EB11	4	k2-k1-x-f-f-x-d1-d2	0,2	6,3	
EB34	1	s-f-d1-k1-d2-x-f-k2	0,2	6,3	
EB40	5	f-x-d1-x-d2-x-k-f	0,26	6,3	
EB41	5	f-x-k2-d2-s-d1-k1-f	0,3	6,3	
EDT300	18	f-f-d2-d1-km	0,2	13	
NDD40	11	f-s-f-d1-k-d2	0,65	4	
NDD51	18	f-f-d2-d1-km	0,65	4	
SD	11	f-d2-f-d1-ks	0,3	4	
UAA11	4	k1-m-x-f-f-k2-d2-d1	0,1	20	
UDD51	18	f-f-d2-d1-km	0,2	13	
V914	11	f-x-f-k-d	0,3	4	
ZD	11	f-d2-d1-f-ks	0,2	13	
2D4A	11	f-d2-f-d1-k	0,65	4	

1) Ja = 2. 2) Ja = 5.

HF DIODE — 2

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
				100	8			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
D1	21	d-f-k-f	0,2	4	
DD6	11	f-d2-f-d1-k	0,3	6,3	
EA40	5	f-x-x-d-x-x-k-f	0,2	6,3	
EA50	21	d-f-k-f	0,15	6,3	
SD6	6	m-d-f-f-k-m-m	0,15	6,3	
6AL5	6	k2-d2-f-f-k1-s-d1	0,3	6,3	
6DR4	21	d-f-k-f	0,15	6,3	2)
6H4GT	1	x-f-x-d-x-x-f-k	0,15	6,3	
6H6	1	s-f-d1-k1-d2-x-f-k2	0,3	6,3	
6H6A	12	f-d2-k2-s-k1-d1-f	0,3	6,3	
6H6GT	1	s-f-d1-k1-d2-x-f-k2	0,3	6,3	
7A6	2	f-k1-d1-x-s-d2-f	0,15	6,3	
7C4	2	f-s-m-d-x-x-k-f	0,15	6,3	
10D1	11	f-d1-f-d2-ks	0,2	13	
12AL5	6	k2-d1-f-f-k1-s-d2	0,15	12,6	
12H6	1	s-f-d1-k1-d2-x-f-k2	0,15	12,6	
20D1	6	k2-d1-f-f-k1-s-d2	0,2	9,5	
1203A	2	f-s-x-d-x-x-k-f	0,15	6,3	
1247		x-x-x-f-f-x-x-x-a	0,065	0,7	1)
4623	21	d-f-k-f	0,15	6,3	
5679	2	f-k1-d1-fc-x-d2-k2-f	0,15	6,3	

1) Ja = 0,4. 2) Ja = 2.

RETTIFICATORI

HALF WAVE RECTIFIER — 1

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vo V	Jo mA
							75	15

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
D42	11	f-k-f-a	0,6	4	
D43	11	f-k-f-x-a	0,6	4	

HALF WAVE RECTIFIER — 2

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vo V	Jo mA
							250	75

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
CY1	3	f-x-s-x-x-x-k-f	0,2	20	
CY31	1	x-f-x-x-s-x-f-k	0,2	20	
C10B	19	s-x-f-f-k	0,2	20	
EY91	6	s-k-f-f-s-x-x	0,42	6,3	
E20U	3	f-x-s-x-x-x-k-f	0,2	20	
G2080	3	f-x-s-x-x-x-k-f	0,2	20	
KZ	11	f-x-f-s-k	0,2	20	
OY4	1	s-x-ss-x-s-x-f-f	cold cathode		1)
OY4G	1	s-x-ss-x-s-x-f-f	cold cathode		1)
UR1C	11	f-x-f-s-k	0,2	20	
UY4	3	f-x-s-x-x-x-k-f	0,1	35	
UY41	5	f-s-x-x-x-x-k-f	0,1	31	
UY42	5	f-x-x-s-x-x-k-f	0,1	31	2)
U71	1	x-f-s-x-s-x-f-k	0,17	30	3)
U82	2	f-x-s-x-x-s-k-f	0,6	6,3	3)
U84	2	x-x-s-x-x-s-k-f	1	4	
U107	6	f-s-k-x-x-s-f	0,1	40	
U142	5	f-s-x-x-x-x-k-f	0,1	31	
U145	5	f-s-x-ic-ic-ic-k-f	0,1	40	
U201	1	x-f-x-x-s-x-f-k	0,2	20	
U404	2	f-s-x-ic-ic-ic-k-f	0,1	40	
UE1	3	f-x-s-x-x-x-k-f	0,2	25	
UE13	3	f-x-s-x-x-x-k-f	0,2	25	
VY1	3	f-x-s-x-x-x-k-f	0,05	55	
VY2	18	f-f-x-s-k	0,05	30	4)
V311	5	f-s-x-x-x-x-k-f	0,1	31	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
V312	5	f-a-x-ic-x-ic-k-f	0,1	31	
VEG51	3	f-x-a-x-x-x-k-f	0,2	20	
1D5	11	f-x-f-a-k	0,2	40	
12F	16	f-a-x-f	0,5	5	5)
12Z3	16	f-a-k-f	0,3	12,6	
14Z3	16	f-a-k-f	0,3	14	
35W4	6	x-x-f-f-a-fc-k	0,15	35	1)
35Y4	2	f-a-x-fc-x-x-k-f	0,15	35	
35Z3	2	f-a-x-x-x-x-k-f	0,15	35	
35Z4GT	1	x-f-x-x-a-x-f-k	0,15	35	1)
35Z3LT	2	f-a-x-x-x-x-k-f	0,15	35	
35Z5GT	1	x-f-fc-x-a-x-f-k	0,15	35	
40SUA	11	f-x-f-a-k	0,2	40	
40Z5	1	a-f-fc-x-a-x-f-k	0,15	45	
40Z5GT	1	x-f-fc-x-a-x-f-k	0,075	45	1)
117Z3	4	ic-x-f-f-a-k-x	0,04	117	1)
117Z4GT		a-f-x-x-a-x-f-k	0,04	117	1)

1) Ui = 117v. 2) Vo = 110. 3) Vo = 325. 4) Jo = 20. 5) Ja = 40.

HALF-WAVE RECTIFIER 3

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vo V	Jo mA
							250	130

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
EY80	7	ic-ic-k-f-f-ic-ic-ic-a	0,9	6,3	1)
G3060	3	f-k2-a1-x-x-a2-k1-f	0,2	30	
OM1	1	x-f-x-x-a-x-f-k	0,2	30	
PY31	1	x-f-x-x-a-x-f-k	0,3	17	
PY80	7	ic-ic-k-f-f-ic-ic-ic-a	0,3	19	1)
UE2	3	f-k1-a2-x-x-a1-k2-f	0,2	50	
UE100	1	f-x-a-x-ic-x-k-f	0,1	50	
UR2	1	f-k2-a1-x-x-a2-k1-f	0,2	30	
UV051	3	f-k2-a1-x-x-a2-k1-f	0,2	30	
UY1	1	f-x-a-x-x-x-k-f	0,1	50	
UY3	3	f-x-a-x-x-x-k-f	0,1	50	
UY11	4	k-x-x-f-f-x-a	0,1	50	
UY21	2	f-a-x-a-x-a-k-f	0,1	50	
UYIN	1	f-x-a-x-x-x-k-f	0,1	50	
U31	1	x-f-x-x-a-x-f-k	0,3	26	
U76	1	x-f-x-a-x-x-f-k	0,16	30	2)
U101	2	f-a1-x-x-x-a2-k-f	0,1	50	2)
U403	1	f-x-k-x-a-a-x-f	0,2	40	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
U4020	11	f-x-f-a-k	0,2	40	
25W4GT	1	a-x-k-x-a-x-f-f	0,3	25	3)
25Z4	1	a-f-x-x-a-x-k-f	0,3	25	2)

1) Jo = 180 Booster diode. 2) Jo = 100. 3) Yi = 350.

HALF-WAVE RECTIFIER 4

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vo V	Jo mA
							250	250

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
U801	1	k1-f-a1-a2-a3-a4-f-k2	0,2	80	
27SV	1	fm-f-x-x-a-x-f-k	0,9	13,25	

HALF-WAVE RECTIFIER 5

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vo V	Jo mA
							350	125

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
5GK3	25	kf-f-a	0,7	5	
6W4GT	1	a-x-k-x-a-x-f-f	1,2	6,3	
80BK	25	kf-f-a	0,7	5	

HALF-WAVE RECTIFIER — 6

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vo V	Jo mA
							750	120

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
EG420	11	f-x-f-a	1,3	4	
E4H	11	f-x-f-a	2	4	
G715	11	f-x-f-a	1,2	75	
G1404	11	f-x-f-a	1,3	4	
G4100	11	f-x-f-a	1,3	4	
RGN1404	11	f-x-f-a	1,3	4	
R0481	11	f-x-f-a	1,3	4	
R0771	11	f-x-f-a	1,25	7,5	
V4200	11	f-x-f-a	1,3	4	
81	16	f-a-x-f	1,25	7,5	
1562	11	f-x-f-a	1,25	7,5	
1832	11	f-x-f-a	1,3	4	

HALF-WAVE RECTIFIER — 7

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vo V	Jo mA
							2500	30

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
HR4	6	k-k-f-f-k-k-k-a	0,5	4	
U17	11	f-x-f-x-a	1	4	

HALF-WAVE RECTIFIER — 8

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vi Vmax	Jo mA
							5000	1,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DY30	1	ic-f-ic-x-ic-x-f-ic-a	0,2	1,25	
EY1	36	fk-x-f-x-a	0,08	6,3	1)
EY51	21	a-f-fk-f	0,08	6,3	1)
R12	11	a-fk-x-f	0,08	6,3	
SU25	1	x-f-x-x-x-x-fk-x-a	0,5	2	1)
SU3130	11	fk-x-f-x-x-a	1,0	2	
SU2150	11	f-x-f-x-a	1,15	2	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
U24	1	f-x-x-x-x-x-fk-x-a	0,15	2	1)
U37	37	f-f-a	0,14	1,4	1)
1B3GT	1	x-f-x-x-x-x-f-x-a	0,2	1,25	
1V2	7	ic-ic-ic-f-f-ic-ic-ic-a	0,625	0,3	1)
1X2	7	fs-f-x-fs-f-fs-x-f-fs-a	0,2	1,25	
1Y2	16	f-x-x-f-a	0,29	1,5	
1Z2	6	f-f-f-f-f-f-f-a	0,3	1,5	
8016	1	x-f-x-x-x-x-f-x-a	0,2	1,25	

1) Jdc = 0,5.

HALF-WAVE RECTIFIER — 9

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vi Vmax	Jo mA
							5000	5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
HR2	6	k-k-f-f-k-k-k-a	0,5	4	
HVR1	11	f-x-f-x-x-a-x	0,29	2	
HVR2	11	fk-x-f-x-x-a-x	0,65	4	1)
HVR2A	11	fk-x-f-x-x-a-x	1,5	4	1)
RFG5	4	x-x-x-f-fk-x-x-x-a	0,2	6,3	1)
R10	6	k-k-f-f-k-k-k-a	0,5	4	
SU2150A	11	fk-x-f-x-x-a-x	1,5	2	2)
U16	11	f-x-f-x-x-a-x	1	2	
U21	11	fk-x-f-x-x-a-x	1,85	2	
U22	1	fk-x-x-x-x-x-x-f-a	2	2	
U33	1	x-f-x-x-x-f-x-x-a	1	2	1)
VL561	11	f-x-f-x-x-a-x	1,2	2	1)
2X2	16	f-x-x-fk-a	1,75	2,5	
2X2A	16	f-x-x-fk-a	1,75	2,5	
2Y2	16	f-x-x-fk-a	1,75	2,5	
6Y3G	1	x-f-x-x-x-x-fk-x-a	0,7	6,3	
879	16	f-x-x-fk-a	1,75	2,5	
1877	11	f-x-f-x-x-a	0,65	4	1)

1) Jo = 3. 2) Jo = 10.

FULL-WAVE RECTIFIER

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Vo V	Jo mA
							275	75

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AZ41	5	x-a-x-x-x-a-f-f	0,75	4	1)
DG2	11	f-d2-f-d1	1	4	
DW2	11	x-a-f-a	1	4	
EZ1	3	f-x-a1-x-x-a2-k-f	0,5	6,3	1)
EZ2	3	f-x-a-x-x-a-k-f	0,4	6,3	
EZ11	4	k-x-x-f-f-x-a-a	0,29	6,3	
EZ40	5	f-a1-x-x-x-a2-k-f	0,6	6,3	
EZ41	5	f-a1-x-x-x-a2-k-f	0,9	6,3	1)
E4D	11	f-d1-f-d2	1	4	
E235	1	x-f-a-x-a-x-f-k	0,6	6,3	
FZ1	3	f-x-a-x-x-a-k-f	0,25	13	1)
G431	11	f-d2-f-d1	1	4	2)
G470	11	f-d2-f-d1	1	4	
G504	11	f-d2-d-d	1	4	2)
G660	3	f-x-a1-x-x-x-a2-k-i	0,4	6,3	
G1054	11	f-d2-f-d1	1	4	
G1380	3	f-x-a-x-x-a-k-f	0,25	12	1)
G1503	11	f-d2-f-d1	1,5	2,5	
LG5	40	f+-f+-a2-f+-f+-a1-a1	0,5	1,2	3)
OZ3	12	x-a1-a2-k	cold	cath	4)
OZ4	1	x-x-a1-x-a2-x-x-k	cold	cath	4)
OZ4A	1	x-x-a1-x-a2-x-x-k	cold	cath	4)
OZ4G	1	x-x-a1-x-a2-x-x-k	cold	cath	4)
PV495	11	f-d2-f-d1	1	4	
PV4300	11	f-d2-f-d1	1	4	
RG12D60	41	f-x-a1-a2-k-f	0,2	12,6	
RGN504	11	f-d2-f-d1	1	4	2)
RGN1054	11	f-d2-f-d1	1	4	
RGN1503	11	f-d2-f-d1	1,5	2,5	
RO337	11	f-a-f-a	1,5	2,5	
RO423	11	f-d2-f-d	1	4	2)
RO446	11	f-a-f-a	1	4	
R1	11	f-a1-fk-a2	1	4	
S11A	11	f-d1-f-d2	1	4	
U10	11	f-d2-f-d	1	4	
U147	1	x-f-a-x-a-x-f-k	0,6	6,3	
U149	2	f-x-a-ic-x-a-k-f	0,5	6,3	
VG406	11	f-d2-f-d1	1	4	2)
VG410	11	f-d2-f-d1	1	4	
VG2503	11	f-d2-f-d1	1	4	2)
VG2908	11	f-d2-f-d1	1,5	2,5	
VG3008	11	f-d2-f-d1	1	4	
V41	5	x-a-x-x-x-a-f-f	0,7	4	
V61	5	f-a-x-x-x-a-k-f	1,5	2,5	
3G130	11	f-a-f-a	1,5	2,5	
4G30	11	f-d2-f-d1	1	4	2)

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
4G105	11	f-d2-f-d1	1	4	
6AW4	17	f-a1-a2-k-f	0,6	6,3	
6AW5	1	f-a-a2-k2-a1-x-f-k1	0,6	6,3	
6AW5G	1	x-f-a2-k2-a1-x-f-k1	0,6	6,3	
6AW5GT	1	x-f-a2-k2-a1-x-f-k1	0,6	6,3	
6X4	6	a-x-f-f-x-a-k	0,6	6,3	
6X5	1	a-f-a-x-a-x-f-k	0,6	6,3	
6X5GT	1	a-f-a-x-a-x-f-k	0,6	6,3	
6Y5	12	f-x-a-k-a-f	0,8	6,3	1)
6Y5V	12	f-x-a-k-a-f	0,8	6,3	1)
6Z4	17	f-a-a-k-f	0,5	6,3	
6Z5	12	fc-f-a-k-a-f	0,8	6,3	1)5)
			0,4	12,6	
6Z6	1	a-f-a-x-a-x-f-k	0,3	6,3	1)
6ZY5G	1	x-f-a1-x-a2-x-f-k	0,3	6,3	2)
7X6	2	f-k1-a1-x-x-a2-k2-f	1,2	6,3	5)
7Y4	2	f-x-a-x-x-a-k-f	0,5	6,3	
7Z4	2	f-x-a-x-x-a-k-f	0,9	6,3	6)
12Z5	23	f-a2-k2-fc-k1-a1-f	0,4	12,6	1)5)
14X4	2	f-x-a-x-x-a-k-f	0,3	12,6	6)
25X6GT	1	a-f-a1-k1-a2-x-f-k2	0,15	25	7)
25Y5	12	f-a1-k1-k2-a2-f	0,3	25	7)
25Z5	12	f-a1-k1-k2-a2-f	0,3	25	7)
25Z6	1	a-f-a1-k1-a2-x-f-k2	0,3	25	7)
25Z6GT	1	a-f-a1-k1-a2-x-f-k2	0,3	25	7)
35RE	12	f-a2-k2-k1-a1-f	0,3	35	
35Z6G	1	a-f-a1-k1-a2-x-f-k2	0,3	35	8)
50X6	2	f-k1-a1-x-a-a2-k2-f	0,15	50	
50Y6GT	1	a-f-a1-k1-a2-x-f-k2	0,15	50	7)
50Y7GT	1	x-f-a1-k1-a2-fG-f-k2	0,15	46	7)
50Z7G	1	x-f-a1-k1-a2-fG-f-k2	0,15	50	
84	17	f-a-a-k-f	0,5	6,3	6)
117Z6GT	1	a-f-a1-k1-a2-x-f-k2	0,075	117	9)
506BU	11	f-d2-f-d1	1	4	
506	11	f-d2-f-d1	1	4	
1003	1	x-x-a1-x-a2-x-x-k	cold	cath	
1201	11	f-d2-f-d1	1,5	2,5	
1274	1	a-f-a-x-a-x-f-k	0,6	6,3	6)
1801	11	f-d2-f-d1	1	4	2)

1) Jo = 50. 2) Jo = 30. 3) Jo = 40. 4) Jo = 90mA. 5) Vi = 235V.
6) Vi = 325. 7) Vi = 2x125. 8) Jo = 100. 9) Vi = 117.

FULL-WAVE RECTIFIER — 11

S mA/V	μ	V_{g1} V	V_{g2} V	V_a V	J_a mA	J_{g2} mA	V_o V	J_o mA
							300	100
							500	60

Type	Base No.	Base Pin Connections	J_f A	V_f V	Notes
AZ1	3	f-x-a-x-x-a-x-f	1,1	4	
AZ3	3	f-x-a-x-x-a-k-f	2	4	
AZ11	4	x-x-x-f-f-x-a-a	1,1	4	
AZ21	2	f-a1-a1-x-fm-a2-a2-f	1,3	4	
AZ31	1	x-f-x-a-x-a-x-f	1,1	4	
A11D	19	a1-a2-kf-f	2	4	
CK1005	1	a-x-a-x-a-f-x-f	0,1	6,3	
DV651	3	f-x-a-x-x-a-x-f	1,1	4	
DW4-350	11	f-a-f-a	2	4	
EZ3	3	f-x-a1-x-x-a2-k-f	0,65	6,3	
GZ40	5	f-a-ic-ic-ic-a-k-f	0,75	5	
G459	3	f-x-a-x-x-a-x-f	1,1	4	
G-460	11	f-d2-f-d1	1	4	
G-1064	11	f-d2-f-d1	1	4	
G-2005	11	f-d2-f-d1	2	5	
JW4-350	11	fk-a-f-a	2	4	
PV4100	11	f-d2-f-d1	1	4	
RGN1064	11	f-d2-f-d1	1	4	
RGN2005	11	f-d2-f-d1	2	5	
RO457	11	f-a-f-a	1	4	
RO534	11	f-a-f-a	2	5	
R2	11	fk-a-f-a	2,5	4	
R4	11	f-a-f-a	1,1	4	
R42	11	fk-a-f-a	2,5	4	
R52	1	x-f-x-a-x-a-x-fk	2	5	
S11D	11	f-a-f-a	1,1	4	
UR3C	15	x-a1-k1-f-f-k2-a2	0,2	30	
UU6	1	fk-x-a-x-a-m-x-f	1,4	4	
UU9	1	f-a-ic-ic-ic-a-k-f	0,63	6,3	
U12	11	f-a-f-a	1,1	4	
U50	1	x-f-x-a-x-a-x-fk	2	5	
U143	1	x-f-x-a-x-a-x-f	1,1	4	
VG411	11	f-d2-f-d1	1	4	
VG5006	11	f-d2-f-d1	1	4	
VG5007	3	f-x-a-x-x-a-x-f	1,1	4	
VG5107	4	x-x-x-f-f-x-a-a	1,1	4	
V51	5	f-a-x-ic-x-a-k-f	0,75	4	
5W4	1	x-f-x-a-x-a-x-f	1,5	5	
5W4GT	1	x-f-x-a-x-a-x-f	1,5	5	
5Z4GT	1	x-f-x-a-x-a-x-kf	2,0	5	
5Z4	1	x-f-x-a-x-a-x-kf	2,0	5	
28Z5	2	f-x-a-fc-x-a-k-f	0,24	28	
44ZBU	11	f-a-f-a	1,1	4	

Type	Base No.	Base Pin Connections	J_f A	V_f V	Notes
80K	16	x-x-f-a1-a2-fk	2	5	
511D	11	f-a1-f-a2	2A	4V	
1005	1	a-x-a-x-a-f-x-f	0,1	6,3	
1560	11	f-d2-f-d1	2	5	
1805	11	f-d2-f-d1	1	4	
1882	3	f-x-a-x-x-a-x-f	2	5	1)

1) J_g = 125. 2) J_o = 120.

FULL-WAVE RECTIFIER — 12

S mA/V	μ	V_{g1} V	V_{g2} V	V_a V	J_a mA	J_{g2} mA	V_o V	J_o mA
							300	175
							500	120

Type	Base No.	Base Pin Connections	J_f A	V_f V	Notes
AZ4	3	f-x-a-x-x-a-x-f	2,2	4	
AZ12	4	x-x-x-f-f-x-a-a	2,2	4	
A11C	11	f-a-f-a	2,5	4	
EZ4	3	f-x-a1-x-x-a2-k-f	0,85	6,3	
EZ12	4	k-x-x-f-f-x-a1-a2	2,5	4	
E4E	11	f-a-f-a	2	4	
G2004	11	f-a-f-a	2	4	
G4120	11	f-a-f-a	2	4	
JW4-500	11	f-a-f-a	2,5	4	
MU14	11	fk-a-f-a	2,5	4	
MU12/14	11	f-a-f-a	2,5	4	
PZ30	1	x-f-a1-k1-a2-fm-f-k2	0,3	52	
RGN2004	11	f-a-f-a	2	4	
RO431	11	f-a-f-a	2	4	
RV120/500	11	f-a-f-a	2	4	
R3	11	f-a-f-a	2,5	4	
R4A	11	f-a-f-a	2,5	4	
UU5	11	f-a-f-a	2,3	4	
U12/14	11	f-a-f-a	2,0	4	
U14	11	f-a-f-a	2,5	4	
VG420	11	f-a-f-a	2	4	
VG3016	11	f-a-f-a	2	4	
W4-500	11	f-a-f-a	2	4	
4G200	11	f-a-f-a	2	4	
5Y3G	1	a-f-x-a1-x-a2-x-f	1	5	
6W5G	1	a-f-a1-x-a2-x-f-k	0,9	6,3	
441U	11	f-a-f-a	2,5	4	
460EU	11	f-a-f-a	2	4	
1561	11	f-a-f-a	2	4	

FULL-WAVE RECTIFIER — 13

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vo V	Jo mA
							350	200
							500	150

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AX1	11	f-a1-f-a2	2,4	4	
E4F	11	f-a-f-a	2	4	
G2504	11	f-a-f-a	2,3	4	
G4004	11	f-a-f-a	4	4	
G4180	11	f-a-f-a	2,4	4	
G4300	11	f-a-f-a	4	4	1)
GZ32	1	x-f-x-a-x-a-x-fk	2	5	
PV4201	11	f-a-f-a	2,2	4	
RGN2504	11	f-a-f-a	2,3	4	
RGN4004	11	f-a-f-a	4	4	
RO433	11	f-a-f-a	4	4	1)
RO452	11	f-a-f-a	2,3	4	
UU8	1	fk-x-a1-x-a2-m-x-f	2,8	4	
U81	2	ic-ic-a-ic-ic-a-fk-f	1,6	6,3	
VG421	11	f-a-f-a	2,3	4	
VG3530	11	f-a-f-a	4	4	1)
5AZ4	2	a-f-x-a1-x-a2-x-f	2	5	
5V4G	1	x-f-x-a1-x-a2-x-fk	2	5	
5Y3GT	1	a-f-x-a1-x-a2-x-f	20	5	
5Y4GT	1	a-x-a1-x-a2-x-f-f	2	5	
13	16	f-a1-a2-f	2	5	
50Z6G	1	a-f-a1-k1-a2-x-f-k2	0,3	50	
52KU	1	x-f-x-a-x-a-x-f	2	5	
54KU	1	x-f-x-a-x-a-a-x-f	2,3	5	
80	16	f-f-a-a	2	5	
80M	16	f-a1-a2-f	2	5	
82	16	f-a-a-f	3	2,5	
83	16	fk-f-a-a	2	5	
1815	11	f-a1-f-a	2,3	4	
1817	11	f-a-f-a	4	4	
4652	11	f-a1-f-a2	2,4	4	

1) Jo = 300. Vo= 350.

FULL-WAVE RECTIFIER — 14

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vo V	Jo mA
							500	225

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AX50	11	f-a1-f-a2	3,75	4	
AZ50	11	f-a1-f-a2	3	4	
FW4-500	11	f-a1-f-a2	3	4	
LG6	40	f-f-k2-a-a2-x-a1-k1	0,63	12,6	
RG12D300	32	a2-x-f-f-k-x-x-a1	0,8	12,6	
RV200/600	11	f-a1-f-a2	2	4	
U18	11	f-a1-f-a2	3,75	4	
U18/20	11	f-a-f-a	3	4	
U52	1	x-f-x-a-x-a-x-fk	3	5	
4/100BU	11	f-a1-f-a2	2,5	4	
5T4	1	x-f-x-a-x-a-x-f	2	5	
5U4G	1	x-f-x-a-x-a-a-x-f	3	5	
5X4G	1	a-x-a-x-a-a-x-f-f	3	5	
5Z3	16	f-a-a-f	3	5	
450U	11	fk-a-f-a	1,75	5	
1275	16	f-a-a-f	3	5	

FULL-WAVE RECTIFIER — 15

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vo V	Jo mA
							850	150

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
FW4-800	11	f-d2-f-d1	3	4	
5R4GY	1	x-f-x-a1-x-a2-x-f	2	5	

FULL-WAVE RECTIFIER								16
S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vo V	Jo mA
							1200	25

Type	Base		Jf A	Vf V	Notes
	No.	Pin Connections			
5X3	16	f-a-a-f	2	5	
405BU	11	f-d2-f-d1	0,5	4	

RECTIFIER (VOLTAGE DOUBLER)								17
S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vo V	Jo mA
							750	20

Type	Base		Jf A	Vf V	Notes
	No.	Pin Connections			
225DU	15	x-a1-f1-f1-f2-f2-a2	2X0,5	2	

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TRIODE								1
S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1	38	-2,5		200	2,5			

Type	Base		Jf A	Vf V	Notes
	No.	Pin Connections			
AR4100	11	f-g1-f-a-km	1	4	1)
AR4101	11	f-g1-f-a-km	1	4	2)
E438	11	f-g1-f-a-km	1	4	
NW4	11	f-g1-f-a-km	1	4	
REN1004	11	f-g1-f-a-km	1	4	2)
W415N	11	f-g1-f-a-km	1	4	
W4060	11	f-g1-f-a-km	1	4	

1) S = 2. 2) S = 3.

TRIODE								2
S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,8	8	-14		100	7			

Type	Base		Jf A	Vf V	Notes
	No.	Pin Connections			
AC/P	11	f-g1-f-a-k	1,0	4	2)
E409	11	f-g1-f-a-km	1	2	5)
6AE5GT	1	s-f-a-x-g-x-f-k	0,3	6,3	
6AF5G	1	s-f-a-x-g1-x-f-k	0,3	6,3	
6P5G	1	s-f-a-x-g-x-f-k	0,3	6,3	1)
12A	16	f-a-g1-f	0,25	5	
12E5GT	1	s-f-a-x-g-x-f-k	0,15	12,6	1)
26B	16	f-a-g1-f	1,05	1,5	
27	17	f-a-g1-k-f	1,75	2,5	3)
37	17	f-a-g1-k-f	0,3	6,3	
56	17	f-a-g1-k-f	1,0	2,5	1)
56AS	17	f-a-g1-k-f	0,3	6,3	1)
76	17	f-a-g1-k-f	0,3	6,3	1)
485	17	f-a-g1-k-f	1,25	3,0	4)
4614	11	f-g1-f-a-km	1	4	5)

1) μ = 13. Va = 250. 2) S = 3,5. 3) S = 0,9. Vg1 = -21. 4) μ = 13. Vg1 = -9. 5) Ja = 12.

TRIODE 3

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2	100	-1,5		200	1			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
A30B	19	a-g1-f-f-km	0,65	4	2)3)
AR495	11	f-g1-f-a-km	1	4	1)
AR4120	11	f-g1-f-a-km	1	4	3)
E499	11	f-g1-f-a-km	;	4	3)
H63	1	m-f-x-a-x-x-f-k-g1	0,3	6,3	
NR41	11	f-g1-f-a-km	;	4	3)
REN914	11	f-g1-f-a-km	1,2	4	1)
W4110	11	f-g1-f-a-km	1,2	4	3)
6F5	1	a-f-x-a-x-x-f-k-g1	0,3	6,3	
6F5GT	1	a-f-x-a-x-x-f-k-g1	0,3	6,3	
6K5G	1	a-f-a-x-x-x-f-k-g1	0,3	6,3	3)4)
6SF5	1	a-k-g1-x-a-x-f-f	0,3	6,3	
6SF5GT	1	a-k-g1-x-a-x-f-f	0,3	6,3	
7B4	2	f-a-x-x-x-g1-k-f	0,3	7	
12F5	1	a-f-x-a-x-x-f-k-g1	0,15	12,6	
12F5GT	1	a-f-x-a-x-x-f-k-g1	0,15	12,6	
12SF5	1	a-k-g1-x-a-x-f-f	0,15	12,6	
12SF5GT	1	a-k-g1-x-a-x-f-f	0,15	12,6	

1) S = 5. Ja = 4,5. 2) S = 3,5. 3) Ja = 2. 4) μ = 70.

TRIODE 4

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2,5	30	-5		220	6			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AC2	3	f-m-a-x-x-x-k-f-g1	0,65	4	
AC495	11	f-g1-f-a-km	1	4	1)
A430N	11	f-g1-f-a-km	1	4	1)
A4110	11	f-g1-f-a-km	1	4	1)
B2038	11	f-g1-f-a-k	0,18	20	2)
CC1	3	f-m-a-x-x-x-k-f-g1	0,2	13	7)
CC2	3	f-m-a-x-x-x-k-f-g1	0,2	13	
D4A	3	f-m-a-x-x-x-k-f-g1	0,65	4	
D13U	3	f-m-a-x-x-x-k-f-g1	0,2	13	7)
EC2	3	f-m-a-x-x-x-k-f-g1	0,1	6,3	
E424N	11	f-g1-f-a-km	1	4	
E428	11	f-g1-f-a-km	1	4	
HM20	11	f-g1-f-a-k	0,18	20	2)

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
L63	1	m-f-a-x-g1-x-f-k	0,3	6,3	3)
L77	6	a-ic-f-f-a-g1-k	0,15	6,3	3)6)
MHL4	11	f-g1-f-a-km	1	4	
ND4	11	f-g1-f-a-km	1	4	
NT51	3	f-m-a-x-x-x-k-f-g1	0,65	4	
REN904	11	f-g1-f-a-km	1	4	1)
REN1821	11	f-g1-f-a-km	0,18	20	2)
R2018D	11	f-g1-f-a-k	0,18	20	2)
T13U	3	f-m-a-x-x-x-k-f-g1	0,2	13	
T435	3	f-m-a-x-x-x-k-f-g1	0,65	4	
T1335	3	f-m-a-x-x-x-k-f-g1	0,2	13	
UT2	3	f-m-a-x-x-x-k-f-g1	0,2	15	
XXL	2	f-a-x-x-x-g1-k-f	0,32	7	3)

1) Vg = +3,5. 2) Vg = +3. 3) Vg1 = +8. 5) Ja = 12. 6) μ = 16.
7) Ja = 2,5.

TRIODE 5

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
3	45	-3		200	4			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
41MTL	11	f-g1-f-a-km	1	4	

TRIODE 6

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
3,2	10,5	-16		250	20			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
EC31	1	x-f-a-x-g1-x-f-k	0,65	6,3	
ML4	11	f-g1-f-a-k	1	4	
TT4	11	f-g1-f-a-k	1	4	
T635	3	f-m-a-x-x-x-k-f-g1	0,1	6,3	
41FP	11	f-g1-f-a-km	1	4	

TRIODE — 7

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
4	30	-4		225	5			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
ACHL	11	f-g1-f-a-km	1,0	4	
A30D	19	a-g1-f-f-km	0,65	4	
C30B	15	a-x-x-f-f-k-a-g1	0,2	13	
DA	15	x-x-x-f-f-k-a-g1	0,2	13	2)
D4	11	f-g1-f-a-k	1,5	4	
EC53	20	a-g1-f-k-f	0,25	6,3	1)
HLA1	16	f-g1-f-a-km	1	4	
HL13	3	f-m-a-x-x-x-k-f-g1	0,2	13	
HL13C	15	m-x-x-f-f-k-a-g1	0,2	13	
HL41	1	f-k-a-x-g1-m-x-f	0,6	4	2)
HL1320	16	m-x-x-f-f-k-a-g1	0,2	13	2)
MH4	11	f-g1-f-a-km	0,15	4	
VC1	3	m-f-f-k-x-g1-x-x-a	0,05	55	1)
V312	11	f-x-f-a-km-g1	0,65	4	1)
41MHF	11	f-g1-f-a-km	1	4	2)
41MHL	11	f-g1-f-a-km	1	4	
354V	11	f-g1-f-a-km	0,65	4	

1) S = 3. Ja = 7,5. 2) Vg1 = -2. Ja = 2.

TRIODE — 8

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
5,5	55	-2		250	11			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
HLA2	11	f-g-f-a-km	1	4	1)
6AB4	6	a-x-f-f-x-g1-k	0,15	6,3	
6K4	29	k-f-f-g-a	0,15	6,3	2)

1) Ja = 8mA. 2) Va = 100V. μ = 20.

TRIODE — 9

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
6,5	75	-1,5		200	2,5			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AC2HL	11	f-g1-f-a-km	1,0	4	
MH41	11	f-g1-f-a-km	1	4	1)
41MH	11	f-g1-f-a-km	1	4	2)

1) Ja = 5. 2) S = 4.

TRIODE — 10

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
7	17	-7		275	25			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
P41	1	f-k-a-x-g1-m-x-f	0,95	4	1)
L4	11	f-g1-f-a-k	0,15	4	
4D1	15	x-x-x-f-k-a-g	0,2	13	2)
6L18	4	f-a-ic-a-ic-g1-k-f	0,3	6,3	3)
41MP	11	f-g1-f-km-a	1	4	4)

1) Va max = 700. 2) Ja = 10. S = 4. μ = 40. 3) OSC. 4) Ja = 24.

DOUBLE ANODE TRIODE — 11

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
1	25			250				T1
0,95	33			-"-				T2

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6AE6G	1	x-f-a1-a2-g-x-f-k	0,15	6,3	

DIODE TRIODE — 12

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
6,5	60	-2		250	6			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
EAC91	6	d-kD-f-f-kT-g1-a	0,3	6,3	

DOUBLE DIODE TRIODE — 13

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
1,1	8	-20		250	8			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6V7G	1	s-f-a-d1-d2-x-f-k-g1	0,3	6,3	
55	12	f-a-d1-d2-k-f-g1	1,0	2,5	
55S	12	f-a-d1-d2-k-f-g1	1,0	2,5	
85/S	12	f-a-d1-d2-k-f-g1	0,3	6,3	

DOUBLE-DIODE-TRIODE — 14

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
1,5	85	-2		220	1,5			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DH63	1	s-f-a-d1-d2-x-f-k-g1	0,3	6,3	
DH76	1	s-f-a-d1-d2-x-f-k-g1	0,16	13	
DH77	6	g1-k-f-f-d1-d2-a	0,3	6,3	
DH81	2	f-a-g1-x-d1-d2-k-f	0,3	6,3	
DH101	2	f-a-g1-k-d1-d2-k-f	0,1	19	
DH107	6	g1-k-f-f-d1-d2-a	0,1	19	
DH149	2	f-a-g-ic-d1-d2-k-f	0,15	6,3	
EBC41	5	f-a-g-s-d1-d2-k-f	0,23	6,3	
UBC41	5	f-a-g-s-d1-d2-k-f	0,1	14	
XXFM	2	f-a-g1-k1-d1-d2-k2-f	0,3	6,3	
6AD5GT	1	s-f-a-x-g1-x-f-k	0,3	6,3	
6AQ6	6	g-k-f-f-d1-d2-a	0,15	6,3	
6AQ7GT	1	d1-kD-d2-g1-a-kT-f-f	0,3	6,3	3)
6AT6	6	g-k-f-f-d1-d2-a	0,3	6,3	
6AV6	6	g1-k-f-f-d1-d2-a	0,3	6,3	
6AW7GT	1	s-g1-d1-d2-k-a-f-f	0,3	6,3	1)

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6BD7	7	a-g1-k-f-f-d1-s-d2-io	0,23	6,3	
6BK6	6	g1-k-f-f-d1-d2-a	0,3	6,3	
6BT6	6	g1-k-f-f-d1-d2-a	0,3	6,3	
6B6G	1	s-f-a-d1-d2-x-f-k-g1	0,3	6,3	2)
6Q6G	1	x-f-a-x-d1-x-f-k-g1	0,15	6,3	
6Q7	1	s-f-a-d1-d2-x-f-k-g1	0,3	6,3	
6Q7G	1	x-f-a-d1-d2-x-f-k-g1	0,3	6,3	
6SQ7GT	1	s-g1-k-d1-d2-a-f-f	0,3	6,3	2)
6SZ7	1	s-g1-k-d1-d2-a-f-f	0,15	6,3	
6S8GT	1	d1-k13-d2-d3-k2-a-f-f-g1	0,3	6,3	2)
6T7G	1	s-f-a-d1-d2-x-f-k-g1	0,15	6,3	
6T8	7	d1-d2-k2-f-f-d3-k13-g1-a	0,45	6,3	
6ZDH3	12	f-a-d-x-x-k-f-g1	0,3	6,3	
6ZDH3A	12	f-a-g1-d-k-f	0,3	6,3	
7B6LM	2	f-a-g1-k-d1-d2-k-f	0,3	6,3	2)
7B6	2	f-a-g1-k-d1-d2-k-f	0,32	7,0	2)
7C6	2	f-a-g1-k-d1-d2-k-f	0,16	7,0	
7K7	2	f-kT-a-g-d1-d2-kD-f	0,32	7,0	3)
7X7	2	f-a-g1-k1-d1-d2-k2-f	0,3	6,3	
12AV6	6	g1-k-f-f-d1-d2-a	0,15	12,6	
12BK6	6	g1-k-f-f-d1-d2-a	0,15	12,6	
12BT6	6	g1-k-f-f-d1-d2-a	0,15	12,6	
12Q7	1	s-f-a-d1-d2-x-f-k-g1	0,15	12,6	
12Q7GT	1	s-f-a-d1-d2-x-f-k-g1	0,15	12,6	
12SQ7	1	s-g1-k-d1-d2-a-f-f	0,15	12,6	2)
12SQ7GT	1	s-g1-k-d1-d2-a-f-f	0,15	12,6	2)
12S8GT	1	d1-kT-d3-d2-kD-a-f-f-g	0,15	12,6	2)
12ZDH3A	12	f-a-g1-d-k-f	0,175	12	
14B6	2	f-a-g-k-d1-d2-k-f	0,6	14	2)
14X7	2	f-a-g1-k1-d1-d2-k2-f	0,15	6,3	
19T8	7	d1-d2-kD-f-f-d3-kT-g-a	0,15	18,9	
75	12	f-a-d1-d2-k-f-g1	0,3	6,3	
75S	12	f-a-d1-d2-k-f-g1	0,3	6,3	2)
1103	15	d1-x-d2-f-f-k-a-g1	0,2	13	

1) Va = 100. Vg = 0. 2) Ja = 0,9 mA. 3) Ja = 2,4.

DOUBLE DIODE TRIODE — 15

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
1,6	30	-5		200	4			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
ABC1	3	f-m-aT-x-d1-d2-k-f-g1	0,65	4	2)
A23A	15	d-s-d-f-f-k-a-g1	0,65	4	
CBC1	3	f-m-a-x-d1-d2-k-f-g1	0,2	13	
C23B	15	d-s-d-f-f-k-a-g1	0,2	13	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DH147	1	m-f-a-d-d-x-f-k-g1	0,2	6,3	11)
DL63	1	m-f-a-d1-d2-x-f-k-g1	0,3	6,3	2)
DL82	2	f-a-g1-ic-d1-d2-k-f	0,3	6,3	2)
DL145	5	f-a-g1-s-d-d-k-f	0,1	15	
DT436	3	f-m-a-x-d-d-k-f-g1	0,65	4	
DT620	3	f-m-a-x-d-d-k-f-g1	0,2	6,3	
DT1336	3	f-m-a-x-d1-d2-k-f-g1	0,2	13	
DDT	15	d1-m-d2-f-f-k-a-g1	1	4	6)
DDT4S	3	f-m-a-x-d1-d2-k-f-g1	0,12	4	6)7)
DDT6S	3	f-m-a-x-d-d-k-f-g1	0,2	6,3	
EBC1	3	f-m-a-x-d1-d2-k-f-g1	0,4	6,3	
EBC3	3	f-m-at-x-ad-ad-k-f-g1	0,2	6,3	
EBC11	4	g1-km-x-f-f-d1-d2-a	0,2	6,3	3)
EBC33	1	m-f-at-d1-d2-x-f-k-g1	0,2	6,3	
HAD	15	d-x-d-f-f-k-a-g1	0,2	13	2) 8)
MHD4	15	d1-m-d2-f-f-k-a-g1	1	4	1) 6)
OM4	1	m-f-a-d1-d2-x-f-k-g1	0,2	6,3	
TDD4	15	d1-m-d2-f-f-k-a-g1	0,65	4	
UDT1	3	f-m-a-x-d-d-k-f-g1	0,2	15	9)
85AS	12	f-a-d1-d2-k-f-g1	0,3	6,3	3) 5)
202DDT	15	d1-m-d2-f-f-k-a-g1	0,2	20	2) 6)
9002	6	a-k-f-f-a-g1-k	0,15	6,3	10)

1) Vg1 = +4. 2) Vg1 = +3. 3) Vg1 = +8. 4) Vg1 = +25. 5) μ = 20. 6) μ = 40. 7) S = 3,6. 8) Ja = 2. 9) S = 3. Ja = 10. 10) no diodes. 11) S = 2.

DOUBLE DIODE TRIODE — 16

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2	20	-8		250	8			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6BF6	6	g1-k-f-f-d1-d2-a	0,3	6,3	
6BU6	6	g1-k-f-f-d1-d2-a	0,3	6,3	
6C5	1	s-f-a-x-g1-x-f-k	0,3	6,3	1)
6C5GT	1	s-f-a-x-g1-x-f-k	0,3	6,3	1)
6C7	23	f-a-s-d1-d2-k-f-g1	0,3	6,3	2)
6J5	1	s-f-a-x-g1-x-f-k	0,3	6,3	1)
6J5GT	1	s-f-a-x-g1-x-f-k	0,3	6,3	1)
6L5G	1	s-f-a-x-g1-x-f-k	0,15	6,3	1)
6R7G	1	s-f-a-x-g1-x-f-k	0,3	6,3	
6R7GT	1	s-f-a-x-g1-x-f-k	0,3	6,3	
6R8	7	d12-d11-k11-f-f-d22-k12-a2-g12	0,45	6,3	
6SR7	1	s-g1-k-d1-d2-a-f-f	0,3	6,3	
6SR7GT	1	s-g1-k-d1-d2-a-f-f	0,3	6,3	
6ST7	1	s-g1-k-d1-d2-a-f-f	0,15	6,3	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
7A4	2	f-a-x-x-x-g1-k-f	0,75	6,3	1)
7E6	2	f-a-g1-ic-d1-d2-k-f	0,30	6,3	
12BF6	6	g1-k-f-f-d1-d2-a	0,15	12,6	
12BU6	6	g1-k-f-f-d1-d2-a	0,15	12,6	
12J5GT	1	s-f-a-x-g1-x-f-k	0,15	12,6	1)
12SR7	1	s-g1-k-d1-d2-a-f-f	0,15	12,6	
12SW7	1	s-g1-k-d1-d2-a-f-f	0,15	12,6	
14A4	2	f-a-x-x-x-g1-k-f	0,15	12,6	1)
14E6	2	f-a-g1-ic-d1-d2-k-f	0,15	12,6	
26C6	6	g1-k-f-f-d1-d2-a	0,07	26,5	

1) no diodes. 2) S = 1,3. Ja = 4,5.

DOUBLE DIODE TRIODE — 17

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2,5	30	-2		250	2,5			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AC/HL/DD	15	d1-m-d2-f-f-k-a-g1	1	4	
HL/41/DD	1	f-k-a-x-d2-m-d1-f-g1	0,6	4	
HL/42/DD	1	f-k-a-x-d2-m-d1-f-g1	0,65	4	
HL/133/DD	1	f-k-a-x-d2-m-d1-f-g1	0,2	13	
HLDD1320	15	d1-m-d2-f-f-k-a-g1	0,2	13	
HAD	15	d1-x-d2-f-f-k-a-g1	1	4	
10LD11	2	f-a-g1-s-d2-d1-k-f	0,1	15	
11A2	15	d1-x-d2-f-f-k-a-g1	1,0	4	1)
11D5	15	d1-x-d2-f-f-k-a-g1	0,15	13	2)

1) μ = 50. 2) S = 1,5. μ = 40.

DOUBLE DIODE TRIODE — 18

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
4,5	80	-2,5		250	3			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DH30	15	d1-m-d2-f-f-k-a-g1	0,3	13	
HSD	15	d1-m-d2-f-f-k-a-g1	0,3	13	

DOUBLE TRIODE — 19

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,75	80	-3		250	3			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
ECC35	1	g11-a1-k1-g12-a2-k2-f-f	0,4	6,3	
6C8G	1	s-f-a1-k1-g12-a2-f-k2-g11	0,3	6,3	1)
6L19	5	f-a2-g12-k2-a1-g11-k1-k1-f	0,4	6,3	2)
6SC7	1	s-a1-g11-g12-a2-k-f-f	0,3	6,3	
6SC7GT	1	s-a1-g11-g12-a2-k-f-f	0,3	6,3	
6SL7GT	1	g11-a1-k1-g12-a2-k2-f-f	0,3	6,3	
6SU7GTY	1	g11-a1-k1-g12-a2-k2-f-f	0,3	6,3	
7F7	2	f-k1-a1-g11-g12-a2-k2-f	0,3	6,3	
12AK7	7	a1-g11-k1-f-f-a2-g12-k2-fc	0,15	12,6	
12AX7	7	a1-g11-k1-f-f-a2-g12-k2-fc	0,15	12,6	
			0,3	6,3	
12AX7GP	7	a1-g11-k1-f-f-a2-g12-k2-fc	0,15	12,6	
12SC7	1	s-a1-g11-g12-a2-k-f-f	0,15	12,6	
12SL7GT	1	g11-a1-k1-g12-a2-k2-f-f	0,15	12,6	
14F7	2	f-k1-a1-g11-g12-a2-k2-f	0,15	12,6	
5691	1	g11-a1-k1-g12-a2-k2-f-f	0,6	6,3	

1) μ = 36. 2) μ = 60.

DOUBLE TRIODE — 20

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2	10	-16		250	10			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
ECC34	1	g11-a1-k1-g12-a2-k2-f-f	0,95	6,3	
6AE7GT	1	x-f-a-g11-k11-g12-f-k2	0,5	6,3	2)
12C	12	f-a1-g11-g12-a2-f	0,5	5	1)

1) Va = 180. 2) TWINGRID TRIODE.

DOUBLE TRIODE — 21

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2	25	-6		225	8			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AA61	5	f-a1-g11-k1s-a2-g12-k2-f	0,6	6,3	
B36	1	g12-a2-k2-g11-a1-k1-f-f	0,3	12,6	
B65	1	g12-a2-k2-g11-a1-k1-f-f	0,6	6,3	
ECC31	1	x-f-a1-g11-g12-a2-f-k	0,95	6,3	1)
ECC32	1	g11-a1-k1-g12-a2-k2-f-f	0,95	6,3	1)
ECC33	1	g11-a1-k1-g12-a2-k2-f-f	0,4	6,3	
ECC40	5	f-a1-g11-k1s-a2-g12-k2-f	0,6	6,3	
XXD	2	f-k1-a1-g11-g12-a2-k2-f	0,15	12,6	
6AH7GT	1	g11-k1-a1-k2-g12-a2-f-f	0,3	6,3	
6P8G	1	s-f-a1-k1-g12-a2-f-k2-g11	0,6	6,3	
6SN7GT	1	g11-a1-k1-g12-a2-k2-f-f	0,6	6,3	2)
6SN7GTY	1	g12-a2-k2-g11-a1-k1-f-f	0,6	6,3	
7AF7	2	f-k1-a1-g11-g12-a2-k2-f	0,3	6,3	
7F8	2	g11-f-a1-k1-k2-a2-f-g12	0,3	6,3	4)
7N7	2	f-k1-a1-g11-g12-a2-k2-f	0,60	6,3	2)
12AH7GT	1	g11-k1-a1-k2-g12-a2-f-f	0,15	12,6	
12AU7	7	a1-g11-k1-f-f-a2-g12-k2-fc	0,15	12,6	
12AU7	7	a1-g11-k1-f-f-a2-g12-k2-fc	0,3	6,3	
12SN7GT	1	g11-a1-k1-g12-a2-k2-f-f	0,15	12,6	
12SX7GT	1	g11-a1-k1-g12-a2-k2-f-f	0,3	12,6	3)
14AF7	2	f-k1-a1-g11-g12-a2-k2-f	0,15	12,6	
14F8	2	g11-f-a1-k1-k2-a2-f-g12	0,15	6,3	
14N7	2	f-k1-a1-g11-g12-a2-k2-f	0,3	12,6	
25SN7GT	1	g12-a2-k2-g11-a1-k1-f-f	0,15	25	
5692	1	g12-a2-k2-g11-a1-k1-f-f	0,6	6,3	

1) Ws = 5. 2) Ja = 9mA. 3) RK = 500 4) μ = 48.

VHF-TRIODE — 22

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2	25	-5		180	4,5			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
E1C	24	f-a-g1-f-k	0,15	6,3	
955	24	f-a-g1-f-k	0,15	6,3	
4671	24	f-a-g1-f-k	0,15	6,3	
4675	24	f-a-g1-f-k	0,235	4	

VHF-TRIODE — 23

S mA/V	μ	V_{g1} V	V_{g2} V	V_a V	J_a mA	J_{g2} mA		
3,5		-1		100	24			

Type	Base No.	Base Pin Connections	J_f A	V_f V	Notes
RL12T1	41	f-x-a-g1-k-f	0,065	12,6	
SD1A	41	f-x-a-g1-k-f	0,55	1,9	

VHF-TRIODE — 24

S mA/V	μ	V_{g1} V	V_{g2} V	V_a V	J_a mA	J_{g2} mA		
5,5	16	2		150	30			

Type	Base No.	Base Pin Connections	J_f A	V_f V	Notes
EC81	7	g1-x-k-f-f-x-x-a-x	0,2	6,3	
6R4	7	g1-x-k-f-f-x-x-a-x	0,2	6,3	

VHF-TRIODE — 25

S mA/V	μ	V_{g1} V	V_{g2} V	V_a V	J_a mA	J_{g2} mA		
6,5	25	2,6		250	10			

Type	Base No.	Base Pin Connections	J_f A	V_f V	Notes
A1714	6	g1-k-f-f-x-ic-a	0,55	6,3	1)
EC52	8	f-g1-k-a-x-x-x-x-f	0,43	6,3	7)
6C4	6	a-ic-f-f-a-g1-k	0,15	6,3	2)
6F4	26	f-g1-a-a-g1-f-k	0,225	6,3	3) 4)
6N4	6	g1-k-f-f-a-k-g1	0,2	0,3	4)
7E5	2	g1-f-a-k-g1-k-a-f	0,15	6,3	5) 6)
1201	2	g1-f-a-k-g1-k-a-f	0,15	6,3	6) 5)

1) Va = 150. VHF Amp. 2) Vg1 = +8,5v. 3) VHF. 4) Va = 180V. Ja = 12 mA. 5) S = 3 mA/v. 6) VHF. 7) μ = 60.

VHF-TRIODE — 26

S mA/V	μ	V_{g1} V	V_{g2} V	V_a V	J_a mA	J_{g2} mA		
8	17	0		100	35			

Type	Base No.	Base Pin Connections	J_f A	V_f V	Notes
P61	1	f-k-a-x-g1-m-x-f	0,6	6,3	

VHF-TRIODE — 27

S mA/V	μ	V_{g1} V	V_{g2} V	V_a V	J_a mA	J_{g2} mA		
8,5	100	1,5		250	10			

Type	Base No.	Base Pin Connections	J_f A	V_f V	Notes
EC54	8	f-g1-g1-a-a-g1-g1-k-f	0,45	6,3	
EC91	6	g1-k-f-f-k-g1-a	0,3	6,3	
RL37	8	f-g1-g1-a-a-g1-g1-k-f	0,45	6,3	

VHF-TRIODE — 28

S mA/V	μ	V_{g1} V	V_{g2} V	V_a V	J_a mA	J_{g2} mA		
12	80	-1,5		250	15			

Type	Base No.	Base Pin Connections	J_f A	V_f V	Notes
EC80	7	g1-g1-k-f-f-x-g1-g1-a	0,48	6,3	
6J4	6	g1-k-f-f-g1-g1-a	0,4	6,3	1)
6Q4	7	g1-g1-k-f-f-x-g1-g1-a	0,48	6,3	

1) Va = 150. μ = 55.

VHF-DOUBLE-TRIODE — 29

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
5,5	35	-1		100	9			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
ECC81	7	a1-g11-k1-f-f-a2-g12-k-fc	0,15 0,3	12,6 6,3	1)
ECC91	6	a1-a2-f-f-g12-g11-k	0,45	6,3	
6J6	6	a1-a2-f-f-g12-g11-k	0,45	6,3	
12AT7	7	a1-g11-k1-f-f-a2-g12-k-fc	0,15 0,3	12,6 6,3	1)
19J6	6	a1-a2-f-f-g12-g11-k	0,15	18,9	

1) Va = 200.

OUTPUT TRIODE — 30

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
1,8	4	-180		800	35.		10k	8

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
LK7115	11	f-g1-f-a	1,1	7,5	
P40/800	11	f-g1-f-a	0,8	7,2	
RV239	11	f-g1-f-a	1,1	7,2	

OUTPUT TRIODE — 31

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
2	5	-40		250	35		5	1,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AC/P1	11	f-g1-f-a-k	1,0	4	2)
45	16	f-a-g1-f	1,5	2,5	
50	16	f-a-g1-f	1,25	7,5	1)
183/483	16	f-a-g1-f	1,25	5	1)

1) Vg1 = 60. 2) Ra = 9.

OUTPUT TRIODE — 32

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
2	4	-85		600	55		4,2	5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
P25/450	11	f-g1-f-a	1,25	7,5	

OUTPUT TRIODE — 33

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
2,1	4	-80		400	55		4k	3,4

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
F704	11	f-g1-f-a	1,25	7,5	

OUTPUT TRIODE — 34

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
2,2	5	-40		220	30		3,5k	1,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
D404	11	f-g1-f-a	0,65	4	
K435/10	11	f-g1-f-a	0,65	4	
LK460	11	f-g1-f-a	0,65	4	
P460	11	f-g1-f-a	0,65	4	
RE604	11	f-g1-f-a	0,65	4	2)
71A	16	f-a-g1-f	0,25	5	1)

1) Va = 180. μ = 3. Wo = 0,8. 2) S = 6. Wo = 4.

OUTPUT TRIODE — 35

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
2,3	7	-90		800	35		11k	9

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
E707	23	f-f-a-g1	1,25	7,2	
LK7110	23	f-f-a-g1	1,25	7,5	
P41/800	11	f-g1-f-a	0,8	7,2	
RV258	23	f-f-a-g1	1,25	7,5	
4624	23	f-f-a-g1	1,1	7,2	

OUTPUT TRIODE — 36

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
2,7	9	-36		400	30		6k	2,6

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
E406N	11	f-g1-f-a	1	4	
LK4110	11	f-g1-f-a	1	4	
015/400	11	f-g1-f-a	1	4	
P4100	11	f-g1-f-a	1	4	1)
RE614	11	f-g1-f-a	1	4	
U4H	11	f-g1-f-a	1	4	

1) Wo = 7.

OUTPUT TRIODE — 37

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
3	6	-68		500	24		12k	5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
E406N	11	f-g1-f-a	1	4	
4613	11	f-g1-f-a	1	4	

OUTPUT TRIODE — 38

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
3	3	-100		400	65		4	7

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
P25/500	11	f-g1-f-a	1,1	6	

OUTPUT TRIODE — 39

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
3,4		13		250	32		7k	4

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6AC5GT	1	x-f-a-x-g1-x-f-k	0,4	6,3	

OUTPUT TRIODE — 40

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
3,8		15		110	45			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
25AC5GT	1	x-f-a-x-g-x-f-k	0,3	25	

OUTPUT TRIODE — 41

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
4	10	-40		550	45		7k	6

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
P410	11	f-g1-f-a	2	4	
LK4200	11	f-g1-f-a	2	4	
PX25	11	f-g1-f-a	2	4	
U4E	11	f-g1-f-a	2	4	
U4F	11	f-g1-f-a	1	4	

OUTPUT TRIODE — 42

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
6	5	-40		275	55		2,5k	4

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
ACC42	11	f-g1-f-a	2	2	
ACC44	11	f-g1-f-a	1	4	
AD1	3	f-x-a-x-g1-x-x-f	0,95	4	
EB	11	f-g1-f-a	1,5	4	1)
ED	24	g1-x-f-a-f-x-m	1,5	4	
LP4	11	f-g1-f-a	1	4	
PA20	11	f-g1-f-a	2	2	
PP3/250	11	f-g1-f-a	1	4	
PX4	11	f-g1-f-a	1	4	
S30C	11	f-g1-f-a	1	1	
S30D	11	f-g1-f-a	2	2	
2P	11	f-g1-f-a	2	2	2)
4XP	11	f-g1-f-a	1	4	
6A3	16	f-a-g1-f	1	6,3	
6A5G	1	a-f-a-x-g1-x-f-kfc	1,25	6,3	
1276	16	f-a-g1-f	1,14	4,5	
4683	12	f-m-a-x-g1-x-x-f	0,95	4	

1) Ja = 85. 2) Vg1 = -22. Wo = 2.

OUTPUT TRIODE — 43

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
6	9	-32		400	60		2,7k	6

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
PP5/400	11	f-g1-f-a	2	4	

OUTPUT TRIODE — 44

S mA/V	μ	Vg1 V	Vg2 Vn	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
8		-10		200	35		3k	2

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
PA1	11	f-g-f-a-km	2	4	1)
41MXP	11	f-g1-f-a-km	1	4	
402P	15	m-x-x-f-f-k-a-g1	0,2	40	

1) S = 12. Ra = 4.

OUTPUT TRIODE — 45

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra Ω	Wo W
8,5	7	-115		475	60		5k	10

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
DA30	11	f-g1-f-a	2	4	
DO30	11	f-g1-f-a	2	4	
V503	6	f-g1-f-a	2	4	

DOUBLE OUTPUT TRIODE — 46

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra Ω	Wo W
2,5		0		200			12k	4,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
EDD11	4	g11-km-x-f-f-g12-a2-a1	0,4	6,3	1)
6Z7G	1	x-f-a1-g11-g12-a2-f-k	0,3	6,3	

1) Vg = +6.

DOUBLE OUTPUT TRIODE — 47

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
3,2		0		275	35		8	10

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6A6	23	f-a1-g11-k-g12-a2-f	0,8	6,3	
6N7	1	s-f-a1-g11-g12-a2-f-k	0,8	6,3	
6N7GT	1	x-f-a1-g11-g12-a2-f-k	0,8	6,3	
6Y7G	1	s-f-a-g11-g12-x-f-k	0,6	6,3	1)
53	23	f-a1-g11-k-g12-a2-f	2,0	2,5	
79	18	f-a1-g11-k-a2-f-g12	0,6	6,3	1)

1) Wo = 8. Ra = 12.

PENTODI A.F.

HF- PENTODE (TETRODE) VAR.MU. — 1

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
1		-2	100	200	6	1		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AS4105	11	f-g1-f-g2-km-a	1	4	
E445	11	f-g1-f-g2-km-a	1,1	4	
H4125D	11	f-g1-f-g2-km-a	1	4	
NVS4	11	f-g1-f-g2-km-a	1	4	
RENS1214	11	f-g1-f-g2-km-a	1	4	1)
S415N	11	f-g1-f-g2-km-a	1	4	

1) S = 2. Ja = 3.

HF-PENTODE (TETRODE) VAR. MU. — 2

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
2		-2,5	100	250	5	1,7		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AC/SG	11	f-g1-f-g2-km-a	1,0	4	
AC/SGVM	11	f-g1-f-g2-km-a	1,0	4	
AF2	11	f-g1-f-g2-kg3m-a	1,1	4	
B2047	11	f-g1-f-g2-km-a	0,18	20	
CF2	3	f-m-a-g2-x-g3-k-f-g1	0,2	13	
EF2	3	f-m-a-g2-x-g3-k-f-g1	0,4	6,3	
EF9	3	f-m-a-g2-x-g3-k-f-g1	0,2	6,3	
EF11	4	g1-kg3m-x-f-f-x-a-g2	0,2	6,3	
EF13	4	g1-km-x-f-f-g3-a-g2	0,2	6,3	4)
EF22	2	f-a-g2-g3-x-g1-k-f	0,2	6,3	
EF39	1	m-f-a-g2-g3-x-f-k-g1	0,2	6,3	
EF41	5	f-a-kg3-x-g2-g1-kg3-f	0,2	6,3	
E447	11	f-g1-f-g2-km-a	1,1	4	
HF61	5	f-a-kg3-x-g2-g1-kg3-f	0,2	6,3	
HF121	5	f-a-kg3-x-g2-g1-kg3-f	0,1	12,6	9)
HP2118	11	f-g1-f-g2-km-a	0,18	20	7)
HP4105	11	f-g1-f-g2-kg3m-a	1,1	4	7)
HP4115	11	f-g1-f-g2-kg3m-a	1,1	4	
H2618D	11	f-g1-f-g2-km-a	0,18	20	
H4129D	11	f-g1-f-g2-kg3m-a	1,1	4	

Type	Base No.	Pin Connections	Jf A	Vf V	Notes
KTW63	1	m-f-a-g2-g3-x-f-k-g1	0,3	6,3	6)
MVS/PEN	11	f-g1-f-g2-kg3-a	1	4	
- " -	15	m-g1-g3-f-f-k-g2-a	1	4	
MVS/PENB	15	m-a-g3-f-f-k-g2-g1	1	4	
NF3	3	f-m-a-g2-x-g3-k-f-g1	0,2	12,6	
NVS42	11	f-g1-f-g2-km-a	1	4	5)6)
NVS43	11	f-g1-f-g2-kg3m-a	1,1	4	
NV183	11	f-g1-f-g2-km-a	0,18	20	
OM6	1	m-f-a-g2-g3-x-f-k-g1	0,2	6,3	
RENS1894	11	f-g1-f-g2-km-a	0,18	20	7)
S434N	11	f-g1-f-g2-kg3m-a	1,1	4	
S628	3	f-m-a-g2-x-g3-k-f-g1	0,4	6,3	
S1327	3	f-m-a-g2-x-g3-k-f-g*	0,2	13	
S2043N	11	f-g1-f-g2-km-a	0,18	20	
UF5	3	f-m-a-g2-x-g3-k-f-g1	0,1	12,6	
UF9	1	f-m-a-g2-x-g3-k-f-g1	0,1	12,6	
UF11	4	g1-kg3m-x-f-f-x-a-g2	0,1	15	
UF21	2	f-a-g2-g3-x-g1-k-f	0,1	12,6	
UF41	5	f-a-kg3-x-g2-g1-kg3m-f	0,1	12,6	9)
VF3	3	f-m-a-g2-x-g3-k-f-g1	0,05	55	
VP4	11	f-g1-f-g2-kg3m-a	1,0	4	
-"-	15	m-g1-g3-f-f-k-g2-a	1,0	4	
VP4A	11	f-g1-f-g2-kg3m-a	1,2	4	
-"-	15	m-g1-g3-f-f-k-g2-a	1,2	4	
VP13A	3	f-m-a-g2-x-g3-k-f-g1	0,2	13	
VPT4	11	f-g1-f-g2-kg3m-a	1	4	
VPT4B	15	m-g1-g3-f-f-k-g2-a	1	4	7)
VPTA	15	m-g1-g3-f-f-k-g2-a	0,2	13	
VPTS	15	m-a-g3-f-f-k-g2-g1	0,3	13	8)
W76	1	m-f-a-g2-g3-x-f-k-g1	0,16	13	6)8)9)
W143	2	f-a-g2-g3s-x-g1-k-f	0,2	6,3	
W147	2	m-f-a-g2-g3-x-f-k-g1	0,2	6,3	
6HV	1	x-f-a-g2-g3-x-f-k-g1	0,15	6,3	
9D2	15	x-a-g3-f-f-k-g2-g1	0,2	13	8)
9D6	11	g1-k-f-f-a-g3s-g2	0,2	6,3	1)
202VP	15	m-g1-g3-f-f-k-g2-a	0,2	20	
202VPB	15	m-g1-g3-f-f-k-g2-a	0,2	20	
956	24	f-g2-g3-f-k-g-a	0,15	6,3	3)
5693	1	s-f-g3-g1-k-g2-f-a	0,3	6,3	
5879	7	g1-x-k-f-f-x-g2-a-g3	0,15	6,3	2)

1) Vg2 = 200 Ja = 8 2) Ja = 1,8. Vg2 = 0,4. S = 1. 3) VHF.
4) Jg2 = 0,6. 5) Ja = 3. Jg2 = 0,8. 6) S = 1,5. 7) S = 3. 8) Ja = 8,5.
9) Va = 170.

HF-PENTODE (TETRODE) VAR.MU. 3

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
22		-3	100	225	8	2,5		

Type	Base No.	Pin Connections	Jf A	Vf V	Notes
AF3	3	f-m-a-g2-x-g3-k-f-g1	0,65	4	
CF3	3	f-m-a-g2-x-g3-k-f-g1	0,2	13	
EEP71	3	f-m-a-g2-x-g3-k-f-g1	0,2	6,3	
EF3	3	f-m-a-g2-x-g3-k-f-g1	0,24	6,3	1)
EF5	3	f-m-a-g2-x-g3-k-f-g1	0,2	6,3	
HPS4A	3	f-m-a-g2-x-g3-k-f-g1	0,65	4	
HPS15U	3	f-m-a-g2-x-g3-k-f-g1	0,2	13	
KTW61	1	m-f-a-g2-g3-x-f-k-g1	0,3	6,3	
NEP51	3	f-m-a-g2-x-g3-k-f-g1	0,65	4	
S432	3	f-m-a-g2-x-g3-k-f-g1	0,65	4	
S617	3	f-m-a-g2-x-g3-k-f-g1	0,2	6,3	
S1323	3	f-m-a-g2-x-g3-k-f-g1	0,2	13	
UEP51	3	f-m-a-g2-x-g3-k-f-g1	0,2	13	
UH3	3	f-m-a-g2-x-g3-k-f-g1	0,2	13	
VMP4G	15	m-g1-g3-f-f-k-g2-a	1	4	2)
VMS4	11	f-g1-f-g2-km-a	1	4	3)
VMS4B	11	f-g1-f-g2-km-a	1	4	3)
VP133	1	f-k-a-g2-g3-m-x-f-g1	0,2	13	4)
W42	15	m-a-g3-f-f-k-g2-g1	0,6	4	
W61	1	m-f-a-g2-g3-x-f-k-g1	0,3	6,3	
W77	6	g1-k-f-f-a-g3s-g2	0,2	6,3	5)
W81	2	f-a-g2-g3-x-g1-k-f	0,3	6,3	
W101	2	f-a-g2-g3-x-g1-k-f	0,1	19	
W107	6	g1-k-f-f-a-g3s-g2	0,1	12,6	5)
W145	5	f-a-s-g3-g2-g1-k-f	0,1	13	6)
W149	2	f-a-g2-g3-s-g1-k-f	0,15	6,3	7)
6AS6	6	g1-k-f-f-a-g2-g3	0,175	6,3	4)
6BD6	6	g1-g3-f-f-a-g2-k	0,3	6,3	
6D6	12	f-a-g2-g3-k-f-g1	0,3	6,3	6)
6E7	23	f-a-g2-g3-x-k-f-g1	0,3	6,3	
6F15	5	f-a-s-g3-g2-g1-k-f	0,2	6,3	
6K7	1	s-f-a-g2-g3-x-f-k-g1	0,3	6,3	
6K7G	1	s-f-a-g2-g3-x-f-k-g1	0,3	6,3	
6K7GT	1	s-f-a-g2-g3-x-f-k-g1	0,3	6,3	
6SK7	1	x-f-g3-g1-k-g2-f-a	0,3	6,3	
6SK7GT	1	s-f-g3-g1-k-g2-f-a	0,3	6,3	
6SS7	1	x-f-g3-g1-k-g2-f-a	0,15	6,3	
6U7G	1	s-f-a-g2-g3-x-f-k-g1	0,3	6,3	
7A7	2	f-a-g2-g3-x-g1-k-f	0,3	6,3	
7E7	2	f-a-g2-g3-x-g1-k-f	0,15	6,3	
10F9	1	f-a-s-g3-g2-g1-k-f	0,1	13	
12BD6	6	g1-g3s-f-f-a-g2-k	0,15	12,6	
12E7	2	f-a-g2-g3-x-g1-k-f	0,15	12,6	
12K7GT	1	s-f-a-g2-g3-x-f-k-g	0,15	12,6	
12SK7	1	x-f-g3-g1-k-g2-f-a	0,15	12,6	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
12SK7GT	1	x-f-g3-g1-k-g2-f-a	0,15	12,6	
12SS7GT	1	x-f-g3-g1-k-g2-f-a	0,07	12,6	
13VPA	15	m-a-g3-f-f-k-g2-g1	0,2	13	
14A-7	2	f-a-g2-g3-x-g1-k-f	0,15	12,6	
39/44	17	f-a-g2-kg3-f-g1	0,3	6,3	8)
78	12	f-a-g2-g3-k-f-g1	0,3	6,3	
4695	24	f-g2-g3-f-k-g1-a	0,15	6,5	10)
9003	6	g1-k-f-f-a-g2-kg3	0,15	6,3	9)

1) Jg2 = 3,1. 2) Jg2 = 5. 3) Vg1 = 0. Jg2 = 1,5. 4) Va = Vg2 = 150. 5) Vg2 = Va = 200. 6) Va = 175. 7) Jg2 = 1,7. 8) S = 1,1. 9) Jg2 = 1. 10) VHF

HF-PENTODE (TETRODE) 4

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,1		-1,5	80	200	4	0,5		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AS4100	11	f-g1-f-g2-km-a	1	4	3)
E442	11	f-g1-f-g2-km-a	1	4	1)
E442S	11	f-g1-f-g2-km-a	1	4	
H4080D	11	f-g1-f-g2-km-a	1	4	4)
H4100D	11	f-g1-f-g2-km-a	1	4	1)
LV11	40	f-f-k-g1-g2-x-g3s-e	0,09	12,6	2)4)
REN1204	11	f-g1-f-g2-km-a	1	4	1)
S410N	11	f-g1-f-g2-km-a	1	4	
S412N	11	f-g1-f-g2-km-a	1	4	1)
24A	17	f-a-g2-k-f-g1	1,75	2,5	5)
24B	17	f-a-g2-k-f-g1	1,75	2,5	
24E	17	f-a-g2-k-f-g1	1,75	2,5	5)
24S	17	f-a-g2-k-f-g1	1,75	2,5	
36	11	f-g1-f-g2-km-a	1	4	5)
4610	11	f-g1-f-g2-km-a	1	4	5)

1) Ja = 1,5. 2) VHF. 3) Vg1 = -6. 4) S = 2. 5) Jg2 = 1,5.

HF-PENTODE (TETRODE) 5

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,3		-3	100	225	2	0,5		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
KT263	1	s-f-a-g2-x-x-f-kg3-g1	0,3	6,3	
RV12P2000	41	f-g3-a-g2-k-f-g1	0,08	12,6	1)
RV12P2001	41	f-g3-a-g2-k-f-g1	0,08	12,6	1)
Z63	1	x-f-a-g2-g3-x-f-k-g1	0,3	6,3	2)
6Q6	12	f-a-g2-g3-k-f-g1	0,3	6,3	
6D7	23	f-a-g2-g3-x-k-f-g1	0,3	6,3	
6J7	1	s-f-a-g2-g3-x-f-k-g1	0,3	6,3	
6J7G	1	s-f-a-g2-g3-x-f-k-g1	0,3	6,3	
6J7GT	1	s-f-a-g2-g3-x-f-k-g1	0,3	6,3	
6W7G	1	s-f-a-g2-g3-x-f-k-g1	0,15	6,3	
7AJ7	2	f-a-g2-g3-x-g1-k-f	0,3	6,3	
7C7	2	f-a-g2-g3-x-g1-k-f	0,15	6,3	
8D2	11	x-a-g3-f-f-k-g2-g1	0,1	13	
12J7GT	1	s-f-a-g2-g3-x-f-k	0,15	12,6	
14C7	2	f-a-g2-g3-x-g1-k-f	0,15	12,6	
57	12	f-a-g2-g3-k-f-g1	1,0	2,5	
57AS	12	f-a-g2-g3-k-f-g1	0,4	6,3	
57S	12	f-a-g2-g3-k-f-g1	1,0	2,5	
77	12	f-a-g2-g3-k-f-g1	0,3	6,3	
954	24	f-g2-g3-f-k-g1-a	0,15	6,3	
1221	12	f-a-g2-g3-k-f-g1	0,3	6,3	
1223	1	s-f-a-g2-g3-x-f-k-g1	0,3	6,3	
1273	2	f-a-g2-g3-x-g1-k-f	0,3	6,3	
1280	2	f-a-g2-g3-x-g1-k-f	0,15	12,6	
1603T	12	f-a-g2-g3-k-f-g1	0,3	6,3	
7700	12	f-a-g2-g3-k-f-g1	0,3	6,3	
9001	6	g1-k-f-f-a-g2-kg3	0,15	6,3	

1) Vg2 = 75. 2) Vg2 = 125.

HF-PENTODE (TETRODE) 6

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,5		-3	100	225	7,5	1,8		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6R6G	1	s-f-a-g2-x-x-f-k-g1	0,3	6,3	
6S7	1	s-f-a-g2-g3-x-f-k-g1	0,3	6,3	
6S7G	1	s-f-a-g2-g3-x-f-k-g1	0,3	6,3	
58AS	12	f-a-g2-g3-k-f-g1	0,4	6,3	

HF-PENTODE (TETRODE) 7

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,7		-4,5	150	250	4,5	1,5		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AC/S2PEN	15	m-g1-g3-f-f-k-g2-a	1	4	
5PT4A	15	m-g1-g3-f-f-k-g2-a	1	4	

HF-PENTODE (TETRODE) 8

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,9		-3	135	135	5,5	1,2		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
S310A	12	f-a-g2-g3-k-f-g1	0,32	10,0	
S326A	12	f-a-g2-g3-k-f-g1	0,42	7,5	

HF-PENTODE (TETRODE) 9

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2		-2,5	100	225	3,5	0,9		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AF7	3	f-m-a-g2-x-g3-k-f-g1	0,65	4	
AS4120	11	f-g1-f-g2-k-a	1	4	
AS4125	11	f-g1-f-g2-km-a	1	4	
A50M	28	s-g1-g3-f-f-k-g2-a	1	4	
A50N	28	s-g1-g3-f-f-k-g2-a	0,65	4	
B2046	11	f-g1-f-g2-km-a	0,18	20	
CF1	3	f-m-a-g2-x-g3-k-f-g1	0,2	13	2)
CF7	3	f-m-a-g2-x-g3-k-f-g1	0,2	13	
C50B	28	s-a-g3-f-f-k-g2-g1	0,2	13	1) 2)
C50N	28	s-a-g3-f-f-k-g2-g1	0,2	13	3) 4)
EF1	3	f-m-a-g2-x-g3-k-f-g1	0,4	6,3	
EF6	3	f-m-a-g2-x-g3-k-f-g1	0,2	6,3	
EF7	3	f-m-a-g2-x-g3-k-f-g1	0,24	6,3	5)
EF12	4	g1-kg3m-x-f-f-x-a-g2	0,2	6,3	4)
EF36	1	m-f-a-g2-g3-x-f-k-g1	0,2	6,3	
EF37	1	m-f-a-g2-g3-x-f-k-g1	0,2	6,3	
EF40	5	f-a-x-g3-g1-g2-ks-f	0,2	6,3	6)

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
E446	11	f-g1-f-g2-kg3m-a	1,1	4	
E452T	11	f-g1-f-g2-k-a	1	4	
E455	11	f-g1-f-g2-km-a	1	4	
E462	11	f-g1-f-g2-km-a	1	4	
HP4A	3	f-m-a-g2-x-g3-k-f-g1	0,65	4	
HP13U	3	f-m-a-g2-x-g3-k-f-g1	0,2	13	
HP2018	11	f-g1-f-g2-km-a	0,18	20	2)
HP4100	11	f-g1-f-g2-kg3m-a	1	4	2)
H2518D	11	f-g1-f-g2-km-a	0,18	20	
H4111D	11	f-g1-f-g2-k-a	1	4	
H4115D	11	f-g1-f-g2-k-a	1	4	
H4128D	11	f-g1-f-g2-k-a	1	4	
MSP4	11	f-g1-f-g2-kg3m-a	1	4	
MSP4	15	m-g1-g3-f-f-k-g2-a	1	4	
MSP4/5	11	f-g1-f-g2-kg3m-a	1	4	
MSP4/7	15	m-g1-g3-f-f-k-g2-a	1	4	
NP2	3	f-m-a-g2-x-g3-k-f-g1	0,2	12,6	
NHP51	3	f-m-a-g2-x-g3-k-f-g1	0,65	4	
NSS42	11	f-g1-f-g2-k-a	1	4	
NSS43	11	f-g1-f-g2-kg3m-a	1,1	4	
NSS183	11	f-g1-f-g2-km-a	0,18	20	
OM5A	1	m-f-a-g2-g3-x-f-k-g1	0,2	6,3	
RD12PB	40	f-f-g1-k-g2-g3-a-g3	0,08	12,6	
RENS1284	11	f-g1-f-g2-kg3m-a	1	4	2)
RENS1884	11	f-g1-f-g2-kg3m-a	0,18	20	2)
RV12P3000	32	g3-f-f-g1-k-g2-s-a	0,2	12,6	
RV12P4000	42	f-m-a-g2-kg3-f-g1	0,2	12,6	
SP4	15	m-g1-g3-f-f-k-g2-a	1	4	
SP4	11	f-g1-f-g2-km-a	1	4	
SP13	3	f-m-a-g2-x-g3-k-f-g1	0,2	13	
S424	3	f-m-a-g2-x-g3-k-f-g1	0,65	4	
S430N	11	f-g1-f-g2-k-a	1	4	
S431N	11	f-g1-f-g2-km-a	1	4	
S435M	11	f-g1-f-g2-kg3m-a	1,1	4	
S620	3	f-m-a-g2-x-g3-k-f-g1	0,2	6,3	
S629	3	f-m-a-g2-x-g3-k-f-g1	0,4	6,3	
S1324	3	f-m-a-g2-x-g3-k-f-g1	0,2	13	
S1328	3	f-m-a-g2-x-g3-k-f-g1	0,2	13	
S2035N	11	f-g1-f-g2-km-a	0,18	20	
UF6	3	f-m-a-g2-x-g3-k-f-g1	0,1	12,6	
UH7	3	f-m-a-g2-x-g3-k-f-g1	0,2	25	
UHP51	3	f-m-a-g2-x-g3-k-f-g1	0,2	13	
UHP52	3	f-m-a-g2-x-g3-k-f-g1	0,2	13	
VF7	3	f-m-a-g2-x-g3-k-f-g1	0,05	55	
4TSA	15	m-g1-g2-f-f-kg3-a1-a2	1	4	
6F11	1	f-a-s-g3-g2-g1-k-f	0,2	6,3	6)
6R	1	x-f-a-g2-g3-x-f-k-g1	0,15	6,3	
6SJ7	1	s-f-g3-g1-k-g2-f-a	0,3	6,3	
6SJ7GT	1	s-f-g3-g1-k-g2-f-a	0,3	6,3	

Type	Base		Jf A	Vf V	Notes
	No.	Pin Connections			
7AB7	2	g2-f-a-k-g1-kg3-f-k	0,15	6,3	
8D5	7	x-g1-k-f-f-s-a-g2-g3	0,15	6,3	
12SJ7	1	s-f-g3-g1-k-g2-f-a	0,15	12,6	
12SJ7GT	1	s-f-g3-g1-k-g2-f-a	0,15	12,6	
1204	2	g2-f-a-k-g1-kg3-f-k	0,15	6,3	
4636	11	f-g1-f-g2-kg3m-a	1,1	4	

1) Ja = 2,5. 2) S = 3. 3) Ja = 9. 4) Vg2 = 200. 5) Vg1 = -1,5. 6) Vg2 = 150.

HF-PENTODE (TETRODE) 10

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2,5		-2,5	250	250	3	0,8		

Type	Base		Jf A	Vf V	Notes
	No.	Pin Connections			
A50A	28	s-a-g2-f-f-k-g2-a	1,0	4	2)
SP4B	15	m-a-g3-f-f-k-g2-g1	0,65	4	3)
SP13C	15	m-a-g3-f-f-k-g2-g1	0,2	13	
5590	6	g1-k-f-f-a-g2-kg3	0,15	6,3	1)

1) Va = Vg2 = 90 Volt. Ja = 4. 2) Vg2 = 100. 3) S = 4.

HF-PENTODE (TETRODE) 11

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2,5		-3	225	225	10	3		

Type	Base		Jf A	Vf V	Notes
	No.	Pin Connections			
AC/VP1	15	m-g1-g3-f-f-k-g2-a	0,65	4	1)
AC/VP2	15	m-a-g3-f-f-k-g2-g1	0,65	4	
A50P	15	m-a-g3-f-f-k-g2-g1	0,65	4	
EF92	11	g1-k-f-f-a-g3s-g2	0,2	6,3	1)
MSP41	11	f-g1-f-g2-kg3-a	1	4	2)
MSP41	15	m-g1-g3-f-f-k-g2-a	1	4	2)
VP4B	15	m-a-g3-f-f-k-g2-g1	0,65	4	
VP13C	15	m-a-g3-f-f-k-g2-g1	0,2	13	
VP41	1	f-k-a-g2-g3-m-x-f-g1	0,65	4	1)
VP1322	15	m-a-g3-f-f-k-g2-g1	0,2	13	1)

1) Jg2 = 2,2. 2) S = 3,2.

HF-PENTODE (TETRODE) 12

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2,7		RK =200	28	28	3	1		

Type	Base		Jf A	Vf V	Notes
	No.	Pin Connections			
6AJ5	6	g1-k-f-f-a-g2-kg3	0,175	6,3	

HF-PENTODE (TETRODE) 13

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2,8		-2	125	225	5,4	1,7		

Type	Base		Jf A	Vf V	Notes
	No.	Pin Connections			
MS/PEN	11	f-g1-f-g2-kg3-a	1	4	
MS/PEN	15	m-g1-g3-f-f-k-g2-a	1	4	
MS/PENB	15	m-a-g3-f-f-k-g2-g1	1	4	

HF-PENTODE (TETRODE) 14

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
3,5		-1,7	100	250	5	1,5		

Type	Base		Jf A	Vf V	Notes
	No.	Pin Connections			
A50B	28	s-a-g3-f-f-k-g2-g1	0,65	7	1)
CF50	3	f-kg3-a-g1-g2-x-kg3-f	0,2	30	2)
LV14	40	f-f-k-g1-g2-a-g3-a	0,18	12,6	3)6)
MS4B	11	f-g1-f-g2-km-a	1	4	5)6)
6BA5	-	-	0,15	6,3	4)
6SD7GT	1	s-f-g3-g1-k-g2-f-a	0,3	6,3	
6SE7GT	1	s-f-g3-g1-k-g2-f-a	0,3	6,3	
7AG7	2	f-a-g2-g3-x-g1-k-f	0,15	6,3	1)
7AH7	2	f-a-g2-g3-x-g1-k-f	0,15	6,3	1)
7L7	2	f-a-g2-g3-x-g1-k-f	0,3	6,3	
8A1	15	m-g1-g3-f-f-k-g2-a	1	4	5)6)
8A1	11	f-g1-f-g2-kmg3-a	1	4	5)6)
9A1	15	m-g1-g3-f-f-k-g2-a	1	4	5)6)
9A1	11	f-g1-f-g2-kmg3-a	1	4	5)6)

1) Vg2 = 250. 2) Ja = 1,5. Jg2 = 0,2. 3) VHF. Ja = 8. 4) Va = Vg2 = 100. 5) Ja = 3,4. 6) Vg2 = 70.

HF-PENTODE (TETRODE) — 15

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
4		-1	150	250	9	3,5		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
EF93	6	g1-g3s-f-f-a-g2-k	0,3	6,3	1) 3)
W148	2	f-a-g2-g3-x-g1-k-f	0,3	6,3	4)
6BA6	6	g1-g3-f-f-a-g2-k	0,3	6,3	1) 4)
6BH6	6	g1-k-f-f-a-g2-g3	0,15	6,3	2)
6BJ6	6	g1-k-f-f-a-g2-g3	0,15	6,3	1)
6SG7	1	s-f-kg3-g1-kg3-g2-f-a	0,3	6,3	
6SG7GT	1	s-f-kg3-g1-kg3-g2-f-a	0,3	6,3	
6SH7	1	s-f-kg3-g1-kg3-g2-f-a	0,3	6,3	
6SH7GT	1	s-f-kg3-g1-kg3-g2-f-a	0,3	6,3	
6SH7L	1	s-f-kg3-g1-kg3-g2-f-a	0,3	6,3	
7G7	2	f-a-g2-g3-x-g1-k-f	0,45	6,3	1) 2) 4)
7H7	2	f-a-g2-g3-x-g1-k-f	0,3	6,3	4)
7T7	2	f-a-g2-g3-x-g1-k-f	0,3	6,3	1) 4)
12BA6	6	g1-g3-f-f-a-g2-k	0,15	12,6	1) 4)
12SG7	1	s-f-kg3-g1-kg3-g2-f-a	0,15	12,6	
12SH7	1	s-f-kg3-g1-kg3-g2-f-a	0,15	12,6	
12SH7GT	1	s-f-kg3-g1-kg3-g2-f-a	0,15	12,6	
14H7	2	f-a-g2-g3-x-g1-k-f	0,15	12,6	4)
26A6	6	g1-g3-f-f-a-g2-k	0,07	26,5	4)
1232	2	f-a-g2-g3-x-g1-k-f	0,45	6,3	1) 2) 4)

1) Vg2 = 100. 2) Ja = 6. Jg2 = 2. 3) Rk = 68. 4) Vg1 = -2,5.

HF-PENTODE (TETRODE) BROAD BAND AMP. — 16

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
5		Rk	120	180	7,5	2,5		
		200						

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6AK5	6	g1-k-f-f-a-g2-kg3	0,175	6,3	
5591	6	g1-k-f-f-a-g2-kg3	0,15	6,3	

HF-PENTODE (TETRODE) BROAD BAND AMP. — 17

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
5		-3	175	250	11	3		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6AB7	1	x-f-g3-g1-k-g2-f-a	0,45	6,3	
6AB7GT	1	x-f-g3-g1-k-g2-f-a	0,45	6,3	
6AG5	6	g1-k-f-f-a-g2-kg3	0,3	6,3	2)
6CB6	6	g1-k-f-f-a-g2-g3	0,3	6,3	
7V7	2	f-a-g2-g3-x-g1-k-f	0,45	6,3	
7W7	2	f-a-g2-g3-x-g1-k-f	0,45	6,3	
14V7	2	f-a-g2-g3-a-g1-k-f	0,225	12,6	
14W7	2	f-a-g2-k-g3-g1-k-f	0,225	12,6	
41MPT	15	m-g1-g3-f-f-k-g2-a	1	4	1) 3)
1231	2	f-a-g2-g3-x-g1-k-f	0,45	6,3	
1852GT	1	x-f-a-g2-g3-x-f-k-g1	0,45	6,3	
1853	1	s-f-g3-g1-k-g2-f-a	0,45	6,3	

1) Vg2 = 100. 2) Ja = 7. Jg2 = 2. 3) Vg1 = -1,5.

HF-PENTODE (TETRODE) BROAD BAND AMP. — 18

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
6		-2	250	250	10	2,5		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
EBF15	4	g1-kg3m-a-f-f-d-d-g2	0,47	6,3	1)
EF15	4	g1-k-m-f-f-g3-a-g2	0,47	6,3	1)
EF50	8	f-g2-a-g3-s-k-g1-s-f	0,3	6,3	
UF15	4	g1-k-m-f-f-g3-a-g2	0,1	25	2)
UBF15	4	g1-km-a-f-f-d-d-g2	0,1	27	1)
Z66	1	s-f-a-g2-g3-x-f-k-g1	0,63	6,3	3) 7)
6AU6	6	g1-g3-f-f-a-g2-k	0,3	6,3	4) 6)
6BC5	6	g1-kg3-f-f-a-g2-k	0,3	6,3	
12AU6	6	g1-g3-f-f-a-g2-k	0,15	12,6	4) 6)
12AW6	6	g1-k-f-f-a-g2-g3	0,15	12,6	4) 7)
63SPT	8	f-g2-a-g3-m-k-g1-m-f	0,3	6,3	
4673	3	f-m-a-g2-x-g3-k-f-g1	1,35	4	5) 7)

1) Vg2 = 100. 2) Vg2 = 80. 3) S = 7,5. 4) Vg2 = 150. 5) Vg2 = 200. 6) Vg1 = 1. 7) Ja = 7,5.

HF-PENTODE (TETRODE) BROAD BAND AMP. 19

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
6,5		0	90	150	40	20		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
7AK7	2	f-a-g2-g3-x-g1-k-f	0,8	6,3	

HF-PENTODE (TETRODE) BROAD BAND AMP. 20

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
8		-2	225	225	12	2,5		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AF100	32	f-k-f-g1-g3-g2-m-a	0,7	4	
EF14	4	k-m-g2-f-f-g3-a-g1	0,47	6,3	1) 6)
EF42	5	f-a-s-g3-g2-g1-k-f	0,33	6,3	
EF51	2	f-a-k-g3-g2-g1-k-f	0,35	6,3	
EF54	8	f-a-g2-x-x-g1-x-kg3-f	0,3	6,3	6)
EF80	7	k-g1-k-f-f-s-a-g2-g3	0,3	6,3	2)
EF91	6	g1-k-f-f-a-g3-g2	0,3	6,3	
HF62	5	f-a-s-g3-g2-g1-k-f	0,33	6,3	
SP6	11	g1-k-f-f-a-g3-g2	0,3	6,3	
SP41	1	f-k-a-g2-g3-m-x-f-g1	0,95	4	
SP61	1	f-k-a-g2-g3-m-x-f-g1	0,6	6,3	
SP181	1	f-k-a-g2-g3-m-x-f-g1	0,2	18	
UF14	4	k-m-g2-f-f-g3-a-g1	0,1	25	1)
UF42	5	f-a-s-g3-g2-g1-k-f	0,1	21	2)
VF14	4	k-m-g2-f-f-g3-a-g1	0,05	55	1) 6)
Z77	6	g1-k-f-f-a-g3-g2	0,3	6,3	3)
4TPB	15	m-a-g3-f-f-k-g2-g1	1	4	4)
4TSP	15	m-g1-g3-f-f-k-g2-a	1	4	4)
6AM6	6	g1-k-f-f-a-g3-g2	0,3	6,3	
6F1	5	f-a-g3s-g2-k-g1-k-f	0,35	6,3	
6F12	6	g1-k-f-f-a-g3-g2	0,3	6,3	
6F13	5	f-a-s-g3-g2-g1-k-f	0,35	6,3	
6D3	6	g1-k-f-f-a-g3-g2	0,3	6,3	
10F1	5	f-a-g3-g2-k-g1-k-f	0,1	22	
20F2	5	f-a-s-g3-g2-g1-k-f	0,2	11	
42MPT	15	m-g1-g3-f-f-k-g2-a	2	4	5) 7)

1) Vg1 = -4,5. 2) Va = Vg2 = 170. 3) Ja = 8. 4) Vg2 = 150. 5) Ja = 30. 6) Jg2 = 1,7. 7) Vg1 = -3.

HF-PENTODE (TETRODE) BROAD BAND AMP. 21

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
9		Rk	150	300	11	3		
		160						

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6AC7	1	x-f-g3-g1-k-g2-f-a	0,45	6,3	
6AC7GT	1	x-f-g3-g1-k-g2-f-a	0,45	6,3	
6AH6	6	g1-g3-f-f-a-g2-k	0,45	6,3	
6AJ7	1	x-f-g3-g1-k-g2-x-a	0,45	6,3	
6C9	43	s-m-g2-g3-g1-f-k-f	0,45	6,3	
6V9	43	s-m-g2-g3-g1-f-k-f	0,45	6,3	1) 3)
7AD7	2	f-a-g2-g3-x-g1-k-f	0,60	6,3	2)
1851GT	1	x-f-a-g2-g3-x-f-k-g1	0,45	6,3	
1852	1	s-f-g3-g1-k-g2-f-a	0,45	6,3	
6302	12	f-a-g2-g3-k-f-g1	0,6	6,3	

HF-PENTODE (TETRODE) BROAD BAND AMP. 22

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
10		-1,5	250	250	19	5		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
KT241	15	s-a-g3-f-f-k-g2-g1	1,5	4	
LV16	40	f-f-k-g1-g2-g3m-k-a	0,18	12,6	1)
SP42	1	f-k-a-g2-g3-s-x-f-g1	0,95	4	2) 3)
6F14	5	f-a-s-g3-g2-g1-k-f	0,35	6,3	

1) Jg2 = 2,6. 2) Va = 200. Vg2 = 110. 3) Video.

HF-PENTODE (TETRODE) BROAD BAND AMP. 23

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
11		-15	250	250	27			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
42SPT	15	s-g1-g3-f-f-k-g2-a	2	4	1)

1) Video.

SECONDARY-EMISSION PENTODE BROAD BAND AMP. 24

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Vk2 V	Jk2 mA
17		-2,5	150	250	8	0,45	150	-6,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
EE1	3	f-m-a-g2-x-k2-ks-f-g1	0,6	6,3	2)
EE50	8	f-k2-a-g2-s-k-g1-s-f	0,3	6,3	1)2)
EEP1	3	f-m-a-g2-x-k2-ks-f-g1	0,6	6,3	2)
4696	3	f-m-a-g2-x-k2-ks-f-g1	0,6	6,3	1)2)

1) S = 14. 2) k2 = secondary emission cathode.

SECONDARY-EMISSION PENTODE BROAD BAND AMP. 25

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Vk2 V	Jk2 mA
25		-2	250	250	20	1,5	150	-15

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
EFP60	8	f-k-g1-k-k2-a-g3-g2-f	0,37	6,3	1)

1) k2 = secondary emission cathode.

VHF PENTODE (TETRODE) 26

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
1,4		-3	100	250	2	0,7		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
E1F	24	f-g2-g3-f-k-g1-a	0,15	6,3	1)
13SPA	15	m-a-g3-f-f-k-g2-g1	0,2	13	
4672	24	f-g2-g3-f-k-g1-a	0,15	6,3	
4676	24	f-g2-g3-f-k-g1-a	0,235	4	

1) HF.

DOUBLE VHF PENTODE (TETRODE) 27

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
9		-2	200	250	6	1		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
EFF50	8	f-a2-g22-g12-kg3-g11-g21-a1-f	0,6	6,3	
EFF51	8	f-a2-g22-g12-kg3-g11-g21-a1-f	0,75	6,3	

DIODE HF-PENTODE (TETRODE) VAR.MU. 28

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
2		-2	100	250	5,5	1,5		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
D61	5	f-a-d-ic-g2-g1-kg3s-f	0,2	6,3	
D121	5	f-a-d-ic-g2-g1-kg3s-f	0,1	12,6	2)
EAF41	5	f-a-d-ic-g2-g1-kg3s-f	0,2	6,3	
EAF42	5	f-a-d-g2-g1-ks-f	0,2	6,3	
UAF41	5	f-a-d-ic-g2-g1-kg3s-f	0,1	12,6	2)
UAF42	5	f-a-d-g3-g2-g1-ks-f	0,1	12,6	2)
WD142	5	f-a-d-g3-g2-g1-ks-f	0,1	12,6	2)
6SF7	1	s-g1-kg3-g2-d-a-f-f	0,3	6,3	3)
6SV7	1	s-g1-k-g2-d-a-f-f	0,3	6,3	1)
12SF7	1	s-g1-k-g2-d-a-f-f	0,15	12,6	3)

1) Vg2 = 150. Jg2 = 2,8. S = 3. 2) Va = 170. 3) Ja = 12. Jg2 = 3. Vg1 = -1.

DOUBLE DIODE HF-PENTODE (TETRODE) VAR.MU. 29

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
1,2		-3	100	225	8	2,2		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
VP12D	1	s-f-a-d1-d2-g2-f-k-g1	0,15	12,6	
6J7	23	f-a-g2-d1-d2-kg3-f-g1	0,3	6,3	
6J7S	23	f-a-g2-d1-d2-kg3-f-g1	0,3	6,3	1)2)
6J8	1	s-f-a-d1-d2-g2-f-kg3-g1	0,3	6,3	3)
6J8G	1	x-f-a-d1-d2-g2-f-kg3-g1	0,3	6,3	
6J8GT	1	x-f-a-d1-d2-g2-f-kg3-g1	0,3	6,3	
6N8G	1	x-f-a-d1-d2-g2-f-kg3-g1	0,3	6,3	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6BN8GT	1	x-f-a-d1-d2-g2-f-kg3-g1	0,3	6,3	
6G7	1	s-f-a-d1-d2-g2-f-kg3-g1	0,3	6,3	
6G8G	1	x-f-a-d1-d2-g2-f-kg3-g1	0,3	6,3	1)2)
7E7	2	f-a-d1-d2-g2-g1-kg3-f	0,3	6,3	2)
7E7	2	f-a-d1-d2-g2-g1-kg3-f	0,3	6,3	1)2)4)
12C8	1	s-f-a-d1-d2-g2-f-kg3-g1	0,15	12,6	3)
12C8Y	1	s-f-a-d1-d2-g2-f-kg3-g1	0,15	6,3	3)
14B7	2	f-a-d1-d2-g2-g1-kg3-f	0,15	6,3	1)2)4)

1) Ja = 6,5. 2) Jg2 = 1,5. 3) Ja = 10. 4) S = 3,4.

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DOUBLE DIODE HF-PENTODE (TETRODE) VAR.MU.

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2		-2	90	225	5	1,5		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
EBF2	3	f-m-a-g2-d1-d2-kg3-f-g1	0,2	6,3	
EBF11	4	g1-kg3m-a-f-f-d1-d2-g2	0,2	6,3	
EBF32	1	m-f-a-d1-d2-g2-f-kg3-g1	0,2	6,3	
EBF35	1	f-k-a-g2-d1-d2-g3m-f-g1	0,2	6,3	
EBF80	7	g2-g1-ks-f-f-a-d1-d2-g3	0,3	6,3	
UBF2	1	f-x-a-g2-d1-kg3-d2-f-g1	0,1	12,6	
UBF11	4	g1-kg3m-a-f-f-d1-d2-g2	0,1	20	
UBF80	7	g2-g1-ks-f-f-a-d1-d2-g3	0,1	17	1)
6N8	7	g2-g1-ks-f-f-a-d1-d2-g3	0,3	6,3	

1) Va = 170.

3

HF-PENTODE TRIODE

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1		-3	100	250	6,5	2	PENTODE	
0,5	8			100	3		TRIODE	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Note
6F7	23	f-aP-g2-aT-gT-kg3-f-g1P	0,3	6,3	
6F7S	23	f-aP-g2-aT-gT-kg3-f-g1P	0,3	6,3	
6P7G	1	s-f-f-aP-g2-aT-g1T-kg3-g1P	0,3	6,3	

HF-PENTODE TRIODE 32

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
1,8		-3	90	90	7,5	2	PENTODE	
2,1	100	0		90	3		TRIODE	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
12B8GT	1	g3kP-f-aP-g2-aT-kT-f-gT	0,3	12,6	
25D8GT	1	kg3-f-aP-g2-gT-aT-f-d-g1P	0,15	25	1)

1) TRIODE: S = 1,1. Ja = 0,5.

HF-PENTODE TRIODE 33

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2		-2	100	250	5	2	PENTODE	
2,2	20	-3		150	8		TRIODE	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
ECF1	3	f-m-aP-g2-gT-aT-kg3-f-g1	0,3	6,3	

HF-PENTODE (TETRODE) TRIODE 34

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
3,5		-5	200	250	6	2	PENTODE	
1,5				150	2		TRIODE	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AC/TP	22	g2-aP-g3-f-f-k-aT-gT-m-g1	1,25	4	
TP2620	22	g2-aP-g3-f-f-k-aT-gT-m-g1	0,2	26	

HF-HEXODE VAR.MU. 35

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Vg3 V	Jg3 mA
1,8		-2,5	0	250	8		250	0,2

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
EF8	3	f-m-a-g3-g2-g4-k-f-g1	0,2	6,3	

HF HEXODE 36

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Vg3 V	
2		-2	80	200	3	3	-2	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
E449	28	g4-g3-g2-f-f-km-a-g1	1,2	4	
FH4105	28	g4-g3-g2-f-f-km-a-g1	1,2	4	
H-426N	28	g4-g3-g2-f-f-km-a-g1	1,2	4	
NSS44	28	g4-g3-g2-f-f-km-a-g1	1,2	4	
HENS1234	28	g4-g3-g2-f-f-km-a-g1	1,2	4	
X4123	28	g4-g3-g2-f-f-km-a-g1	1,2	4	

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OUTPUTPENTODE (TETRODE) 1

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
1,8		-40	200	400	30	5	13	5,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
E443N	11	f-g1-a-f-g2	1	4	
L491D	11	f-g1-f-a-g2	0,6	4	
P430	11	f-g1-f-a-g2	0,6	4	
PP4100	11	f-g1-f-a-g2	0,6	4	
RES664D	11	f-g1-f-a-g2	0,6	4	

OUTPUTPENTODE (TETRODE) 2

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
2,3		-9	200	200	15	3	10	1,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
N77	6	g1-kg3-f-f-a-x-g2	0,2	6,3	2)
N144	6	g1-kg3-f-f-a-x-g2	0,2	6,3	1)
6AK6	6	g1-g3-f-f-a-g2-k	0,15	6,3	
6AM5	6	g1-g3-f-f-a-g2-k	0,2	6,3	1)
6A4/LA	17	f-a-g1-g2-f	0,3	6,3	2) 4)
6G6G	1	s-f-a-g2-g1-x-f-k	0,15	6,3	
6ZP1	12	f-a-g2-g1-k-f	0,35	6,3	5)
12ZP1A	12	f-a-g2-g1-k-f	0,175	12	
34P1	17	f-a-g1-g2-f	0,9	2,5	
47B	17	f-a-g1-g2-f	0,5	2,5	3)

1) Vg = +13. 2) Vg = +12. 3) Vg = +16,5. 4) Ja = 22. 5) S = 1,75.

OUTPUTPENTODE (TETRODE) 3

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
2,5		-20	250	250	22	2,5	9	2,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
APF4120	35	g1-g2-f-f-kg3-a	1,1	4	3)
CL1	3	f-ic-a-g2-ic-ic-kg3-f-g1	0,2	13	1)
C443	11	fg3-g1-f-g2-a	0,25	4	1)
E453	35	g1-g2-f-f-kg3-a	1,1	4	4)
L42MD	11	f-g1-f-a-g2	0,25	4	
L415OD	35	g1-g2-f-f-kg3-a	1,1	4	4)
NE43	35	g1-g2-f-f-kg3-a	1,1	4	4)
PM24A	11	fg3-g1-f-a-g2	0,275	4	
PP431	11	f-g1-f-a-g2	0,25	4	1)
P422	11	f-g1-f-a-g2	0,25	4	
P44ON	35	g1-g2-f-f-kg3-a	1,1	4	3)
P1320	3	f-x-a-g2-x-x-kg3-f-g1	0,2	13	1)
RENS1374D	35	g1-g2-f-f-kg3-a	1,1	4	3)
RENS1384	35	g1-g2-f-f-kg3-a	1,3	4	
RES364	11	f-g1-f-a-g2	0,25	4	1)
6K6GT	1	s-f-a-g2-g1-x-f-k	0,4	6,3	2)
7B5	2	f-a-g2-x-x-g1-kg3-f	0,4	6,3	
41	12	f-a-g2-g1-kg3-f	0,4	6,3	

1) S = 1,9. Ra = 12. 2) Jg2 = 4. Wo = 4,5. 3) S = 3,5. 4) Jg2 = 7. Ra = 15.

OUTPUTPENTODE (TETRODE) 4

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
2,5		-18	120	160	36	12	5	2,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
7D3	15	x-g1-g2-f-f-kg3-a	0,2	40	
25A6	1	s-f-a-g2-g1-x-f-kg3	0,3	25	
25A6GT	1	s-f-a-g2-g1-x-f-kg3	0,3	25	
43	12	f-a-g2-g1-kg3-f	0,3	25	

OUTPUTPENTODE (TETRODE) 5

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
2,5		-17	250	250	36	6	7	3,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AC/PEN	15	g2-f-g1-f-kg3-a	1,0	4	10)
AL1	3	f-x-a-g2-g1-x-x-g3f	1,2	4	
AL2	3	f-s-a-g2-x-x-kg3-f-g1	1	4	1)
APP4130	35	g1-g2-f-f-kg3-a	1,3	4	
A7OB	15	x-g1-g2-f-f-kg3-a	1,35	4	
DLP51	3	f-x-a-g2-g1-x-x-fg3	1	4	
EL1	3	f-s-a-g2-x-x-kg3-f-g1	0,4	6,3	
EL2	3	f-x-a-g2-x-x-kg3-f-g1	0,2	6,3	
EL32	1	x-f-a-g2-x-x-f-kg3-g1	0,2	6,3	
ELP72	3	f-x-a-g2-x-x-kg3-f-g1	0,2	6,3	
ELP73	3	f-x-a-g2-x-x-kg3-f-g1	0,4	6,3	
E443H	11	f-g1-f-a-g2	1,1	4	
E463	35	g1-g2-f-f-kg3-a	1,35	4	2)
KT63	1	s-f-a-g2-g1-x-f-k	0,2	6,3	
L496D	11	f-g1-f-a-g2	1	4	
MKT4	11	f-k-a-x-g1-g2	1	4	10)
MKT4/7	15	x-g1-g2-f-f-kg3-a	1	4	
MP/PEN	11	f-g1-f-g2-kg3-a	1	4	15)
MP/PEN	15	x-g1-g3-f-f-k-g2-a	1	4	15)
NLP	3	f-x-a-g2-x-x-kg3-f-g1	1	4	1)
NP43	35	g1-g2-f-f-kg3-a	1,3	4	2)
PENA1	11	f-g1-f-a-g2	1	4	3)
PEN4VA	15	x-g1-g2-f-f-kg3-a	1,35	4	11)
PEN4VA	11	f-g1-f-a-kfg3-g2	1,35	4	11)
PM24M	11	f-g1-f-a-g2	1,1	4	
PP4101	11	f-g1-f-a-g2	1	4	
PTA	15	x-g1-g2-f-f-kg3-a	0,6	13	12)
PT41	11	fg3-g1-f-a-g2	1	4	
P43M	11	f-g1-f-a-g2	1	4	
P434	3	f-x-a-g2-g1-x-x-fg3	1	4	
P435	11	f-g1-f-a-g2	1	4	
P441N	35	g1-g2-f-f-kg3-a	1,3	4	2)
P626	3	f-x-a-g2-x-x-kg3-f-g1	0,4	6,3	2)
P628	3	f-x-a-g2-x-x-kg3-f-g1	0,2	6,3	
RES964	11	f-g1-f-a-g2	1,1	4	
VL1	3	f-a-a-g2-x-x-kg3-f-g1	0,05	55	4)6)
6AR5	6	f-a-x-x-g2-g1-k-f	0,4	6,3	
6F6	1	s-f-a-g2-g1-x-f-k	0,7	6,3	13)
6F6G	1	s-f-a-g2-g1-x-f-k	0,7	6,3	13)
6F6GT	1	s-f-a-g2-g1-x-f-k	0,7	6,3	
7A2	15	s-g1-g2-f-f-kg3-a	1,2	4	
7A2	11	f-g1-f-a-kg3-g2	1,2	4	
7D5	15	x-g1-g2-f-f-kg3-a	0,35	13	
12A6	1	s-f-a-g2-g1-x-f-k	0,15	12,6	5)
12A6GT	1	s-f-a-g2-g1-x-f-k	0,15	12,6	5)

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
14A5	2	f-a-g2-x-x-g1-kg3-f	0,15	12,6	3)5)11)
18	12	f-a-g2-g1-kg3-f	0,3	14	
33	17	f-a-g1-g2-f-fg3	0,26	2	6)14)
38	17	f-a-g2-kg3-f-g1	0,3	6,3	4)7)14)
42	12	f-a-g2-g1-kg3-f	0,65	6,3	
47	17	f-a-g1-g2-f	1,75	2,5	3)
59	18	f-a-g2-g1-g3-k-f	2	2,5	
89	12	f-a-g2-f-g1	0,4	6,3	1)14)
2151	12	f-a-g2-g1-kg3-f	0,3	14	8)9)
4682	3	f-s-a-g2-x-x-kg3-f-g1	1	4	1)

1) Vg1 = +25. 2) Vg = +22. 3) Wo = 2,7. 4) Ja = 25. 5) Vg = +12,5. 6) Wo = 1,4. Va = 200. 7) Ra = 10. Vg = +25. 8) Ra = 4. 9) Vg1 = +31. Wo = 5 . 10) Vg1 = -10. 11) Jg2 = 3. 12) Vg1 = -6. 13) Wo = 4,8. 14) S = 1,7. 15) S = 3,5.

OUTPUTPENTODE (TETRODE) 6

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
2,8		-15	135	135	30	6,5	4	2

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
S.311A	17	f-f-a-g2-k-g1	0,64	10	
S.329A	17	f-f-a-g2-k-g1	0,85	7,5	
S.329L	12	f-a-g2-g3-k-f-g1	0,85	7,5	

OUTPUTPENTODE (TETRODE) 7

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
3		-7,5	170	180	28	5	5,5	2,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
BF62	5	f-a-ic-ic-g2-g1-kg3-f	0,2	6,3	1)
EL42	5	f-a-ic-ic-g2-g1-kg3-f	0,2	6,3	1)3)4)
KT76	1	s-f-a-g2-g1-x-f-k	0,16	15	3)
N145	5	f-a-ic-ic-g2-g1-k-f	0,1	40	5)
10P13	2	f-a-ic-g2-g1-k-f	0,1	40	
142BT	1	s-f-a-g2-g1-x-f-k	0,2	14	2)

1) Va = Vg2 = 250. 2) S = 3,7. 3) Vg1 = -13. 4) Ra = 10. 5) S = 5,5.

OUTPUTPENTODE (TETRODE) 8

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
3,5		-19	100	200	45	4,5	5,5	3

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
BL2	11	f-g2-f-a-kg3-g1	0,18	30	1)
CL2	3	f-s-a-g2-x-x-kg3-f-g1	0,2	24	
P2060	3	f-x-a-g2-x-x-kg3	0,2	24	
P2460	11	f-g2-f-a-kg3-g1	0,18	24	2)
ULP51	3	f-x-a-g2-x-x-kg3	0,2	24	
30GP9	1	x-f-a-g2-g1-f-kg3	0,175	30	
48	12	f-a-g2-g1-k-f	0,4	30	3)

1) Wo = 2. 2) S = 8. Ra = 7,2. 3) Va = 125. Ja = 55. Jg2 = 9. Ra = 1,5.

OUTPUTPENTODE (TETRODE) 9

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
5		-30	200	500	45	3,5	12	13

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
F443N	11	f-g1-f-a-g2	2	4	
L495D	11	f-g1-f-a-g2	2	4	
P440	11	f-g1-f-a-g2	2	4	
4650	11	f-g1-f-a-g2	2	4	

OUTPUTPENTODE (TETRODE) 10

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
5,5		-5	225	225	20	3	12	2

Type	Base No.	Base Pin Connections	Ji A	Vf V	Notes
EL8	3	f-x-a-g2-g1-x-kg3-f	0,5	6,3	
UL2	3	f-x-a-g2-g1-x-kg3-f	0,1	35	

OUTPUTPENTODE (TETRODE) — 11

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
5,5		-16	250	300	65	5	3,5	10

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6AH5G	1	g2-f-x-a-x-g1-f-kg3	0,9	6,3	
6AL6G	1	a-f-x-g2-g1-x-f-k-a	0,9	6,3	1)
6AR6G	1	kg3-x-a-x-g2-f-g1-f	1,2	6,3	
6L6	1	a-f-a-g2-g1-x-f-kg3	0,9	6,3	
6L6G	1	a-f-a-g2-g1-x-f-kg3	0,9	6,3	
6L6GA	1	a-f-a-g2-g1-x-f-kg3	0,9	6,3	
6L6GC	1	a-f-a-g2-g1-g3-f-k	0,9	6,3	

1) Wo = 6,5. Ra = 2,5.

OUTPUTPENTODE (TETRODE) — 12

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
6		-8	110	110	40	3,5	2,5	1,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6AN5	6	g1-k-f-f-a-g2-kg3	0,45	6,3	3) 4)
6AS5	6	kg3-g1-f-f-g1-g2-a	0,8	6,3	1) 2)
7A5	2	f-a-g2-x-x-g1-kg3-f	0,75	6,3	2) 3)
35B5	6	g1-kg3-f-f-a-g2-g1	0,15	35	
35C5	6	kg3-g1-f-f-g1-g2-a	0,15	35	
50B5	6	g1-kg3-f-f-a-g2-g1	0,15	50	
50C5	6	kg3-g1-f-f-g1-g2-a	0,15	50	

1) Ra = 4,5. 2) Wo = 2,2. 3) Jg2 = 11. 4) S = 7,5.

OUTPUTPENTODE (TETRODE) — 13

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
6		-8	110	200	45	2,5	4,5	3

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
35A5	2	f-a-g2-x-x-g1-k-f	0,15	35	
35A5IT	2	f-a-g2-x-x-g1-k-f	0,15	35	
35L6GT	1	a-f-a-g2-g1-x-f-kg3	0,15	35	
50A5	2	f-a-g2-x-x-g1-k-f	0,15	50	1)

1) S = 8. Wo = 4,5.

OUTPUTPENTODE (TETRODE) — 14

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
6		-16	135	200	60	3	3	6

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6U6GT	1	x-f-a-g2-g1-x-f-kg3	0,75	6,3	
25B6G	1	x-f-a-g2-g1-x-f-kg3	0,3	25	1)

1) Vg = -23. Jg2 = 13.

OUTPUTPENTODE (TETRODE) — 15

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
6,5		-18	400	400	63	13	4	10

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
PT25H	11	f-g1-f-a-g2	2	4	

OUTPUTPENTODE (TETRODE) — 16

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
9		-8	200	200	55	5	3,5	4

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
CL4	3	f-a-a-g2-x-x-k-f-g1	0,2	33	
CL6	3	f-a-a-g2-x-x-kg3-f-g1	0,2	35	1)
CL33	1	x-f-a-g2-g1-x-f-kg3	0,2	33	
C70D	15	x-g1-g2-f-f-kg3-a-x-g1	0,2	35	4)
PEN36C	15	x-g1-g2-f-f-kg3-a	0,2	33	
P3580	3	f-x-a-g2-x-x-kg3-f-g1	0,2	35	4)
ULP61	3	f-a-a-g2-x-x-kg3-f-g1	0,2	33	
UP6	3	f-x-a-g2-x-x-kg3-f-g1	0,2	35	4)
UP13	1	x-f-a-g2-g1-x-f-k	0,2	35	4) 5)
UP35U	3	f-x-a-g2-x-x-k-f-g1	0,2	35	
VL4	3	f-a-a-g2-x-x-kg3-f-g1	0,05	110	2)
6V6	1	a-f-a-g2-g1-x-f-kg3	0,45	6,3	
6V6GT	1	a-f-a-g2-g1-x-f-kg3	0,45	6,3	
6W6GT	1	a-f-a-g2-g1-x-f-kg3	1,25	6,3	2)
7C5	2	f-a-g2-x-x-g1-kg3-f	0,45	6,3	3)
14C5	2	f-a-g2-x-x-g1-k-f	0,225	12,6	3)

Type	Base No.	Pin Connections	Jf A	Vf V	Notes
25L6	1	s-f-a-g2-g1-x-f-kg3	0,3	25	1)
25L6GT	1	s-f-a-g2-g1-x-f-kg3	0,3	25	1)
50C6GT	1	s-f-a-g2-g1-x-f-kg3	0,15	50	2)
50L6GT	1	s-f-a-g2-g1-x-f-kg3	0,15	50	1)

1) Vg2 = 100. 2) Va = 135. Ra = 2. 3) S = 3,7. Ja = 30. 4) Ja = 45. 5) Jg2 = 8. Ra = 4,5.

OUTPUTPENTODE (TETRODE) 17

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
9		-7	250	250	36	4	7	4,5

Type	Base No.	Pin Connections	Jf A	Vf V	Notes
AC2/PEN	15	x-g1-g2-f-f-kg3-a	1,75	4	
AC5/PEN	15	x-g1-g2-f-f-k-a	1,75	4	3)
AL3	3	f-x-a-g2-g1-x-kg3-f	1,85	4	
AL4	3	f-x-a-g2-g1-x-kg3-f	1,75	4	
A70D	15	x-g1-g2-f-f-kg3-a	1,95	4	
EF51	5	f-a-kg3-x-g2-g1-kg3-f	0,7	6,3	
EL3	3	f-x-a-g2-g1-x-kg3-f	0,9	6,3	
EL3N	3	f-x-a-g2-g1-x-kg3-f	0,9	6,3	
EL11	4	g1-kg3-x-f-f-x-a-g2	0,9	6,3	
EL33	1	x-f-a-g2-g1-x-f-kg3	0,9	6,3	
EL41	5	f-a-kg3-x-g2-g1-kg3-f	0,65	6,3	
ELP71	3	f-x-a-g2-g1-x-kg3-f	1,2	6,3	
KT41	15	x-g1-g2-f-f-k-a	2	4	1)
KT61	1	s-f-a-g2-g1-x-f-k	0,95	6,3	1)2)
KT81	2	f-a-g2-x-x-g1-k-f	0,95	6,3	1)2)
NLP61	3	f-x-a-g2-g1-x-kg3-f	1,75	4	
N14M	1	x-f-a-g2-g1-x-f-k	0,9	6,3	
N78	6	g1-kg3-f-f-a-x-g2	0,64	6,3	
PENA4	15	x-g1-g2-f-f-kg3-a	1,95	4	
PEN45	1	f-k-a-g2-g1-m-x-f	1,75	4	5)
PL33	1	s-f-a-g2-g1-x-f-kg3	0,3	19	
PTZ	15	x-x-g2-f-f-kg3-a-g1	0,2	13	4)
PT4	15	x-g1-g2-f-f-kg3-a	2	4	4)
PT5	15	x-g1-g2-f-f-kg3-a	0,3	26	4)
PT10	15	x-g1-g2-f-f-kg3-a	2	4	5)
P495	3	f-x-a-g2-g1-x-kg3-f	1,75	4	4)
P496	3	f-x-a-g2-g1-x-kg3-f	1,2	6,3	
6A25	6	g1-kg3-f-f-a-g2-g1	0,45	6,3	5)6)
6M6	7	g2-g1-kg3-f-f-ic-a-ic-x	0,71	6,3	
6P25	1	s-f-a-g2-g1-x-f-k	1,1	6,3	7)
19AG5	6	g1-kg3-f-f-a-g2-g1	0,15	19	6)
420T	15	x-x-g2-f-f-k-a-g1	2	4	3)

Type	Base No.	Pin Connections	Jf A	Vf V	Notes
402PEN	15	x-x-g2-f-f-kg3-a-g1	0,2	40	
4684	3	f-x-a-g2-g1-x-kg3-f	1,75	4	
4694	3	f-x-a-g2-g1-x-kg3-f	0,9	6,3	

1) Ra = 6. Jg2 = 8. 2) Vg1 = -4,5. 3) Wo = 3. 4) Wo = 3,5. 5) Ra = 5. 6) S = 4. Vg1 = -12. 7) Ra=4,7.

OUTPUTPENTODE (TETRODE) 18

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
9		-14	250	250	72	8	3,5	8

Type	Base No.	Pin Connections	Jf A	Vf V	Notes
AC6/PEN	15	x-g1-g2-f-f-k-x-a	1,75	4	1)
AL5	3	f-x-a-g2-g1-x-kg3-f	2,0	4	
AMOE	15	x-g1-g2-f-f-kg3-a	2,1	4	
EL5	3	f-x-a-g2-g1-x-kg3-f	1,35	6,3	
EL35	1	x-f-a-g2-g1-x-f-kg3	1,35	6,3	2)
EL50	3	f-x-x-g2-g1-g3-km-f-a	1,35	6,3	
KT330	1	s-f-a-g2-g1-x-f-k	0,3/0,6	26/13	5)
KT66	1	s-f-a-g2-g1-x-f-k	1,27	6,3	2)6)
NLP62	3	f-x-a-g2-g1-x-kg3-f	2	4	
PENB4	15	x-g1-g2-f-f-kg3-a	2,1	4	
PEN44	1	f-k-a-g2-g1-x-x-f	2,1	4	3)
PEN46	1	f-k-x-g2-g1-x-x-f-a	1,95	4	1)
P6M0	3	f-x-a-g2-g1-x-kg3-f	1,2	6,3	
P469	3	f-x-a-g2-g1-x-kg3-f	2	4	
6Y6GT	1	s-f-a-g2-g1-x-f-kg3	1,25	6,3	2) 4)
25C6G	1	s-f-a-g2-g1-x-f-kg3	0,3	25	2) 4)
4654	3	f-x-x-g2-g1-g3-k-f-a	1,35	6,3	
4654K	1	x-f-x-g2-g1-g3-k-f-a	1,35	6,3	
4654P	3	f-x-x-g2-g1-g3-k-f-a	1,35	6,3	
4688	3	f-x-a-g2-g1-x-kg3-f	2	4	
4689	3	f-x-a-g2-g1-x-kg3-f	1,35	6,3	
4689K	1	x-f-a-g2-g1-x-f-kg3	1,35	6,3	
4689P	3	f-x-a-g2-g1-x-kg3-f	1,35	6,3	

1) Video. 2) Ra = 2,5. Wo = 6,3. 3) S = 11. Jg2 = 12. 4) S = 7. Vg2 = 135. 5) Ja = 60. Wo = 5. 6) S = 6,3.

OUTPUTPENTODE (TETRODE) — 19

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
9,5		-8	170	170	55	8	3	4,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
BF451	5	f-a-kg3-x-g2-g1-kg3-f	0,1	45	
KT32	1	s-f-a-g2-g1-x-f-k	0,3	26	1) 3) 7)
KT36	1	x-f-x-g2-g1-x-f-k-a	0,3	26	1)
KT71	1	s-f-a-g2-g1-x-f-k	0,16	48	2) 3)
KT101	2	f-a-g2-x-x-g1-k-f	0,1	80	2) 3)
N108	6	g1-kg3-f-f-a-x-g2	0,1	40	
N142	5	f-a-kg3-x-g2-g1-kg3-f	0,1	45	
PEN383	1	f-k-a-g2-g1-x-x-f	0,2	38	2) 3) 4)
PEN3820	15	x-g1-g2-f-f-kg3-a	0,2	38	2) 3) 4)
UL41	5	f-a-kg3-kg3-g2-g1-kg3m-f	0,1	45	
4S10	13	f-g2-g1-k-f-a-s	0,36	18	5)
10P14	1	x-f-a-g2-g1-x-f-k	0,1	40	
12A5	23	f-a-g2-g1-kg3-fc-f	0,3	12,6	3) 6)
402PENA	15	x-x-g2-f-f-kg3-a-g1	0,2	40	1)

1) Va = Vg2 = 150. 2) Jg2 = 13. 3) Ja = 70. 4) S = 12. 5) Ja = 45. Vg1 = -3,5. 6) S = 2,4. Vg1 = -25. 7) Ra = 1,3.

OUTPUTPENTODE (TETRODE) — 20

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
10		-4	250	250	35	7	9	3

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6AG6G	1	x-f-a-g2-g1-x-f-kg3	1,2	6,3	
6AG7	1	g3-f-x-g1-k-g2-f-a	0,65	6,3	1)
6AG7Y	1	g3-f-x-g1-k-g2-f-a	0,65	6,3	
6AK7	1	g3-f-x-g1-k-g2-f-a	0,65	6,3	1)
7A3	15	x-g1-g2-f-f-kg3-a	2	4	
7D6	15	x-g1-g2-f-f-kg3-a	0,2	40	
7D8	15	x-g1-g2-f-f-kg3-a	0,65	13	
6304	12	f-a-g2-g1-k-f	0,6	6,3	

1) Vg2 = 150.

OUTPUTPENTODE (TETRODE) — 21

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
11		-13	250	250	100	12	2,5	12

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
EL34	1	s-f-a-g2-g1-x-f-kg3	1,5	6,3	
EL37	1	s-f-a-g2-g1-x-f-kg3	1,4	6,3	
EL60	8	f-g3-a-x-x-g2-g1-k-f	1,5	6,3	

OUTPUTPENTODE (TETRODE) — 22

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
14		-7	250	250	72	8	3,5	8

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AC4PEN	15	x-g1-g2-f-f-k-a	1,75	4	1)
AL60	15	m-a-g3-f-f-k-g2-g1	2,1	4	
EL6	3	f-x-a-g2-g1-x-kg3-f	1,3	6,3	
EL12	4	g1-kg3-x-f-f-x-a-g2	1,2	6,3	
EL38	1	x-f-a-g2-g1-x-f-kg3	1,4	6,3	2)
PL36	1	g3-f-x-g2-g1-x-f-kg3-a	0,4	30	
UL12	4	kg3-x-f-f-x-a-g2	0,1	60	3)
6P28	1	x-f-x-g2-g1-x-f-k-a	1,1	6,3	4)
20P1	1	x-f-x-g2-g1-x-f-k-a	0,2	38	
4699	3	f-x-g2-g1-x-kg3-f	1,3	6,3	5)

1) Wo = 7. Jg2 = 13. 2) Ja = 100. Jg2 = 13. Wo = 10. 3) Vg2 = 100. Ra=2,5. Wo = 6,5. 4) S = 10. Jg2 = 15. 5) Ja = 55.

OUTPUTPENTODE (TETRODE) + HW-RECTIFIER — 23

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
1,8		-15	100	100	21	4	4,5	0,8
			RECT.	Vo=110	Jo=65			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
25A7GT	1	k2-f-a1-g21-g11-a2-kg31	0,3	25	

OUTPUTPENTODE (TETRODE) + HW-RECTIFIER — 24

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
4,5		-7	90	90	27	2	3	1
			RECT.	Vo=110	Jo=65			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
32L7GT	1	k2-f-a1-g21-g11-a2-f-kg31	0,3	32,5	

OUTPUTPENTODE (TETRODE) + HW-RECTIFIER — 25

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
6		-7	115	115	40	3,5	3	1,5
			RECT.	Vo=110	Jo=65			

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
70A7GT	1	k2-f-a1-g21-g11-a2-f-kg31	0,15	70	
70L7GT	1	k2-f-a1-g21-g11-k1-f-a2	0,15	70	1)
117L7GT	1	k2-f-a1-g11-g21-a2-f-k1	0,09	117	2)
117M7GT	1	k2-f-a1-g11-g21-a2-f-k1	0,09	117	2)
117N7GT	1	x-f-a1-g11-g21-k1-fa2-k2	0,09	117	1)
117P7GT	1	x-f-a1-g11-g21-k1-fa2-k2	0,09	117	1)

1) S = 7,5. 2) Ra = 4. Wo = 0,9.

DOUBLE DIODE OUTPUTPENTODE (TETRODE) — 26

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
7		-6	225	225	32		6	2,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
PENDD4020	15	d1-a-d2-f-f-kg3-g2-g1	0,2	40	
420T DD	15	d-a-d-f-f-k-g2-g1	2	4	

DOUBLE DIODE OUTPUTPENTODE (TETRODE) — 27

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
8		-8,5	200	250	45	6	4,5	4

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
CBL1	3	f-m-a-g2-d1-d2-kg3-f-g1	0,2	44	
CBL31	1	m-f-a-d1-d2-g2-f-kg3-g1	0,2	44	

DOUBLE DIODE OUTPUTPENTODE (TETRODE) — 28

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
9		-7	250	250	36	4	7	4

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
ABL1	3	f-x-a-g2-d1-d2-kg3-f-g1	2,4	4	
AC/2PENDD	15	d1-a-d2-f-f-kg3-g2-g1	2	4	
AC/5PENDD	15	d1-a-d2-f-f-k-g2-g1	2	4	4)
A27D	15	d1-kg3-d2-f-f-a-g2-g1	2,25	4	5)
DN41	15	d1-a-d2-f-f-kg3-g2-g1	2,3	4	1)4)6)
DN143	2	f-a-g1-g2-d1-d2-kg3-f	0,8	6,3	6)7)
DF495	3	f-m-a-g2-d1-d2-kg3-f-g1	1,2	6,3	
EBL1	3	f-x-a-g2-d1-d2-kg3-f-g1	1,18	6,3	
EBL21	2	f-a-g1-g2-d2-d1-kg3-f	0,8	6,3	
EBL31	1	m-f-a-d1-d2-g2-f-kg3-g1	1,5	6,3	
EDDL71	3	f-m-a-g2-d1-d2-kg3-f-g1	1,2	6,3	
PEN4DD	15	d1-kg3-d2-f-f-a-g2-g1	2,25	4	
PEN45DD	1	f-k-a-g2-d2-m-d1-f-g1	2	4	4)6)
PT4D	15	d1-a-d2-f-f-kg3-g2-g1	2	4	2)
PTSD	15	d1-a-d2-f-f-kg3-g2-g1	0,3	2,6	2)
6AY8G	1	x-f-a-g2-d1-d2-f-k-g1	1,25	6,3	3)
6HY8G	1	x-f-a-g2-d1-d2-f-k-g1	1,25	6,3	1)8)9)

1) Vg1 = -3,5. 2) Wo = 3,5. 3) Vg2 = 100. Ja = 52. Jg2 = 1,5. 4) Jg2 = 7,5. 5) Single Diode. 6) Ra = 5,4. 7) Jg2 = 6. 8) Ja = 44. 9) S = 12. Jg2 = 2,4.

DOUBLE DIODE OUTPUTPENTODE (TETRODE) — 29

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
9		-10	200	200	60	6	3	4

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
CBL6	3	f-m-a-g2-d1-d2-kg3-f-g1	0,2	44	3)
PENDD4021	15	d1-a-d2-f-f-km-g2-g1	0,2	45	5)
PEN453DD	1	f-k-a-g2-d2-m-d1-f-g1	0,2	45	
UBL1	1	f-x-a-g2-d1-kg3-d2-f-g1	0,1	55	1)
UBL3	3	f-x-a-g2-d1-d2-kg3-f-g1	0,1	55	1)3)7)
UBL21	2	f-a-g1-g2-d2-d1-kg3-f	0,1	55	1)6)
UDDL71	3	f-m-a-g2-d1-d2-kg3-f-g1	0,2	44	
UDP12	3	f-m-a-g2-x-d-k-f-g1	0,3	40	2)
UDP13	1	x-f-a-g2-d-x-f-k-g1	0,2	40	2)4)
UDP14	39	f-m-a-g2-d1-d2-k-f-g1	0,2	50	

1) Wo = 5. 2) Ra = 4,5. Wo = 2,5. Ja = 40. 3) Vg2 = 100. 4) Single Diode 5) S = 12. Jg2 = 13. 6) Vg1 = -13. 7) Ja = 30.

TRIODE OUTPUTPENTODE (TETRODE) — 30

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W	
2,5		-15	250	250	34	6	7	3	1)
0,3	6	-25		250	4				2)

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6AD7G	1	g1T-f-aP-g2-g1P-aT-f-kg3	0,85	6,3	

1) Pentode. 2) Triode.

TRIODE OUTPUTPENTODE (TETRODE) — 31

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W	
5		-4	200	200	12	1,2	17	1,2	1)
2	65	-2		200	1				2)

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
ECL80	7	aT-gT-ks-f-f-aP-g3-g2-g1P	0,3	6,3	3)
ECL113	1	f-aT-aP-g1P-g2-gT-kg3-f	0,6	6,3	4)
VCL11	4	gT-km-aP-f-f-g2-g1P-aT	0,05	90	

1) Pentode. 2) Triode. 3) Ra = 11. 4) S = 8,5. Ja = 25. Ra = 12. Wo = 2,2

TRIODE OUTPUTPENTODE (TETRODE) — 32

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W	
9		-6	225	225	40	4	7	4	1)
2	70	-2,5		225	2				2)

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
ECL11	4	gT-k-aP-f-f-g2-g1P-aT	1	6,3	
UCL11	4	g1T-k-aP-f-f-g2-g1P-aT	0,1	6,2	3)

1) Tetrode. 2) Triode. 3) Ra = 4,5. Vg1 = -8,5 (Tetrode).

AF-TETRODE OUTPUTPENTODE (TETRODE) — 33

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W	
5		-6	200	200	22	4	9	2	2)
1,5			200	200	1				1)

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
UEL11	4	g21-k-a2-f-f-g22-g12-a1-g11	0,1	48	
VEL11	4	g21-k-a2-f-f-g22-g12-a1-g11	0,05	90	

1) AF-Tetrode. 2) Output-Tetrode.

DOUBLE OUTPUTPENTODE — 34

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
1,8		RK=600	250	250	30	5	16	4,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
ELL1	3	f-g11-a1-g2-g12-a2-kg3-f	0,45	6,3	

DOUBLE OUTPUTPENTODE (TETRODE) — 35

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
2,1		-9	180	180	13	2,8	10	1

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
12L8GT	1	g12-k-g11-a1-g2-f-f-a2	0,15	12,6	

DOUBLE OUTPUTPENTODE (TETRODE) — 36

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Ra kΩ	Wo W
6		-4,5	26	26	20	2	1,5	0,2

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
26A7GT	1	g12-k-g11-a1-g2-f-f-a2	0,6	26	1)
28D7	2	f-g11-g2-a1-a2-kg3-g12-f	0,4	28	2)

1) Jg2 = 4,5. 2) S = 3,4. Ra = 4.

LINE-OUTPUTPENTODE (TETRODE) — 37

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
5		-15	250	400	80	6		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6BG6G	1	x-f-kg3-x-g1-x-f-g2-a	0,9	6,3	
6BQ6GT	1	x-f-x-g2-g1-x-f-k-a	1,2	6,3	1) 2)
6CD6G	1	x-f-k-x-g1-x-f-g2-a	2,5	6,3	1)
19BG6G	1	x-f-kg3-x-g1-x-f-g2-a	0,3	18,9	

1) Vg2 = 170. 2) Jg2 = 12.

LINE-OUTPUTPENTODE (TETRODE) 38

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
6,5		-23	180	180	45	3		

Type	Base No.	Pin Connections	Jf A	Vf V	Notes
PL81	7	ic-g1-k-f-f-ic-ic-g2-g3-a	0,3	22	
6AU5GT	1	g1-f-k-x-a-x-f-g2	1,25A	6,3	
6AV5GT	1	g1-f-k-x-a-x-f-g2	1,2A	6,3	1)
6BD5GT	1	g1-f-k-x-a-x-f-g2	0,9	6,3	
61BT	1	x-f-x-g2-g1-x-f-k-a	0,85	6,3	2)

1) Vg2 = 120. 2) S = 4.

LINE-OUTPUTPENTODE (TETRODE) 39

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
6,5		-1,5	250	250	85	20		

Type	Base No.	Pin Connections	Jf A	Vf V	Notes
KT44	15	x-g1-g2-f-f-k-g3-a	2	4	
KT45	15	g1-ic-f-f-k-g2-a	2	4	
185BT	1	x-f-x-g2-g1-x-f-k-a	0,45	18	1)

1) Va = Vg2 = 200.

VIDEO PENTODE 4

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
10		-3	250	250	38	4		

Type	Base No.	Pin Connections	Jf A	Vf V	Note.
EF55	8	f-g2-a-g3-x-k-g1-x-f	1	6,3	3)
PL93	7	g2-g1-k-f-f-g3-a-s	0,3	15	1)
6[illegible]PT	1	x-f-g3-g2-g1-x-k-a	1,3	6,3	2)

1) Va = Vg2 = 180. 2) Ja = 65. 3) Vg1 = -4,5. S = 12.

HEPTODE (HEXODE) FREQUENCY CHANGER

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,5		-1,5	100	250	4	9		

Type	Base No.	Pin Connections	Jf A	Vf V	Note.
6BA7	7	g2g4-g1-k-f-f-g5-g3-x-a	0,3	6,3	1)
6BE6	6	g1-kg5-f-f-a-g2g4-g3	0,3	6,3	
6SA7	1	g5-f-a-g2g4-g1-k-f-g3	0,3	6,3	
6SA7GD	1	g5-f-a-g2g4-g1-x-f-k-g3	0,3	6,3	
6SA7GT	1	m-f-a-g2g4-g1-kg5-f-g3	0,3	6,3	
6SB7Y	1	g5-f-a-g2g4-g1-k-f-g3	0,3	6,3	1)
6WC5	23	f-a-g2g4-g3-kg5-g1-f	0,35	6,3	
7Q7	2	f-a-g2g4-g1-g5-g3-k-f	0,3	6,3	
12BA7	7	g2g4-g1-k-f-f-g5-g3-x-a	0,15	12,6	1)
12BE6	6	g1-kg5-f-f-a-g2g4-g3	0,15	12,6	
12SA7	1	g5-f-a-g2g4-g1-k-f-g3	0,15	12,6	
12SA7GT	1	x-f-a-g2g4-g1-kg5-f-g3	0,15	12,6	
12SY7	1	g5-f-a-g2g4-g1-k-f-g3	0,15	12,6	
12WC5	23	f-a-g2g4-g3-kg5-g1-f	0,145	12,0	
14Q7	2	f-a-g2g4-g1-g5-g3-k-f	0,15	6,3	
26D6	6	g1-kg5-f-f-a-g2g4-g3	0,07	26,5	

1) S = 0,95.

HEPTODE (HEXODE) FREQUENCY CHANGER

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,55		-2	90	250	2	2,5		

Type	Base No.	Pin Connections	Jf A	Vf V	Notes
AH1	3	f-m-a-g2-g4-g3-k-f-g1	0,65	4	
CH1	3	f-m-a-g2-g4-g3-k-f-g1	0,2	13	1)
EH1	3	f-m-a-g2-g4-g3-k-f-g1	0,4	6,3	
EH2	3	f-m-a-g2-g4-g3-kg5-f-g1	0,2	6,3	2)
H425	3	f-m-a-g2-g4-g3-k-f-g1	1	4	4)
H604	3	f-m-a-g2-g4-g3-kg5-f-g1	0,2	6,3	2)
H625	3	f-m-a-g2-g4-g3-k-f-g1	0,4	6,3	
H1325	3	f-m-a-g2-g4-g3-k-f-g1	0,2	13	1)
HV12H300	41	f-g3-a-g2g4-k-f-g1	0,08	12,6	3)

1) Vg4 = 50. Ja = 4. 2) Jg2g4 = 3,8. 3) S = 0,3. Vg3 = -5. Ja = 1.
4) Vg2 = 120.

HEPTODE (HEXODE) FREQUENCY CHANGER — 3

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
0,55		-3	100	250	4	3		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AH100	3	f-m-a-g2-g4-g3-k-f-g1	1,1	4	5)
6A7	23	f-a-g3g5-g2-g1-k-f-g4	0,3	6,3	
6A7S	23	f-a-g3g5-g2-g1-k-f-g4	0,3	6,3	
6A8	1	a-f-a-g3g5-g1-g2-f-k-g4	0,3	6,3	
6A8G	1	a-f-a-g3g5-g1-g2-f-k-g4	0,3	6,3	
6A8GT	1	a-f-a-g3g5-g1-g2-f-k-g4	0,3	6,3	
6D8G	1	a-f-a-g3g5-g1-g2-f-k-g4	0,15	6,3	
6L7	1	x-f-a-g2g4-g3-x-f-k-g1	0,3	6,3	1)2)
6L7G	1	x-f-a-g2g4-g3-x-f-k-g1	0,3	6,3	
7B8	2	f-a-g2-g1-g3g5-g4-k-f	0,3	6,3	
12A8GT	1	a-f-a-g3g5-g1-g2-f-k-g4	0,15	12,6	
14B8	2	f-a-g2-g1-g3g5-g4-k-f	0,15	12,6	
15A2	15	g2-g1-g3g5-f-f-km-a-g4	0,65	4	4)
15D1	15	g2-g1-g3g5-f-f-km-a-g4	0,2	13	4)
15D2	15	g2-g1-g3g5-f-f-km-a-g4	0,15	13	4)
41MPG	15	g2-g1-g3g5-f-f-km-a-g4	1	4	3)
1612	1	x-f-a-g2g4-g3-x-f-kg5-g1	0,3	6,3	1)2)

1) S = 0,4. 2) Jg2 = 7. 3) S = 0,8. Jg2 = 6,5. 4) Jg2 = 2,2. 5) S = 1.

OKTODE FREQUENCY CHANGER — 4

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vg3g5 V	Jg3g5mA
0,6		-2	200	250	1	2,5	50	1

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
[illegible]-2	3	f-m-a-g3g5-g1-g2-kg6-f-g4	0,2	6,3	
[illegible]32	1	a-f-a-g3g5-g1-g2-f-kg6-g4	0,2	6,3	
[illegible]71	3	f-m-a-g3g5-g1-g2-kg6-f-g4	0,2	6,3	
[illegible]	3	f-m-a-g3g5-g1-g2-kg6-f-g4	0,2	6,3	

OKTODE FREQUENCY CHANGER — 5

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA	Vg3g5 V	Jg3g5mA
0,6		-1,5	90	225	2	2	80	3,5

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AK1	28	g2-g1-g3g5-f-f-kg6m-a-g4	0,65	4	1)
AK2	3	f-m-a-g3g5-g1-g2-kg6-f-g4	0,65	4	1)
A80A	15	g2-g1-g3g5-f-f-kg6m-a-g4	0,65	4	
CK1	3	f-m-a-g3g5-g1-g2-kg6-f-g4	0,2	13	
CK3	3	f-m-a-g3g5-g1-g2-kg6-f-g4	0,2	19	2)
C80B	15	g2-g1-g3g5-f-f-kg6m-a-g4	0,2	13	
D407	28	g2-g1-g3g5-f-f-kg6-a-g4	0,65	4	
D1307	3	f-m-a-g3g5-g1g2-kg6-f-g4	0,2	13	
EK1	3	f-m-a-g3g5-g1-g2-kg6-f-g4	0,4	6,3	1)
EK3	3	f-m-a-g3g5-g1-g2-kg6-f-g4	0,6	6,3	2)
FC4	15	g2-g1-g3g5-f-f-kg6m-a-g4	0,65	4	
FC13	3	f-m-a-g3g5-g1-g2-kg6-f-g4	0,2	13	
FC13C	15	g2-g1-g3g5-f-f-kg6m-a-g4	0,2	13	
MX40	15	g2-g1-g3g5-f-f-km-a-g4	1	4	)3)
NM046	28	g2-g1-g3g5-f-f-kg6m-a-g4	0,65	4	
0408	28	g2-g1-g3g5-f-f-kg6m-a-g4	0,65	4	
UM051	3	f-m-a-g3g5-g1-g2-kg6-f-g4	0,2	13	
VHTA	15	g2-g1-g3g5-f-f-km-a-g4	0,2	13	2)
VHTS	15	g2-g1-g3g5-f-f-km-a-g4	0,3	13	1)
X30	15	g2-g1-g3g5-f-f-k-a-g4	0,3	13	1)
X63	1	a-f-a-g3g5-g1-g2-f-k-g4	0,3	6,3	1)

1) Vg1 = -2,5. 2) Jg3g5 = 5,5. 3) Jg2 = 0,9.

TRIODE-PENTODE FREQUENCY CHANGER — 6

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2mA		
2		-2	100	225	5	1,6	PENTODE	
3		0		100			TRIODE	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
ECF12	4	g1P-kg3m-aP-f-f-g1T-aT-g2	0,3	6,3	
UCF12	4	g1P-kg3m-aP-f-f-g1T-aT-g2			

TRIODE-HEPTODE (HEXODE) FREQUENCY CHANGER 7

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
0,3		-2,5	100	225	1,5	3		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
6J8G	1	x-f-a-g2g4-gTg3-aT-f-kg5-g1	0,3	6,3	
6K8	1	s-f-aH-g2g4-gTg1-aT-f-km-g3	0,3	6,3	2)
7D7	2	f-aH-aT-gTg3-g2g4-g1-k-f	0,48	6,3	
7J7	2	f-a-aT-gTg3-g2g4-g1-kg5-f	0,3	6,3	
7S7	2	f-a-aT-gTg3-g2g5-g1-k-f	0,3	6,3	1)
12K8	1	x-f-a-g2g4-gTg1-aT-f-km-g3	0,15	12,6	2)
12K8G	1	s-f-aH-g2g4-gTg1-aT-f-km-g3	0,15	12,6	2)
14J7	2	f-a-aT-gTg3-g2g4-g1-kg5-f	0,15	12,6	
14S7	2	f-a-aT-gTg3-g2g5-g1-k-f	0,15	12,6	1)
20D2	15	aT-gTg1-g2g4-f-f-k-aH-g3	0,15	4	2)

1) S = 0,5. 2) Jg2 = 5.

TRIODE-HEPTODE (HEXODE) FREQUENCY CHANGER 8

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
0,45		-2,5	100	225	3	3	HEXODE	
2				100	3		TRIODE	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
CF141	5	f-aH-aT-gTg3-g2g4-g1-k-f	0,1	14	
UCH41	5	f-aH-aT-gTg3-g2g4-g1-k-f	0,1	14	

TRIODE-HEPTODE (HEXODE) FREQUENCY CHANGER 9

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
0,65		-2,5	85	225	3	3,5	HEXODE	
2				100	4		TRIODE	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
ACH1	28	gTg3-aT-g2g4-f-f-km-aH-g1	1	4	
A36C	15	aT-gTg3-g2g4-f-f-kmg5-aH-g1	1,45	4	
C36A	15	aT-gTg3-g2g4-f-f-kmg5-aH-g1	0,2	21	1)2)
C36C	15	aT-gTg3-g2g4-f-f-kmg5-aH-g1	0,2	29	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
CCH1	3	f-m-aH-gTg3-aT-g2g4-k-f-g1	0,2	20	3)
CCH2	3	f-m-aH-g2g4-gTg3-aT-kg5-f-g1	0,2	29	
CCH35	1	m-f-aT-g2g4-gTg3-aT-f-k-g1	0,2	7	
CF61	5	f-aH-aT-gTg3-g2g4-g1-k-f	0,23	6,3	
ECH3	3	f-m-aH-g2g4-g3gT-aT-k-f-g1	0,2	6,3	
ECH11	4	g1-km-aH-f-f-gTg3-aT-g2g4	0,2	6,3	
ECH33	1	m-f-aH-g2g4-gTg3-aT-f-k-g1	0,2	6,3	
ECH35	1	m-f-aH-g2g4-gTg3-aT-f-k-g1	0,3	6,3	
ECH41	5	f-aH-aT-gTg3-g2g4-g1-k-f	0,23	6,3	
ECH42	5	f-aH-aT-gTg3-g2g4-g1-k-f	0,23	6,3	
OM10	1	m-f-aH-g2g4-gTg3-aT-k-f-g1	0,2	6,3	
UCH11	4	g1-km-aH-f-f-gTg3-aT-g2g4	0,1	20	
UCH42	5	f-aH-aT-gTg3-g2g4-g1-kg5-f	0,1	14	4)
UTH12	3	f-g3-aH-g2-gT-aT-kmg4-f-g1	0,2	17	5)
UTH13	3	f-g3-aH-g2-gT-aT-kmg4-f-g1	0,2	17	
VCH11	4	g1-km-aH-f-f-gTg3-aT-g2g4	0,05	40	
X41	15	aT-gTg3-g2g4-f-f-k-aH-g1	1,2	4	2)
X61M	1	m-f-aH-g2g4-gTg3-aT-f-k-g1	0,3	6,3	
X65	1	m-f-aH-g2g4-gTg3-aT-f-k-g1	0,3	6,3	7)
X76M	1	m-f-aH-g2g4-gTg3-aT-f-k-g1	0,16	13	4)
X78	6	g2g4-g1-fk-f-aH-aT-gTg3	0,3	6,3	
X81	2	f-aH-aT-gTg3-g2g4-g1-k-f	0,3	6,3	
X81M	2	f-aH-aT-gTg3-g2g4-g1-k-f	0,3	6,3	
X101	2	f-aH-aT-gTg3-g2g4-g1-k-f	0,1	19	
X142	5	f-aH-aT-gTg3-g2g4-g1-k-f	0,1	14	
X147	1	m-f-aH-g2g4-gTg3-aT-f-k-g1	0,3	6,3	
X148	2	f-aH-aT-gTg3-g2g4-g1-k-f	0,3	6,3	6)
6AN7	12	g2g4-g1-km-f-f-ic-aH-aT-gT	0,23	6,3	
6P8G	1	s-f-aH-g2g4-gTg3-aT-f-k-gT	0,8	6,3	6)8)
10CI	2	f-aH-aT-gTg3-g2g4-g1-kg5-f	0,1	28	4)
20A1	15	aT-gTg3-g2g4-f-f-k-aH-g1	1,2	4	2)
20D3	7	g2g4-g1-k-f-f-aH-gTg3-aT-fc	0,3	6,3	
41STH	15	aT-gTg3-g2g4-f-f-km-aH-g1	1,15	4	2)
202STH	15	aT-gTg3-g2g4-f-f-km-aH-g1	0,2	20	2)
202THA	15	aT-gTg3-g2g4-f-f-km-aH-g1	0,2	30	
203THA	15	aT-gTg3-g2g4-f-f-km-aH-g1	0,3	20	

1) S = 1. 2) Vg1 = -1,5. 3) Vg2 = 50. 4) Va = 170. 5) Vg2 = 32. Jg2 = 0,1. 6) Ja = 1,7. 7) S = 0,23. 8) Jg2 = 1,4.

TRIODE-HEPTODE (HEXODE) FREQUENCY CHANGER — 10

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA		
0,75		-2,5	85	200	3	6	HEXODE	
2				100	4		TRIODE	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
ACTH1	15	aT-gTg3-g2g4-f-f-kmg5-aH-g1	1,3	4	
ECH4	3	f-kmg5-aH-g2g4-gT-g3-aT-f-g1	0,35	6,3	
ECH21	2	f-aH-aT-g1T-g2g4-g1-g3-f-kg5	0,33	6,3	
TH4B	15	aT-gTg3-g2g4-f-f-kmg5-aH-g1	1,45	4	
TH21C	15	aT-gTg3-g2g4-f-f-kmg5-aH-g1	0,2	21	1)2)
TH30C	15	aT-g1Tg3-g2g4-f-f-kmg5-aH-g1	0,2	29	
TH41	1	f-kg5-aH-aT-gTg3-m-g2g4-f-g1	1,3	4	
TH233	1	f-k-aH-aT-gTg3-m-g2g4-f-g1	0,2	23	
TH2321	15	aT-gTg3-g2g4-f-f-kmg5-aH-g1	0,2	23	
UCH4	1	f-kmg5-aH-g2g4-gT-g3-aT-f-g1	0,1	20	
UCH5	3	f-kmg5-aH-g2g4-gT-g3-aT-f-g1	0,1	20	
UCH21	2	f-aH-aT-g1T-g2g4-g1-g3-f-kg5	0,1	20	
UTH4	3	f-g3-aH-g2g4-gT-aT-km-f-g1	0,2	17	
X143	2	f-aH-aT-gT-g2g4-g1-g3-f-kg5	0,33	6,3	
X145	5	f-aH-aT-gTg3-g2g4-g1-k-f	0,1	28	
4THA	15	aT-gTg3-g2g4-f-f-km-aH-g1	1,5	4	2)
6C9	2	f-aH-aT-gTg3-g2g4-g1-k8g5-f	0,45	6,3	
6C31	1	m-f-aH-g2g4-gTg3-aT-f-kg5-g1	0,83	6,3	

1) S = 1. 2) Vg1 = -1,5.

ENNODE (FM DET. & LIM.) — 11

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Vg3 Vg5 V	
		0	Vg2g4g6	250	0,3	Jg2g4g6	-4	
			20			1,5		

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
EQ40	5	f-a-kg1g7-g5-g2g4g6-g3-kg1g7-f	0,2	6,3	
EQ80	7	g2g4g6-g3-kg7-f-f-a-g1-kg7-g5	0,2	6,3	
6BE7	7	g2g4g6-g3-kg7-f-f-a-g1-kg7-g5	0,2	6,3	

INDICATORI DI SINTONIA

TUNING INDICATOR — 1

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Vl V	
		0/-6		225			225	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
AM1	3	f-x-a-l-g-x-kg1-f	0,3	4	
AM2	3	f-x-a-l-g-g1-k-f	0,32	4	
CEM2	3	f-x-a-l-g-g1-k-f	0,2	6,3	
EM1	3	f-x-a-l-g1-x-k-l	0,2	6,3	
EM4	3	f-x-a2-l-g1-a1-k-f	0,2	6,3	
EM11	4	g1-k-l-f-f-x-a1-a2	0,2	6,3	
EM34	1	k-f-a1-g1-l-a2-f-x	0,2	6,3	
ME4	3	f-x-a-l-g-x-kg1-f	0,35	4	
UM4	1	f-x-a1-l-g-a2-k-f	0,1	12,6	
UM11	4	g1-km-l-f-f-x-a1-a2	0,1	15	
UM34	1	k-f-a1-g1-l-a2-f-x	0,1	12,6	
2E5	12	f-a-g-l-k-f	0,8	2,5	
2G5	12	f-a-g-l-k-f	0,8	2,5	
6AD6G	1	x-f-a1-a2-l-x-f-k	0,15	6,3	1)
6AF6G	1	s-f-a1-a2-l-x-f-k	0,15	6,3	2)
6AF7G	1	x-f-a1-g-l-a2-f-k	0,15	6,3	
6AL7GT	1	g-f-l-d2-d3-d1-f-k	0,15	6,3	3)
6E5	12	f-a-g-l-k-f	0,3	6,3	
6E5GT	1	x-f-a-l-g1-x-f-k	0,3	6,3	
1629	1	s-f-a-l-g-x-f-k	0,15	126	

1) Vl = 150. 2) Va = 160. 3) Vl = 315

TUNING INDICATOR — 2

S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Vl V	
		0/-18		225			225	

Type	Base No.	Base Pin Connections	Jf A	Vf V	Notes
EFM1	3	f-m-aP-g2-g1P-l-kgTg3P-f	0,2	6,3	
EFM11	4	g1P-kgTg3P-l-f-x-g2-aP	0,2	6,3	
EM3	3	f-a-l-g-x-kg1-f	0,2	6,3	
ME41	1	f-k-a-x-g1-x-l-f	0,5	4	
ME91	1	f-k-a-x-g1-x-l-f	0,2	9	

Type	Base		Jr A	Vr V	Notes
	No.	Pin Connections			
TK406	3	f-x-a-f-g1-x-kg3-f	0,3	4	
TK606	3	f-x-a-l-g1-x-kg3-f	0,2	6,3	
TK607	3	f-x-a-l-g-g1-k-f	0,2	6,3	
UFM11	4	g1-kg3-l-f-f-x-g2-a	0,1	15	
Y61	1	x-f-a-l-g-x-f-k	0,3	6,3	
Y64	1	x-f-a-l-g-x-f-k	0,3	6,3	
6AB5	7	f-a-g1-l-k-f	0,15	6,3	1)
6G5	12	f-a-g-l-k-f	0,3	6,3	
6H5	12	f-a-g-l-k-f	0,3	6,3	
6M1	1	x-f-a-l-g-x-f-k	0,3	6,3	
6N5	12	f-a-g1-l-k-f	0,15	6,3	
6T5	12	f-a-g1-l-k-f	0,3	6,3	
6U5	12	f-a-g1-l-k-f	0,3	6,3	
63ME	1	x-f-a-l-g-x-f-k	0,3	6,3	
64ME	1	x-f-a1-g-l-a2-f-k	0,2	6,3	

1) Va = Vl = 135.

LISTA SUPPLEMENTARE

Type	Base		Jr A	Vr V	Na.-Pa.
	No.	Pin Connections			
CY2	3	f-k1-a2-x-x-a1-k2-f	0,2	30	3-39
DFF50 14)	9	fg3-g11-a1-g21-g22-a2-g12-f	0,1	1,4	20-30
DFF51 15)	9	fg3-g11-a1-g21-g22-a2-g12-f	0,05	1,4	20-30
EAF21	2	f-a-g2-d-g3m-g1-k-f	0,33	6,3	28-84
EBF1	3	f-m-a-g2-d1-d2-kg3-f-g1	0,3	6,3	30-85
EL39 1)	1	m-f-x-g2-g1-g3-f-k-a	1,35	6,3	38-103
EL44 2)	1	f-x-x-g3-g2-g1-k-f-a	0,72	6,3	38-103
ME6	3	f-x-a-l-g-x-k-f	0,2	6,3	1-110
NG3020	11	f-x-f-x-x-a	1,1	2	9-42
PY82	7	x-ic-k-f-f-x-ic-x-a	0,3	19	3-39
UAF21	2	f-a-g2-d-g3m-g1-k-f	0,1	20	28-84
XFY22	29	f-g1-f-g2-a	0,0125	1,25	1-23
XFY23	29	f-g1-f-g2-a	0,02	1,25	1-23
1C3	6	f-a-x-g1-x-a-f	0,05	1,4	6-4
1K4	16	f-f-a-g2-g1-fc	0,12	2	12-18
1K5B	1	x-f-a-g2-x-x-fg3-x-g1	0,12	2	12-18
1K6	12	f-a-d-d-g2-fg3-g1	0,12	2	20-21
1K7G	1	x-f-a-d-d-g2-fg3-x-g1	0,12	2	20-21
1N5B	1	x-f-a-g2-g1-x-fg3-x	0,12	2	12-18
2A3	16	f-a-g1-f	2,5	2,5	42-67
2A5	12	f-a-g2-g1-kg3-f	1,75	2,5	5-90
2B25 3)	6	f-x-x-a-x-x-f	0,11	1,4	8-41
2D51	7	f-k1-g11-a1-x-a2-g12-k2-f	0,3	6,3	29-63
6AB6 4)	1	x-f-a1-a2-g12-x-f-k1	0,5	6,3	47-69
6AC6 5)	1	x-f-a1-a2-g12-x-f-k1	1,1	6,3	46-69
6B4G	1	x-f-a-x-g1-x-f-x	1	6,3	42-67
6CG6 6)	6	g1-g3-f-f-a-g2-k	0,3	6,3	3-72
6D5G	1	x-f-a-x-g1-x-f-k	0,7	6,3	34-64
6E8	1	f-x-x-a1-g12-a2-f-k-g11	0,3	6,3	9-107
6H8G	1	m-f-a-d1-d2-g2-f-k-g1	0,3	6,3	29-84
6M7G	1	m-f-a-g2-g3-x-f-k-g1	0,3	6,3	15-79
6M8GT	1	k-f-aP-g2P-g1T-aT-f-d-g1P	0,6	6,3	32-86
6N6G 7)	1	x-f-a1-a2-g12-x-f-k1	0,8	6,3	46-69
6S6GT 8)	1	x-f-kg3-g1-kg3-g2-f-a	0,45	6,3	15-79
6TH8	1	m-f-aH-g2g4-gTg1-aT-f-k-g3H	0,7	6,3	10-109
6T6 8)	1	m-f-a-g2-x-x-f-k-g1	0,45	6,3	15-79
6V4	7	a-x-k-f-f-x-a-x-x	0,6	6,3	11-45
6X6G	1	x-f-a-l-g-x-f-kg6-f	0,3	6,3	1-110
7A8	2	f-a-g2-g1-g3g5-g4	0,15	6,3	3-105
12AP6	6	g1-k-f-f-d-d-a	0,15	12,6	14-56
12AV7	7	a2-g12-k2-f-f-a1-g11-k1-fc	0,23	12,6	29-63
12AX4GT 9)	1	x-x-k-x-a-x-f-f	0,6	12,6	2-37
12AY7	7	a2-g12-k2-f-f-a1-g11-k1-fc	0,15	12,6	21-60
12BH7	6	a1-g11-k1-f-f-a2-g12-k2-fc	0,3	12,6	21-60
14E7	2	f-a-d-d-g2-g1-kg3-f	0,15	12,6	29-85
20J8	1	x-f-aH-g2g4-gTg3-aT-f-kg5	0,15	13	7-107
21TH8	1	m-f-aH-g2g4-gTg1-aT-f-k-g3	0,2	21	10-109
25B5 5)	12	f-a1-a2-g12-k1-f	0,3	25	46-69
25B8	1	kP-f-aP-g2-aT-kP-f-gT-g1P	0,15	25	32-86
25N6 5)	1	x-f-a1-a2-g12-x-f-k1	0,3	25	46-69
25Y6	1	m-f-a1-k1-a2-x-f-k2	0,15	25	10-43
26HK6	6	g1-k-f-f-d-d-a	0,07	26,5	14-55
26CG6 6)	6	g1-g3-f-f-a-g2-k	0,3	6,3	3-72
45Z3	6	f-a-x-k-x-a-f	0,075	45	2-38

4525		1	x-f-fo-x-a-x-f-x	0,15	45	2-38
46	10)	30	f-a-g1-g2-f	1,75	2,5	3-89
83V		16	f-a-g-f	2	5	13-47
1293	11)	1	f-a-x-x-x-g-x-f	0,11	1,4	11-5
1875		3	f-x-x-x-x-x-x-f-a	2,3	4	9-42
1876	12)	3	f-x-a-x-x-x-x-f	0,3	4	9-42
1878	13)		Edison screw fitting	0,7	4	8-41
1883		5	fk-x-a1-x-x-a2-x-f	1,6	5	11-45
5670		7	f-k1-g11-a1-x-a2-g12-k2-f	0,35	6,3	21-60
5751		7	a1-g11-k1-f-f-a2-g12-k2-fo	0,35	6,3	19-59
5814		7	a1-g11-k1-f-f-a2-g12-k2-fo	0,35	6,3	21-60

1) Vg1 = -35. Va = Vg2 = 400. 2) Va = Vg2 = 250. Ja = 20. 3) Vimax =1000. 4) S = 2. Ja = 34+5. Wo = 3,5. 5) Ja = 45+7. Ra = 4. 6) Vg1 = -8. 7) Ja = 42+9. Ra = 7. 8) Vg2 = 100. 9) TV. damping diode. 10) Ra = 6. Wo = 1,3. 11) Vg1 = 0. 12) Vimax = 850. 13) Vimax = 10000. 14) Vg1 = -1. Va = Vg2 = 25. S = 1,2. 15) Va = Vg2 = 25.

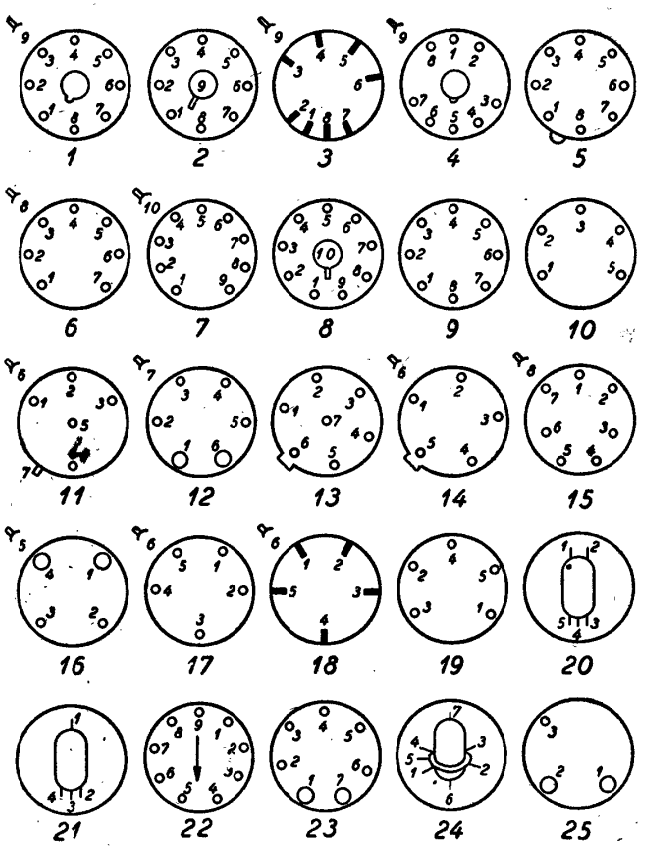
SUPPLEMENT: AF-TETRODE-OUTPUT PENTODE

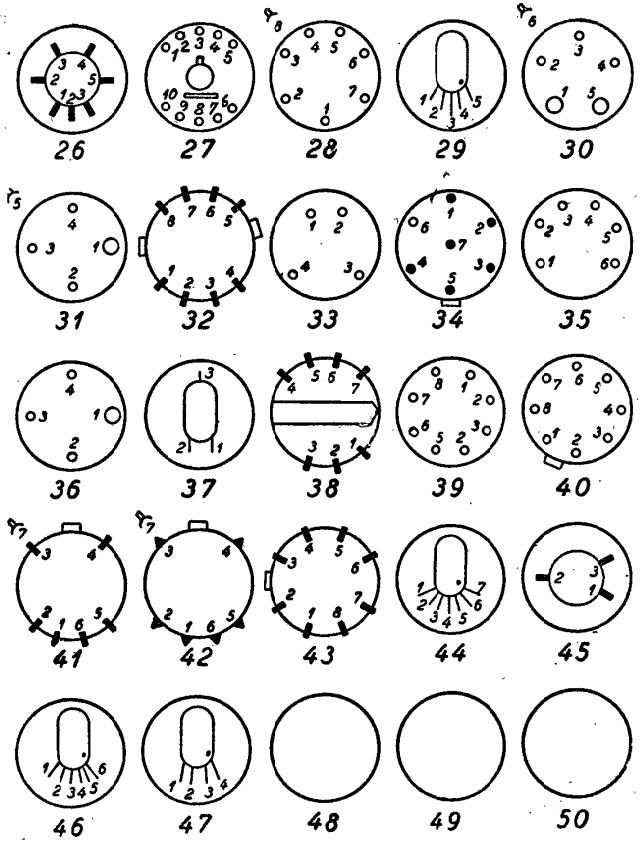
S mA/V	μ	Vg1 V	Vg2 V	Va V	Ja mA	Jg2 mA	Ra kΩ	Wo W
9		-8,5	200	200	45	9	4,5	4 2)
1,8		-0,8	50	100	2			1)

Type	Base		If A	Vf V	Notes
	No.	Pin Connections			
UEL51	27	a2-f-f-g22-g12-a1-g21-g11-k-x	0,1	62	

1) A.F. Tetrode. 2) Output tetrode.

ZOCCOLI





ABBREVIAZIONI USATE NELL'INDICE PER INDICARE LE FABBRICHE COSTRUTTRICI

AWV. Amalgamated Wireless Valve Co. Pty. ltd. Yor St., Sydney, N. S. W. Australia.
Br. Brimar. Standard Telephones and Cables Ltd., Brimar Valve Works, Footscray, Kent, England.
Can. Canadian Manufacturer.
Ch. Chatham Electronics Inc., 475 Washington St., Newark 2, New Jersey, USA.
Co. A. C. Cossor Ltd., Cossor House, Highbury Grove, London N5, England.
Da. Dario: Empex Electrical Ltd., Gower St., Sedford Square, London W. C. 1, England.
Ev. Ever-Ready Radio Valve Co. Ltd., Bowmans Place, London N 7, England.
FA. French Army.
Fe. Ferranti Ltd., Moston, Manchester 10, England.
Fi. Fivre: Fabbrica Italiana Valvole Radio Elettriche, Via Degli Amedei N 8, Milan, Italy.
GE. General Electric Company of America, Schenectady 5, New York, USA.
Hi. Hivac Ltd., Greenhill Crescent, Harrow - on-the - Hill, Middlesex, England.
Ho. Hoges: German manufacturer.
Hy. Hytron Radio and Electronics Corpn., 76 Lafayette St., Salem, Mass., USA.
Jap. Japanese manufacturer.
KR. Ben-Rad.: American Manufac.
Ma. Mazda: Edison-Swan Electric Co. Ltd., 55 Charing Cross Rd., London W. C. 2, England and Lampe Mazda, 29 rue de Lisbonne, Paris VIII^{e}, France.
Mi Marconi Wireless Telegraph Co. Ltd., Marconi House, Chelmsford, Essex, England. The Marconiphone Company Ltd., Head Office, Hayes, Middlesex.
Mp. M. P. Pedersen, Ll. Strandstræde, Copenhagen, Denmark.
Mu. Mullard Electronic Products Ltd., Century House, Shaftesbury Ave., London W. C. 2, England.
NU. National Union Radio Corpn, 350 Scotland Road, Orange, New Jersey, USA.
Os. Osram Works, Brook Green, London W. 6, England, and The General Electric Co. Ltd., Magnet House, Kingsway, London W. C. 2, England.
Ox. Oxytron: Skandinavisk Rorfabrik, V. Boulevard 42, Copenhagen K. Denmark.
Ph. N. V. Philips Gloeilampenfabrieken, Eindhoven, Holland.
Ra. Raytheon Manufacturing Co. 50 Broadway, New York 4, N.Y. USA.
RCA. Radio Corporation of America, RCA Building, 30 Rockefeller Plaza, New York 20, N. Y. USA.
Re. Rectron: German manufacturer.
Ro. Rogers Electronic Tubes, Ltd., 11-19 Brentcliffe Road, Leaside, Toronto 17, Ont., Canada.
Sa. Sator.
Si. Siemens: Siemens & Halske, A/S, Luitpoldstr. 45-47, Erlangen, Germany.
SIF. French manufacturer.
Sw. A. B. Standard Radiofabrik; Ulvsunda, Sweden.
Sy. Sylvania Electric Prodcts Inc., 500, 5. Ave., New York, N.Y., USA.
Te. Telefunken G.m.b.H., Berlin-Schöneberg, Maxstrasse 8, Germany.
TKD. Te-ka-de: Süddeutsche Telefon-Apparate-Kabel, Schliess Fach 98, Nürnberg 2, Germany.
Tr. Triotron: Thorn Electric Industries Ltd., 105 Judd., St., London W. C. 1, England.
TS. Tung-Sol Lamp Works Inc., 95; Eingth Ave., Newark, New Jersey, USA.
Tu. Tungsram Radio Work, Ltd., West Road, Tottenham, London, N 17, Engl.
Ul. Ultron.
US. USA. manufacturer.
Va. Valvo: Philips Valvo Werke, G.m.b.H., Hamborg, Germany.
Vi. I. Visseaux, 88 quai Pierre Seize, Lyons (Rhône), France.

INDICE DELLE ABBREVIAZIONI USATE NEL TESTO

A

a Placca
A Ampère
aH Placca dell'esodo (eptodo)
anode Placca
ampl. Amplificatore
aP Placca del pentodo
aT Placca del triodo
AWV Amalgamated Wireless Valve Co. - **Valvole**
a1 Placca n. 1 del I sistema
a2 Placca n. 2 del II sistema

B

Base Zoccolo della valvola
Batt. Batterie (di pile)
Broad-band Larga banda
Br Brimar - **Valvole**

C

Can Canadian - **Valvole**
Co A. C. Cossor - **Valvole**
Ch Chatham Electronics Inc. - **Valvole**
Changer Convertitore
Connections Connessioni

D

Da Dario - **Valvole**
det Detector (rivelatore)
diode Diodo
double Doppio
doubler Raddoppiatore
d Placca del diodo
d1 Placca del 1° diodo
d2 Placca del 2° diodo

E

Emission Emissione
Ev Ever-Ready Radio Valve - **Valvole**
Enneode Enneodo

F

f Filamento o riscaldatore
f+ Positivo del filamento
f— Negativo del filamento
fc Presa centrale del filamento
Fe Ferranti - **Valvole**
Fi F.I.V.R.E. - **Valvole**
FM Frequency Modulation (modulazione di freq.)
Frequency Frequenza
Full Piena
Full-wave rectifier Diodo biplacca (raddrizzatore delle due semionde)

G

g Griglia
g1 1ª griglia
g1H 1ª griglia nell'esodo
g1P 1ª griglia nel pentodo
gT Griglia del triodo
g11 1ª griglia del I sistema
g12 1ª griglia del II sistema
g2 2ª griglia
g2H 2ª griglia nell'esodo (eptodo)
g2P 2ª griglia nel pentodo
g21 2ª griglia del I sistema
g22 2ª griglia del II sistema
g3 3ª griglia
Ge General Electric Company - **Valvole**

H

Half Mezzo
Half-wave Semi-onda
Hi Hivac Ltd. - **Valvole**
Hf Alta frequenza
Hexode Esodo
Heptode Eptodo
Ho Hoges - **Valvole**
Hy Hytron - **Valvole**

I

Ia Corrente anodica
If Corrente del filamento o riscaldatore
Ig2 Corrente della 2ª griglia
Io Corrente d'uscita del raddrizzatore
IF Internal frequency (media frequenza)
Iap Iapanese - **Valvole**
Indicator Indicatore
ic Connessione interna

K

k Catodo
k1 Catodo del I sistema
k2 Catodo del II sistema
kD Catodo del diodo
Kr Ken-Rad Valve - **Valvole**
kΩ Kiloohm

L

l Schermo fluorescente
line Linea dei tempi (circuiti televisivi)
LF Bassa frequenza
lim Limitatore

M

m Massa - metallizzazione
mA Milliampère
mA/V Milliampère × volt
mV Millivolt
mW Milliwatt
MΩ Megaohm
Ma Mazda - **Valvole**
Measurements Misure
Mi Marconi - **Valvole**
Mp M. P. Pedersen - **Valvole**
Mu Mullard - **Valvole**
mu Vedi μ

N

Nu National Union - **Valvole**
No Numero
Notes Nota bene

O

Os Osram - **Valvole**
Ox Oxytron - **Valvole**

P

Ph Philips - **Valvole**
Pin Piedino allo zoccolo valvola
Pentode Pentodo

R

Ra Resistenza esterna del circuito anodico
Rg Resistenza esterna del circuito di griglia
Rk Resistenza catodica
Ra Raytheon - **Valvole**
RCA Radio Corporation of America - **Valvole**
Re Rection - **Valvole**
Ro Rogers - **Valvole**
Rectifiers Rettificatore

S

Secondary Secondaria
s Schermo interno
S Pendenza o mutua conduttanza
Sa Sator - **Valvole**
Si Siemens - **Valvole**
SIF French Manufacturer - **Valvole**
Sw A. B. Standard Radiofabrik - **Valvole**
Sy Sylvania - **Valvole**

T

Te Telefunken - **Valvole**
TKD Te-Ka-Dé - **Valvole**
TR Triotron - **Valvole**
TS Tung-Sol
Tu Tungsram - **Valvole**
Type Tipo
Tetrode Tetrodo
Triode Triodo
Tuning Accordo (sintonia)

U

UL Ultron - **Valvole**
US USA Manifacturer - **Valvole**

V

V Volt
Va Tensione anodica
Var Variabile
Vf Tensione del filamento o riscaldatore
Vg Tensione di griglia
Vg1 Tensione della 1ª griglia
Vg2 Tensione della 2ª griglia
Vl Tensione dello schermo fluorescente
Vo Tensione d'uscita
Voltage Tensione

V

Va Valvo - **Valvole**
Valvole Indica che trattasi di Case costruttrici (vedi pag. VIII)
Vi Visseaux - **Valvole**
Video Visione

W

W Watt
Wa Dissipazione anodica
Wo Potenza d'uscita
Wave Onda

X

X Piedino non usato
Ω Ohm
μ Mu - fattore di amplificazione o coefficiente

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