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NATIONAL BUREAU OF STANDARDS • A. V. Astin, *Director*

Tabulation of Data on Receiving Tubes

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Information on the Bureau's publications can be found in NBS Circular 460, Publications of the National Bureau of Standards (\$1.25) and its Supplement (\$1.50), available from the Superintendent of Documents, Government Printing Office, Washington 25, D.C.

Foreword

This tabulation of data on receiving tubes currently in use has been prepared as part of the National Bureau of Standards Electron Devices Data Service. Established in 1948 to provide technical data on radio tubes to members of the Bureau staff, the service has since been extended to all scientists in government and industry who have legitimate requests. In the course of the program, a large volume of information on domestic and foreign tubes was accumulated on punched cards from which it could be automatically printed. It was felt desirable to make these data available in a single reference source as an aid to circuit designers in selecting tube types for particular uses.

The engineer should find this manual useful in narrowing down the choice of tubes to one or a few types. However, it is not practical to give all possible operating conditions or to provide the characteristic curves for each tube in a tabulation such as this. It will still be necessary to consult the tube manufacturer's literature for such detailed information.

All information appearing in this publication was taken from manufacturers' published specifications and every effort has been made to ensure accuracy and completeness. However, the Bureau cannot assume responsibility for omissions nor for results obtained with these data.

The coding system and format used in this manual were developed and improved through consultations with representatives of the Bureau of Ships, Department of the Navy; Diamond Ordnance Fuze Laboratory, Department of the Army; and private industry. Their cooperation is gratefully acknowledged.

Additional tabulations for other electron devices are being developed and will be issued as rapidly as they are completed. Also, revisions of this tabulation will be issued as deemed necessary to keep it up to date.

A. V. ASTIN, *Director.*

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Tabulation of Data on Receiving Tubes

A tabulation of Receiving-Type Electron Tubes with some characteristics of each type has been prepared in the form of two major listings, a Numerical Listing in which the tubes are arranged by type number, and a Characteristic Listing in which the tubes are arranged by tube type and further ordered on the basis of one or two important parameters. The tabulation is accompanied by a listing of similar tube types and basing diagrams for the listed tubes.

1. Introduction

The Electron Devices Section of the National Bureau of Standards has developed over the past decade an Electron Devices Data Service. This service attempts to obtain and maintain a file of data on all electron devices, i.e., tubes, transistors, diodes, etc., manufactured in the United States and other countries. In an effort to make this service more available to engineers applying electronics in laboratories throughout the country, it was decided to develop a method of tabulating the essential information of these devices in handbook form for ready reference. For this publication on Receiving Tubes, an easily decipherable code and format for the tube characteristics was developed which would be suitable for a punched card system allowing automatic transfer to the printed page. The sources of information were the manufacturers' published handbooks and data sheets. The accuracy of the printed information is reasonably assured by verifying tabulations, by various sortings, and cross checking with manufacturers' publications.

This tabulation includes only the information normally furnished by the manufacturers in their handbooks or data sheets, and includes those tubes of the general class known in the trade as "Receiving Tubes." These include tubes to be found in home entertainment devices, military equipment, general purpose electronic laboratory equipment, etc. The tabulation is limited to tubes with *not more than* 25 watts plate dissipation, and with maximum operating frequency *less than* 1,000 megacycles per second. One further restriction is that the tubes are currently active types made by United States manufacturers, i.e., those tubes appearing in the manufacturers' "New Equipment Price Lists" or those on which a new or revised data sheet has been issued since 1952. Types listed by manufacturers as "For Replacement Only" or as "Discontinued" types are *not* listed.

The user of this tabulation should be reminded that industry has used various letter suffixes to designate improved versions of a tube type. For example the letter "W" indicates that the type has been improved for military end-use and "WA" and/or "WB" indicate further improvements. Thus the "6AL5W" is an improved version of the

"6AL5" and this is continued to the ultimate improved type designation "5726/6AL5W/6097".

To avoid these complex designations, this tabulation lists only the type numbers by which a type is most commonly designated. The user should be cautioned that these versions of a tube may not be bilaterally interchangeable as the improved versions may differ in some physical dimensions or in one or more electrical characteristics.

2. Organization of the Tabulation

The receiving tube tabulation comprises four principal sections as follows:

1. *Numerical Listing.* In this, the tubes are arranged by type number in the numerical-alphabetical sequence which is standard in the industry.

2. *Characteristics Listing.* Here the tubes are grouped according to the number of electrodes, and within the group they are arranged by increasing value of one or two pertinent characteristics.

3. *Similar Tube Types.* Following each tube listed is one or more types similar to it. Here are found those tubes from sections 1 and 2 which are coded as having similar types available, together with some older tubes not included in sections 1 and 2 but which are similar to a current listed tube.

4. *Electronic Industries Association (EIA) Basing Diagrams.* This section contains all basing diagrams for tubes in the tabulation having an assigned EIA base number.

3. Sorting and Terminology of the Tabulation

To assist the user in understanding and applying the tabulation, the method of sorting and the definition of terms and abbreviations are explained in this section.

3.1. Sorting Methods

The Numerical Listing is arranged in numerical-alphabetical sequence by tube type number. In the Characteristic Listing the tubes are arranged in 52 groups by tube structure. Within these groups the tubes are arranged according to in-

creasing value of 1 or 2 important parameters and finally by tube type.

Given below are the groups into which the tubes are arranged and the characteristics by which the tubes are sorted within a group, e.g., all of the single triodes are grouped together, and are arranged in order of increasing value of " μ ". Where two or more tubes have the same μ , these are then arranged by increasing value of "gm". Tubes with identical values of both μ and gm are then sorted by type number.

Group heading	Characteristics sorted on		
	Primary	Secondary	Tertiary
1. Ballast Tube.....	I_b	Type No.	
2. Regulator, Single Diode, Cold Cathode.....	E_b^*	I_b^*	Type No.
3. Regulator, Single Diode, Filamentary Type.....			
4. Reference, Single Diode, Cold Cathode.....			
5. Rectifier, Single Diode, Cold Cathode.....	E_{px}^*	I_b	Type No.
6. Rectifier, Single Diode, Filamentary Type.....			
7. Rectifier, Single Diode, Heater Type.....			
8. Damper, Single Diode.....			
9. Noise Generator.....	E_b	I_b	Type No.
10. Diode, Twin, Cold Cathode.....	E_{px}	I_b	Type No.
11. Diode, Twin, Filamentary Type.....			
12. Diode, Twin, Heater Type.....			
13. Diode, Multiple.....	No. of Sections	E_{px}	I_b
14. Diode with Triode.....	E_{px}	I_b	Type No.
15. Diode with Dissimilar Dual Triode.....			
16. Diode, Twin, with Triode.....			
17. Diode, Twin, with Tetrode.....			
18. Diode, Triple, with Triode.....			
19. Diode with Pentode.....			
20. Diode, Twin, with Pentode.....			
21. Triode, Single.....			
22. Triode, Twin.....			
23. Triode, Dual Dissimilar.....			
24. Triode, Dual Dissimilar, with Diode.....	μ	gm.....	Type No.
25. Triode with Diode.....			
26. Triode with Twin Diode.....			
27. Triode with Triple Diode.....			
28. Triode with Tetrode.....			
29. Triode with Pentode.....			
30. Triode with Hexode.....			
31. Triode with Pentagrid.....			
32. Tetrode, Single.....	gm	Type No.	
33. Tetrode, Twin.....			
34. Tetrode with Diode.....			
35. Tetrode with Twin Diode.....			
36. Tetrode with Triode.....			
37. Beam, Single.....	gm	r_p	Type No.
38. Beam, Twin.....			
39. Beam, Miscellaneous.....			
40. Pentode, Single.....			
41. Pentode, Twin.....	gm	Type No.	
42. Pentode with Diode.....			
43. Pentode with Twin Diode.....			
44. Pentode with Triode.....			
45. Pentagrid, Single.....	gm	r_p	Type No.
46. Pentagrid with Triode.....			
47. Hexode, Single.....	gm	Type No.	
48. Hexode with Triode.....			
49. Octode, Single.....			
50. Thyatron, Triode Type.....	E_{px}	I_b	Type No.
51. Thyatron, Tetrode Type.....			
52. Indicator, Electron Ray.....	E_b	I_b	Type No.

* E_b and I_b used for sorting are the typical values, not maximum. E_{px} is the peak inverse voltage.

3.2. Terminology

The Numerical and Characteristic Listings are in tabular form containing 22 columns. The headings of these columns and their meanings are given below.

A blank in any column indicates that the characteristic designated by the column is not applicable to the tube in question or that no value was given in the available data.

Definitions

Type Number. This column lists the numerical-alphabetical designation assigned to the tube type by the manufacturer.

Code. A letter "S" indicates that this tube is similar to some other type. Such a tube will be found in the Similar Tubes List on pages 89 through 92 with its similar types. It is to be noted that these tubes are "similar", not necessarily equivalent or directly interchangeable.

An asterisk (*) in this column indicates that the tube is on the Military Preferred List issued by the Department of Defense as "Military Standard Electron Tubes; and Semiconductor Devices, Diode" MIL-STD-200D, 29 May 1958.

A number sign (#) is used to designate a tube not on the Military Preferred List but which the manufacturer refers to as a ruggedized, reliable, or premium type.

Kind. An easily decipherable three letter symbol is used here showing the tube to be a diode, triode, beam pentode, etc.

BAL	Ballast
BEA	Beam
DIO	Diode
DWD	Double Diode
GTB	Gated Beam
HEX	Hexode
OCT	Octode
PND	Pentode
PTG	Pentagrid
SHB	Sheet Beam
TET	Tetrode
TRD	Triple Diode
TRI	Triode

Type. A three letter symbol is used to amplify the characterization under "Kind". Thus a tube is designated as single, twin, or combined with some other type in a multiple structure, in one envelope.

Note: A tube containing two or more different structures in one envelope will be listed once for each such structure in the numerical listing and once in each appropriate group in the characteristic listing, e.g., the 6X8 is listed as a triode with a pentode section and also as a pentode with a triode section. The data given on any one line refers to the section of the tube as designated in the column headed "Kind."

DIO	With Diode
DIS	Dissimilar (as applied to Dual Triodes)
DSD	Dissimilar with Diode
DTR	With Dissimilar Dual Triode.
DWD	With Double Diode
PND	With Pentode
SIN	Single Type
TET	With Tetrode
TRD	With Triple Diode
TRI	With Triode
TWN	Twin Type

Bulb. Designates the type, size, and shape of the bulb by an alphabetical-numerical code defined as follows:

A. Initial Letter

MT—Metal Tubular or Cylindrical Shape,
S—Indicates the "ST" design i.e., the domed-conical-body glass bulb,
T—Glass tubular or cylindrical shape.

B. Number—This number multiplied by one-eighth ($\frac{1}{8}$) inch gives the bulb diameter. Only the whole number is used, thus a T6 $\frac{1}{2}$ bulb is designated T6.

C. Final letter applies to subminiature construction.

F—Indicates a rectangular as opposed to a round bulb. In this case the preceding number is the major dimension i.e., a T2 \times 3 bulb is designated T3F.

Descriptive terms are used for the following:

ACO	Acorn Design
CM	Ceramic-Metal Design
LIT	Lighthouse Design
PEN	Pencil Design
ROK	Rocket Design

Use. Gives the application for which the tube was developed or is most useful as stated in the manufacturer's data sheet. If a tube is particularly suited to some band of frequencies such as audio, intermediate, very high, etc., it is so designated in this column by AFA, IFA, VHF, etc. Such designation is the only reference to the frequency of operation of tubes in this Tabulation.

AFA	Audiofrequency Amplifier
AFD	Audiofrequency Driver
CA	Cascode Amplifier
CON	Converter
DA	Damper
DCA	Direct Coupled Amplifier
DET	Detector
DIS	Discriminator
EL	Electrometer
GA	Gating Amplifier
GEN	General Purpose
GGA	Grounded Grid Amplifier
HDA	Horizontal Deflection Amplifier
IFA	Intermediate-frequency Amplifier
IND	Indicator (Electron Ray)

MIX	Mixer
NOI	Noise Generator
ONA	On and Off Applications (Computer Service)
OSC	Oscillator
PA	Power Amplifier
REC	Rectifier
REF	Voltage Reference
REG	Voltage Regulator
RFA	Radiofrequency Amplifier
THY	Thyratron
TRG	Trigger
UHF	Ultra-high Frequency Amplifier
VA	Voltage Amplifier
VDA	Vertical Deflection Amplifier
VDO	Vertical Deflection Oscillator
VHF	Very-High Frequency Amplifier

Char. Refers to a specific characteristic of the given tube.

GAS	Gas-filled (as applied to rectifiers, regulators, etc.)
HIP	High Perveance
RCO	Remote Cut-off i.e., more than 17 volts
SCO	Sharp Cut-off i.e., 7 volts or less
SRC	Semi-remote Cut-off i.e., 8 through 17 volts.

Reg. Indicates the manufacturer who registered the tube with the EIA. In some cases a manufacturer may no longer make a tube which he registered but it was impractical to try to list all companies making a given tube type so the present system was adopted as being fair to all manufacturers.

AM	Amperex Electronic Corp.
BE	Bendix Aviation Corp.
BT	Bell Telephone Laboratories
CH	Chatham Electronics
GE	General Electric Co.
HY	CBS Hytron, A. Division of Columbia Broadcasting System Inc.
NU	National Union Electric Corp.
PL	Lansdale Tube Co.—A Division of Philco Corp.
RA	Raytheon Manufacturing Co.
RC	Radio Corporation of America
SO	Sonotone Corp.
SY	Sylvania Electric Products Inc.
TS	Tungsol Electric Inc.
VI	Victoreen Instrument Co.
WE	Western Electric Co., Inc.
WH	Westinghouse Electric Corp.

Cath. K Designates the type of cathode.

C	Cold Cathode
F	Filamentary Cathode
H	Heater type (i.e., unipotential cathode)

Er. Specifies the nominal heater or filament voltage in volts. In the case of tubes whose heater or filament is center tapped to allow series or parallel operation of the sections, the value given is for the series connection.

I_r. Typical heater or filament current in milliamperes.

Max. E_b. Maximum plate voltage permissible in the tube. In the case of diodes and thyratrons the value is the peak inverse voltage which can be applied to the tube.

Max. I_b. Maximum plate current in milliamperes which the tube may pass.

P_p. Maximum plate dissipation of the tube is listed in watts. In the case of twin tubes the dissipation is for one section only, e.g., the 6SN7GTB is listed at a dissipation of 5 watts. The manufacturer gives this as the value for each plate, but with both units operating the total for both plates must not exceed 7.5 watts. For this reason multiple tubes should be checked in the manufacturer's data before operating the tube with maximum dissipation in each section.

E_b. Typical value for the d-c plate or operating voltage in volts.

I_b. Typical d-c anode current in milliamperes for the operating voltage in the preceding column.

$\frac{gm}{100}$. Typical value of grid-plate transconductance of the tube in micromhos divided by 100. An asterisk (*) preceding the numeral 1 indicates the transconductance lies between 0 and 100 μ mhos.

μ . Typical tube amplification factor.

r_p. Typical value for plate resistance in ohms.

Capacity In. Typical value for input capacitance of the tube i.e., between grid #1 and all other electrodes.

Capacity Out. Typical value for the output capacitance of the tube, i.e., between the anode and all other electrodes.

Note: Both capacity measurements are given in micromicrofarads and are for the tube without an external, grounded shield.

EIA Base No. This column designates the number assigned by the EIA to the basing diagram of the tube. These diagrams will be found in the last section of the Tabulation beginning on page 93. The designation "FL" is used to indicate flexible or flying leads on the miniature or sub-miniature tubes. The column is left blank where no diagram is applicable as in lighthouse and ceramic-metal tubes.

3.3. Unit Symbols

While the normally used electrical unit is printed at the top of each column, it will be noted that letter symbols are used following some numbers to indicate a change of unit.

Symbol	Column heading	Unit
K	Max E _b or E _{pk}	Kilovolts
U	Max I _b and I _b	Microamperes
A	Max I _b and I _b	Amperes
K	r _p	Kilohms
M	r _p	Megohms
*1	$\frac{gm}{100}$	Value between 0 and 100

4. Numerical Listing of
Data on Receiving Tubes

DATA ON RECEIVING TUBES—NUMERICAL LISTING

TYPE NUMBER	CODE	KIND	TYPE	BULB	USE	CHAR.	CATH.		I _f	MAX E _b or E _{px}	MAX I _b	P _p	E _b	I _b	gm 100	μ	r _p	CAPACITY		EIA BASE NO.
							REG. K	E _f										IN	OUT	
OA2WA	S*	DIO	SIN	T5	REG	GAS	RC	C	ma	v	30	w	v	ma	μmho	ohms	μμf	μμf	580	
OA3	S	DIO	SIN	S12	REG	GAS	RC	C	185	v	185		151	18					4AJ	
OA4G	S	TRI	SIN	S12	REG	GAS	RC	C	105	v	40		75	22					4V	
OB2WA	S*	DIO	SIN	T5	REG	GAS	SY	C	225	v	100		225	25					580	
OB3	S	DIO	SIN	S12	REG	GAS	HY	C	133	v	30		108	18					4AJ	
OC2	S	DIO	SIN	T5	REG	GAS	SY	C	130	v	30		90	18					580	
OC3	S	DIO	SIN	S12	REG	GAS	RC	C	115	v	30		75	18					4AJ	
OD3	S	DIO	SIN	S12	REG	GAS	RC	C	133	v	40		108	22					4AJ	
OZ4G	S	DIO	TWN	T7	REC	GAS	SY	C	185	v	40		153	22					4R	
1A3	S	DIO	SIN	T5	REC	VAC	RA	C	200	v	200		300	75					5AP	
1A7GT		PTG	SIN	T9	CON	VAC	RC	H	330	v	5		117	500U						
1A85		PND	SIN	T9	VA	RCO	HY	F	110	v	4		90	600U					7Z	
1AD4		PND	SIN	T3F	VA	SCO	SY	F	150	v	7		150	7	14		600K		58F	
1AD5	S	PND	SIN	T3	VA	SCO	RA	F	100	v	7		45	3	20		500K		FL	
1AE4		PND	SIN	T5	RFA	SCO	SY	F	40	v	4		68	2	7		700K		8CP	
1AF4		PND	SIN	T5	VA	SCO	RA	F	100	v	11		90	4	16		500K		6AR	
1AG4		PND	SIN	T3F	PA	SCO	SY	F	25	v	3		68	1	9		2M		6AR	
1AH4		PND	SIN	T3F	RFA	SCO	RA	F	40	v	4		41	2	10		180K		FL	
1AJ5		DIO	PND	T3F	DET	VAC	RA	F	40	v	2		68	1	8		2M		FL	
1AJ5		PND	DIO	T3F	VA	SCO	RA	F	40	v	2		45	1	4		300K		FL	
1AK4		PND	SIN	T3F	RFA	SCO	RA	F	20	v	1		68	750U	8		2M		FL	
1AK5		DIO	PND	T3F	DET	VAC	RA	F	20	v	2		41	2	10		400K		FL	
1AK5		PND	DIO	T3F	VA	SCO	RA	F	20	v	1		45	500U	3		400K		FL	
1AX2A		DIO	SIN	T6	REC	VAC	HY	F	650	v	11		20K	300U					9Y	
1B3GT	S	DIO	SIN	T9	REC	VAC	RC	F	200	v	17		35	2					3C	
1C5GT		PND	SIN	T9	PA	SRC	HY	F	100	v	12		90	8	16		115K		6X	
1DN5		DIO	PND	T5	DET	VAC	TS	F	50	v	3		68	250U	6		600K		68W	
1DN5		PND	DIO	T5	AFA	SRC	TS	F	50	v	3		68	2	6		600K		68W	
1E8	S	PTG	SIN	T3	CON	SRC	SY	F	40	v	4		68	1	17		400K		8CN	
1F5G		PND	SIN	S14	PA	SRC	SY	F	120	v	180		135	8			200K		6X	
1G3GT	S	DIO	SIN	T9	REC	VAC	RC	F	200	v	30		25	1	8		11K		3C	
1G4GT		TRI	SIN	T9	VA	RCO	GE	F	50	v	4		90	2					5S	
1H2		DIO	SIN	T6	REC	VAC	GE	H	550	v	50		10	500U					9DT	
1H5GT		DIO	TRI	T9	DET	VAC	HY	F	50	v	5		90	150U	3		240K		5Z	
1H5GT		TRI	DIO	T9	VA	SCO	HY	F	50	v	110		90	150U	3		65		5Z	

DATA ON RECEIVING TUBES (Continued)

TYPE NUMBER	CODE	KIND	TYPE	BULB	USE	CHAR.	CATH.		I _f	MAX E _b or E _{px}	MAX I _b	P _p	E _b	I _b	gm/100	μ	r _p	CAPACITY		EIA BASE NO.
							REG.	K										IN	OUT	
1J3	S	DIO	SIN	T9	REC	VAC	F	F	200	50	w	50	500U			ohms	μμf	1.6	3C	
1K3	S	DIO	SIN	T9	REC	VAC	F	F	200	50		50	500U					1.6	3C	
1L4	S	PND	SIN	T5	RFA	SCO	R	F	50	6		90	3	9		600K	3.6	7.5	6AR	
1L6		PTG	SIN	T5	CON	SY	F	F	50	4		90	500U			650K	3.2	7.0	7DC	
1LC5		PND	SIN	T9	RFA	SCO	S	F	50	5		90	1	8		17			7AO	
1LC6	S	PTG	SIN	T9	CON	SY	F	F	50	3		90	750U			650K	5.5		7AK	
1LE3		TRI	SIN	T9	GEN	RCO	S	F	50	1		90	1	8	14	19K	1.7	3.0	4AA	
1LG5		PND	SIN	T9	RFA	SRC	S	F	50	5		90	2	8		1M	3.2	7.0	7AO	
1LN5		PND	SIN	T9	RFA	SCO	P	F	50	2		90	2	8		1M	3.0	8.0	7AO	
1N2		DIO	SIN	T12	REC	VAC	S	F	200	50		90	500U				1.4		3C	
1N5GT	S	PND	SIN	T9	RFA	SCO	H	F	50	5		90	1	8		2M	2.8	9.0	5Y	
1P5GT	S	PND	SIN	T9	RFA	SRC	H	F	50	2		90	2	8		800K	3.0	10.0	5Y	
1R4		DIO	SIN	T9	REC	VAC	S	H	150	1		68	1			500K	3.8	7.5	4AH	
1R5		PTG	SIN	T5	CON	RC	F	F	50	6		68	1			100K			7AT	
1S4		PND	SIN	T5	PA	SRC	R	F	100	11		68	7	16					7AV	
1S5	S	DIO	PND	T5	DET	VAC	R	F	50	3		68	250U						6AU	
1S5	S	PND	DIO	T5	VA	SCO	R	F	50	5	0.4	90	4	6		600K	2.2	2.4	6AU	
1T4WA	#	PND	SIN	T5	IFA	SRC	R	F	50	5		90	4	9		170K	3.8	6.5	6AR	
1U4	S	PND	SIN	T5	VA	SCO	T	F	50	6		90	2	9		1M	3.6	7.5	6AR	
1U5	S	DIO	PND	T5	DET	NU	F	F	50	2		90	250U						6BW	
1U5	S	PND	DIO	T5	AFA	SCO	N	F	50	3		68	2	6		600K	2.0	6.5	6BW	
1U6		PTG	SIN	T5	CON	SY	F	F	25	4		90	600U			500K			7CD	
1V2		DIO	SIN	T6	REC	VAC	R	F	300	10		25	500U						9U	
1V6		TRI	PND	T3F	OSC	RA	F	F	40	2		45	400U				4.0	1.9	FL	
1V6		PND	TRI	T3F	CON	SCO	R	F	40	2		45	400U			1M	3.2	2.4	FL	
1X2A		DIO	SIN	T6	REC	VAC	H	F	200	11		14K	175U						9Y	
1X2B		DIO	SIN	T6	REC	VAC	S	F	200	22K		18K	100U						9Y	
1Z2	*	DIO	SIN	T5	REC	VAC	N	F	265	8		18	2						7CB	
2A3	S	TRI	SIN	S16	PA	RCO	R	F	2500	300	15.0	250	60	52	4	800	7.5	5.5	4D	
2A7	S	PTG	SIN	S12	CON	RC	H	F	800	300	1.0	250	4			360K	7.0	9.0	7C	
2AF4A	S	TRI	SIN	T5	UHF	SRC	R	H	600	150	2.2	100	20	75	16	2130	2.2	0.45	7DK	
2B3		DIO	SIN	T9	REC	VAC	G	F	750	27K		12	500U						8H	
2B22		DIO	SIN	L1T	REC	HIP	G	F	750	300		100	5							
2BN4	S	TRI	SIN	T5	VHF	SCO	G	H	600	275	2.2	150	9	68	43	6300	3.2	1.4	7EG	
2C51	S	TRI	TWN	T6	GEN	SRC	B	H	300	300	1.5	150	8	55	35		2.2	1.0	8CJ	

NUMERICAL LISTING

DATA ON RECEIVING TUBES (Continued)

TYPE NUMBER	CODE	KIND	TYPE	BULB	USE	CHAR.	CATH.		I _f	MAX E _b or E _{px}	MAX I _b	P _p	E _b	I _b	gm 100	μ	r _p	CAPACITY		EIA BASE NO.
							REC. K	E _f										IN	OUT	
2CY5	S	TET	SIN	T5	VHF	SCO	WH	H	600	20	2.0	125	10	80		100K	4.5	3.0	7EW	
2D21	S	TET	SIN	T5	THY	GAS	RC	H	600	500	400	400	100				2.4	1.6	78N	
2E24		BEA	SIN	T9	PA	RCO	RC	F	650	75	13.5	250	40	32			9.5	7.0	7CL	
2E25		BEA	SIN	S11	PA	RCO	HY	F	1000	75	10.5	250	40	25			8.5	6.0	5BJ	
2E26	S	BEA	SIN	T9	PA	RCO	RC	H	800	75	17.0	250	42	35			12.5	7.0	7CK	
2E30		BEA	SIN	T5	PA	RCO	HY	F	650	60	10.0	180	32	35			9.5	6.6	7CQ	
2E31		PND	SIN	T3F	RFA	SCO	RA	F	50	45	22	400U	5	5			4.2	4.0	FL	
2E35		PND	SIN	T3F	PA	SCO	RA	F	30	45	45	450U	5	5			2.7	5.7	FL	
2EA5	S	TET	SIN	T5	VHF	SCO	PL	H	600	20	3.2	250	10	80			3.8	2.3	7EW	
2EN5		DIO	TWN	T5	DET	VAC	PL	H	450	5							3.7		7FL	
2EV5		TET	SIN	T5	VHF	SCO	WH	H	600	20	3.2	250	12	88			4.5	2.9	7EW	
2FV6	S	TET	SIN	T5	VHF	SCO	RC	H	600	20	2.0	125	10	80			4.5	3.0	7FQ	
2G5		TRI	SIN	S12	IND	HY	H		800	250		250	240U						6R	
2G21	S	TRI	PTG	T3F	OSC	RA	F		50	45		22	1				3.8	3.7	FL	
2G21	S	PTG	TRI	T3F	MIX	RA	F		50	45		22	200U				3.5	3.6	FL	
2G22	S	TRI	PTG	T3F	OSC	RA	F		50	45		22	1				3.8	3.7	FL	
2G22	S	PTG	TRI	T3F	MIX	RA	F		50	45		22	200U				3.5	3.6	FL	
2T4	S	TRI	SIN	T5	OSC	SRC	SY	H	600	30	3.5	80	18	70			2.9	0.2	7DK	
2V2		DIO	SIN	T11	REC	VAC	GE	F	200	80		20	1						8FV	
3A2		DIO	SIN	T6	REC	VAC	RC	H	220	80		25	2						9DT	
3A3		DIO	SIN	T9	REC	VAC	RC	H	220	80		35	2						8EZ	
3A4		PND	SIN	T5	PA	RCO	RC	F	100	18	2.0	135	15	19			4.8	4.2	78B	
3A5		TRI	TWN	T5	VA	SRC	RC	F	110	5	0.5	90	4	18			0.9	1.0	78C	
3AF4A	S	TRI	SIN	T5	UHF	SRC	GE	H	450	28	2.2	100	20	75			2.2	0.45	7DK	
3AL5	S	DIO	TWN	T5	DET	HIP	GE	H	600	54		117	9						6BT	
3AU6	S	PND	SIN	T5	IFA	SCO	GE	H	600	300	3.0	250	8	45			5.5	5.0	7BK	
3AV6	S	DWD	TRI	T5	DET	VAC	SY	H	600	300	0.5	250	1	16			2.2	0.8	7BT	
3AV6	S	TRI	DWD	T5	VA	SCO	SY	H	600	300									7BT	
3B2		DIO	SIN	T12	REC	VAC	RC	H	220	80		30	1						8GH	
3B4		BEA	SIN	T5	PA	RCO	HY	F	165	25	3.0	150	25	19			4.6	7.6	7CY	
3B7	S	TRI	TWN	T9	UHF	SRC	SY	F	110	15	2.7	135	11	19			1.4	1.8	7BE	
3B24WA		DIO	SIN	T12	REC	VAC	WE	F	3000	300		200	140						3K	
3B28	S*	DIO	SIN	T16	REC	GAS	CH	F	5000	1000		3K	250						4P	
3BA6	S	PND	SIN	T5	RFA	RCO	GE	H	600	300	3.0	250	11	44			5.5	5.0	7BK	
3BC5	S	PND	SIN	T5	RFA	SRC	GE	H	600	300	2.0	250	8	57			6.5	1.8	7BD	

NUMERICAL LISTING

DATA ON RECEIVING TUBES (Continued)

TYPE NUMBER	CODE	KIND	TYPE	BULB	USE	CHAR.	REG.	K	CATH.	E _f	I _f	MAX E _b or E _{px}	MAX I _b	P _p	E _b	I _b	gm 100	μ	r _p	CAPACITY		EIA BASE NO.
																				IN	OUT	
3BE6	S	PTG	SIN	T5	CON	GE	H	H	V	3.2	600	300	14	1.0	250	3	68	43	ohms	5.5	8.0	7CH
3BN4	S	TRI	SIN	T5	VHF	GE	H	H	3.0	450	275	22	2.2	150	9	6300			1M	3.2	1.4	7EG
3BN6	S	GTB	SIN	T5	DIS	GE	H	H	3.2	600	300	12	1.1	100	440U	15				6.0	3.0	7DF
3BU8	S	PND	TWN	T6	VHF	SCO	GE	H	3.2	600	300	12	2.0	250	6	19				5.4	7.6	9FG
3BY6	S	PTG	SIN	T5	GA	SRC	GE	H	3.2	600	300											7CH
3BZ6	S	PND	SIN	T5	IFA	RCO	SY	H	3.2	600	330									7.0	2.0	7CM
3C2		DIO	SIN	T12	REC	VAC	GE	F	3.2	210	33K	80								1.4		8FV
3C23		TRI	SIN	S16	THY	GAS	GE	F	2.5	7A	1K	6A										3G
3CB6	S	PND	SIN	T5	IFA	SCO	GE	H	3.2	600	300									6.5	2.0	7CM
3CE5	S	PND	SIN	T5	RFA	SCO	HY	H	3.2	600	300									6.5	1.9	7BD
3CF6	S	PND	SIN	T5	IFA	SCO	RC	H	3.2	600	300									6.5	2.0	7CM
3CS6	S	PTG	SIN	T5	GA	SCO	GE	H	3.2	600	300	14	1.0	100	1	11				5.5	7.5	7CH
3CY5	S	TET	SIN	T5	VHF	SCO	WH	H	2.9	450	180	20	2.0	125	10	80				4.5	3.0	7EW
3D6	S	BEA	SIN	T9	PA	SRC	SY	F	2.8	110	180	30	4.5	150	10	24				7.5	5.5	68A
3D21A		PND	SIN	S14	OSC	RCO	HY	H	12.6	850	4K		15.0	600	30	55						68U
3DK6	S	PND	SIN	T5	IFA	SCO	WH	H	3.2	600	330									6.3	1.9	7CM
3DT6		PND	SIN	T5	DET	SCO	RC	H	3.2	600	330									5.8		7EN
3EA5	S	TET	SIN	T5	VHF	SCO	PL	H	3.0	450	250	20	3.2	250	10	80				3.8	2.3	7EW
3EV5		TET	SIN	T5	VHF	SCO	WH	H	2.9	450	275	20	3.2	250	12	88				4.5	2.9	7EW
3LF4		BEA	SIN	T9	PA	SRC	SY	F	2.8	50	110	12			8	20						68B
3Q4	S	PND	SIN	T5	PA	SRC	RC	F	2.8	50	90	12										7BA
3Q5G		BEA	SIN	T9	PA	SRC	SY	F	2.8	50	110	12										7AP
3S4	S	PND	SIN	T5	PA	SRC	RC	F	2.8	50	90	12								8.0	6.5	7BA
3V4	S	PND	SIN	T5	PA	SRC	NU	F	2.8	50	90	12								5.5	3.8	68X
4AU6	S	PND	SIN	T5	IFA	SCO	RC	H	4.2	450	300		3.0	250	8	45				5.5	5.0	7BK
4B32	S*	DIO	SIN	T18	REC	GAS	CH	F	5.0	7250	10K	5000										4AT
4BA6	S	PND	SIN	T5	RFA	RCO	GE	H	4.2	450	300		3.0	250	11	44				5.5	5.0	7BK
4BC5	S	PND	SIN	T5	RFA	SRC	GE	H	4.2	450	300		2.0	250	8	57				6.5	1.8	7BD
4BC8	S	TRI	TWN	T6	CA	SRC	SY	H	4.2	600	250	20	2.0	150	10	62				2.5	1.3	9AJ
4BE6	S	PTG	SIN	T5	CON	GE	H	H	4.2	450	300	14	1.0	250	3	3				5.5	8.0	7CH
4BN6	S	GTB	SIN	T5	DIS	GE	H	H	4.2	450	300	12			440U	64				4.2		7DF
4BQ7A	S	TRI	TWN	T6	CA	SCO	SY	H	4.2	600	250	20	2.0	150	9	72				2.6	1.2	9AJ
4BS8	S	TRI	TWN	T6	CA	SCO	WH	H	4.2	600	150	20	2.0	150	10	15				2.6	1.4	9AJ
4BU8	S	PND	TWN	T6	VHF	SCO	GE	H	4.2	450	300	12	1.1	100	2	15				6.0	3.0	9FG
4BX8	S	TRI	TWN	T6	CA	SCO	WH	H	4.5	600	150	20	2.0	150	9	67				2.4	1.25	9AJ

NUMERICAL LISTING