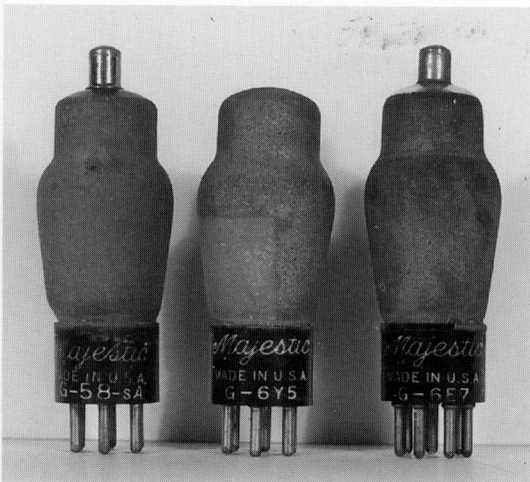
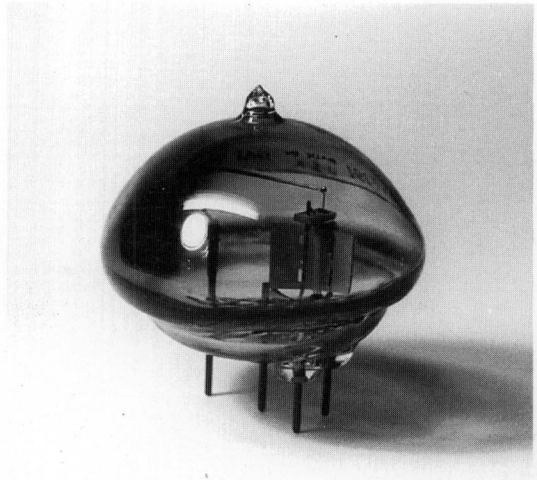
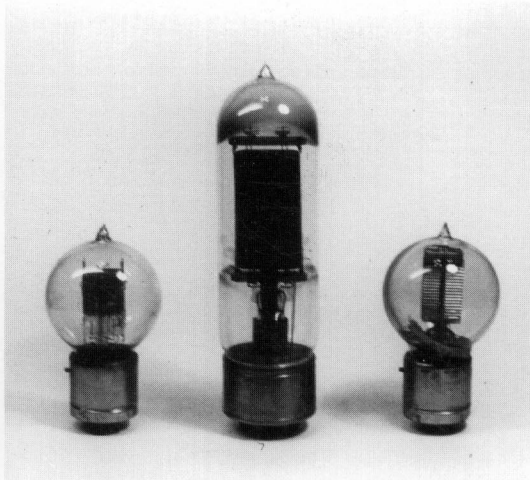


# *Tube Lore*

**A REFERENCE FOR USERS AND COLLECTORS**



*Ludwell Sibley*

# INTERPRETING TUBE DATA

## 1. HOUSEKEEPING DETAILS

Tube data presented in this book are organized with the following, necessarily lengthy, conventions.

- Bulb sizes are given, per industry practice, as "S" (spherical), "ST" (spherical-tubular), "GT" (globe-tubular), or "T" (tubular). The number following is the nominal diameter in eighths of an inch. Thus a "T12" bulb is tubular, 1-1/2" in diameter.
- Early bases are cited as follows. A "UX" base is the '20s four-pin style with locating pin; a "four-pin" base lacks the pin. A "large 4-pin" base is the size associated with '20s transmitting tubes, then called a "50-watt" base. An "industrial" 4-pin base has skewed, unequal spacing of the pins. A "UY" base is the '20s five-pin format.
- "Filament" refers to a directly heated electron emitter, whereas "heater" covers indirectly heated cathodes and "cold cathode" refers to a gas tube. "T-T" means thoriated tungsten. A voltage rating in "VCT" indicates a center-tapped element.
- Where a manufacturer is listed in a tube description, data from that maker was used in preparing the listing. This does not identify which manufacturer developed a given type, although the availability of a development number (see below) gives a hint. Indeed, it is quite difficult to distinguish companies that *made* a given tube from companies that *distributed* it - as in the case of the nuvistor, where all original production apparently was from RCA, whereas all later production was from Sylvania. Manufacturers' names are as abbreviated below.

AR: Arpin	MA: Microwave Associates
AS: Arcturus	MC: Marconi (Br.)
BL: Bomac Labs.	MET: Microwave Electron Tube Co.
BR: Burroughs	MU: Mullard
BX: Bendix	NE: Northern Electric
CGT: Compagnie Generale de T. S. F.	NEC: Nippon Electric
CH: Chatham	NL: National Electronics
CM: Canadian Marconi	PH: Philips
EEV: English Electric Valve	PL: Penta Labs
EG&G: Edgerton, Germeshausen, & Grier	PO: Polarad
EL: Electrons, Inc.	RA: Raytheon
EP: Electronic Products	RE: Rogers Electronics
GC: General Electrodynamics	RL: Rauland
GEC: Gen'l Electric Co. Ltd.	SFR: Societ� Francaise Radioelectrique
HI: Hitachi	SL: Slater
HK: Heintz & Kaufman	SP: Sperry
HP: Hewlett-Packard	ST: Sonotone
HU: Hughes	SV: Svetlana
HY: Hytronic Labs., later Hytron, CBS Hytron, and CBS	TF: Telefunken
IT: IT&T	TH: Thomson-Houston (Br.)
JA: Jenkins & Adair	THF: Thomson-Houston (Fr.)
JB: Johnsonburg	TL: Thermonic (sic) Labs
KK: Kobe Kogyo	TSU: Toshiba
KL: Kuthe Labs.	VA: Varian Associates
LE: Lewis Electronics	VN: Victoreen
LI: Litton Industries	VO: Valvo
LK: Lewis & Kaufman	WE: Western Electric
LME: L. M. Ericsson	WT: Weltronic
	<u>W</u> : Westinghouse

- Manufacturers' developmental or experimental numbers for tubes are listed in {brackets} where known. These numbers usually carry prefixes specific to the maker, as follows:

A: RCA (for amplifiers)	QF-QL-QM-QT-QY: Raytheon
AGR-AX: Amperex	SA-SB-SC: Sylvania
C: RCA (for photodevices)	SD-SR: Sylvania
DT: Tung-Sol	WX: Westinghouse
HD: Hytron	XQ (as suffix): WE
R: RCA (for rectifiers)	Z-ZG-ZP: GE

They help identify the designer of a given tube - except that RCA, say, in preparing to make a GE-designed tube, would assign a developmental number to cover its own manufacturing-standards work.

- For registered types, the date of release of the final registration (where known) is shown in parentheses.
- For base connections: most tubes have pinouts following one of the RMA/EIA standard basing codes, cited in <brackets>. For example, the 6AB4 triode uses pinout <5CE>. Base diagrams are not printed here, to avoid duplicating diagrams in the manufacturers' tube manuals, the H. W. Sams Tube Substitution Handbook, 1940-1978 editions of the ARRL Radio Amateur's Handbook, and several other present-day tube books.
- A letter prefix is often associated with a specific manufacturer - especially for nonregistered types - as follows:

BL: Bomac Laboratories	KU plus 2 digits: Kuthe Labs
BW: United Electronics	KU plus 3 digits: Westinghouse
C: Cunningham, Collins	ML: Machlett Laboratories
CE: Continental Electric	NL: National Electronics
CG: Navy, made by GE	NU: National Union
CH: Chatham/Tung-Sol	PJ-PR-PT: GE
CK: Raytheon	PM: Sylvania
CV: United Electronics	QK-RK-RKR-RM: Raytheon
CW: Navy, made by WE	R: Sylvania
D: WE special or temp. no.	RJ-RO: Westinghouse
DR: General Electronics	RX: Eitel-McCullough
DRJ-DRO: Westinghouse	SE: Navy (Bureau of Steam Eng.)
E: Arcturus (xmtg., 1932)	SR: Westinghouse
EE: Electronic Enterprises	Sxx: Sperry
EL: Electrons, Inc.	T-TT-TZ: Taylor Tubes
F: Federal	TE: Bendix, Red Bank Div.
FA-FG-FJ-FP-FR-GL: GE	TS: Tung-Sol
HF: Amperex	UE: United Electronics
HK: Heintz & Kaufman	UH: Eitel-McCullough
HV: United Electronics	VC: Chatham/Tung-Sol
HY: Hytron	WL: Westinghouse
K: Du Mont	WT: Weltronic
KI-KX: Westinghouse	ZB: Amperex

To the tube researcher, these may be simply "vanity" prefixes for common tubes (e. g., *GL-807* vs. *NU-807* vs. *RK-807* vs. *WL-807*). Conversely, they may distinguish between two entirely different types under the same number (e. g., 951 vs. UE-951).

- For rectifiers, peak inverse voltage (PIV) is given. If no PIV rating is known, a voltage "in" is listed, this simply being the applied AC voltage. The rectified DC current is given where available; otherwise a peak value is cited.

- Triodes are associated with an amplification factor  $\mu$ , and often a transconductance rating  $g_m$ . Tetrodes and pentodes generally carry only a transconductance rating.

- Transconductance is given in millisiemens (mS), the international standard unit of conductance. The old-time "micromho" is clumsy because most post-1930 tubes have  $g_m$ s above 1000  $\mu$ mhos. For familiarization, 1.0 mS = 1000  $\mu$ mhos.

- Tube power ratings, unless noted otherwise, are plate dissipation. The figure is for CCS (continuous commercial service), and is a total for multi-section tubes. Output power from a tube is a different matter; it depends on the mode of operation, and can vary up to two-to-one between Class C and Class A.

- Frequency rating, given for most transmitting types, is the limit for use at full power; operation above this frequency is feasible but at reduced power and/or with increased cooling.

- Technical parameters are quoted as the values most usually published; they may vary from catalog to catalog or from maker to maker. (Transconductance is particularly sensitive to specific operating voltage and current.) Occasionally a maker rated a tube based on production experience - usually upward.

- Certain abbreviations pertain to microwave devices:

BWO: Backwave-wave osc.	IC: Integral cavity
CO: Coaxial output	IM: Integral magnet
EC: External cavity	TWA: Traveling-wave amp.
EM: External magnet	WG: Waveguide output

- Phototubes and photomultipliers are rated as to their spectral sensitivity per the following designations:

No.	Color	Peaks at (Å)
S-1	Red-IR	8000
S-3	Violet	4200
S-4	UV-Violet	4000
S-5	UV	3500
S-8	UV	3700
S-9	Blue	4700
S-10	Blue-Violet	4400
S-11	Blue-Violet	4400
S-13	Blue-UV	4500
S-17	Green-UV	4800
S-19	UV-Violet	3300
S-20	UV-Violet	4200

- Phosphors in cathode-ray tubes carried "P" numbers (now replaced by two-letter indicators). The following designations applied when tubes listed in the CRT chapter were registered:

No.	Color	Peak at (Å)	Persistence
P1 (GJ)	Green	5250	Medium
P2 (GL)	Blue-green	5450	Long
P3 (YB)	Yellow	6000	Medium
P4 (WW)	White	4100, 5400	Medium
P5 (BJ)	Bluish	4300	Short*
P7 (GM)	Blue/green-yellow	4350, 5550	Minutes
P10 (ZA)	(Dark trace)	-	Long
P11 (BE)	Bluish	4600	Short*
P12 (LB)	Orange	5900	Short
P14 (YC)	Purple-org.	4400, 6000	Short
P15 (GG)	Blue-green & near-UV	3900, 5050	Short
P16 (AA)	Near-UV	3900	Short
P22 (XX)	Color TV	4500, 5200, 6300	Medium

\* For photo recording.

## OTHER DEFINITIONS

- "AKA" ("also known as") refers to multiple designations of the same tube.

- "Remote cutoff" defines a tube that can be biased to handle strong signals without cutting off (and will handle automatic gain control). RCA literature of the '30s called this feature "super-control" or "variable- $\mu$ ."

- A "dual-control" pentode (e.g. 6AS6) has its suppressor wired out separately for gate use, etc.

- "Beam power tubes" are receiving pentodes with beam-forming plates in place of suppressor grids. However, transmitting tubes include beam triodes and beam tetrodes with different constructions.

- "Radiator" (R) versions of water-cooled transmitting tubes are always forced-air cooled; they are sometimes derated to as low as half the power rating of a liquid-cooled prototype.

- "VHF" tubes are rated for full power to at least 30 MHz, while "UHF" types are rated to at least 300 MHz.

- "G-G" stands for "grounded-grid."

- "TR" refers to the transmit-receive switch in a radar which disconnects the receiver from the antenna during transmission. "ATR" is an anti-TR switch, which disconnects the transmitter from the antenna during reception.

- "NF" stands for "noise figure," a measure (in dB) of how noise an amplifier generates compared to a perfect amplifier.

- "Mobile-rated" means intended for use with varying battery voltage on the heater, with considerable on-off cycling, and with vibration resistance.

- "Gas" means argon, neon, xenon, etc., as opposed to mercury vapor.

- "Cermet" refers to ceramic-metal construction; RCA's trade term for it was "Cermolox."

- Numerous historic tube applications were in military systems. Examples have been cited where known, some of them Signal Corps "BC" components or "SCR" complete systems, or early Navy radars like SC or SG. Post-1942 military systems are denoted under the "AN" nomenclature system. The following subset of the "AN" code, paraphrased a bit, applies to the systems cited.

Installation	Equipment	Purpose
A: Airborne	L: Countermeasures	A: Auxiliary
C: Air transportable <sup>1</sup>	M: Meteorological <sup>2</sup>	C: Communications
D: Pilotless carrier	P: Radar	G: Gun directing
F: Ground, fixed	R: Radio	N: Navigation
G: Ground, gen'l use	S: Special	Q: Special <sup>3</sup>
M: Ground, mobile		R: Receiving
S: Shipboard		S: Search
T: Ground, transport.		T: Transmitting <sup>4</sup>
U: General utility		W: Remote control
		X: Identification, friend-or-foe

1. "C" obsoleted early, but used into the '50s.

2. Often used for radiosondes.

3. AN/MPQ- family is for mortar location.

4. Includes countermeasures transmitters like AN/APT-5.

- "Computer use" means intended for operation over long periods with plate current cut off.

▪ "Liquid-cooled" means cooling with Fluorocarbon FC-75, water, or ethylene-glycol/water - as opposed to "water-cooled." Non-water coolants were common in super-power military mobile transmitters, especially airborne.

## 2. A NOTE ON EUROPEAN TUBES

A quirk pertains to designations of European tubes. Receiving types of the '50s usually carry a letter indicating heater voltage, a letter(s) showing number of elements, a number indicating base style, and an arbitrary number - for example, ECC88 is a 6.3-V ("E") triode-triode ("CC") on a 9-pin base ("8"). However, many European ruggedized or special-purpose types use a revised sequence; for example, a special variant of the ECC88 is the E88CC. (These are familiar here as the 6DJ8 and its premium variant 6922 respectively.) This is not a hard-and-fast rule - the writer has not seen it elsewhere - but may help explain such cases as EL34 vs. E34L.

## 3. REGISTRATION THEORY PREHISTORY

In the early years of the tube industry, numbering of tubes was a free-for-all, structured only by the development capabilities of GE and Westinghouse and the market power of RCA. Receiving tubes of early vintage (but late enough to have bases) are listed in the "Prehistory" chapter, including lists of uniquely numbered types from the smaller manufacturers.

Transmitting tubes of this era fell mainly into the 800-series, as numbered mainly (and randomly) by RCA. This did not prevent double use of identifiers - for example, 814s from Taylor vs. RCA, 825s from Taylor vs. RCA, or 889s from Du Mont vs. RCA. These types are detailed in the "800" chapter. Meanwhile GE, WE, Westinghouse, and the "independent" makers were free to devise their own tube types and give them their own nomenclature.

### RECEIVING TUBES

The Radio Manufacturers' Association (today's Electronic Industries Association) began putting order into the numbering of receiving tubes in 1933. The first "release" of the Committee on Tube Numbering, chaired by David Grimes of Philco, was dated Feb. 5, 1934. It dealt with the 1A6 and the 1C6, as registered by Sylvania. Release 3 covered the 2A3 and 2A3H. Release 6 (Sept. 14, 1934) dealt with the 2A5, 6C6, and 6D6. The registration process continued throughout "tube history": for example, Release 5536 of June 26, 1967, defined the 6BW11.

Tube identifiers were assigned according to a simple code. An initial digit gives filament or heater voltage: "0" for cold-cathode, "1" for 1 to 2 volts, and on up. The code was gerrymandered slightly to accommodate the loktal series: "7" and "14" refer to 6.3- and 12.6-volt tubes in loktal format.

The letter(s) following the number were assigned (nominally) in sequence from "A," while rectifiers were lettered backward from "Z." As a special case, 6S( ) covered several single-ended versions of double-ended metal tubes, e. g. 6SK7 vs. 6K7.

The final character is a digit giving the number of "usable" elements, that is, elements wired out individually. Thus a simple cathode-type triode would be scored as (heater + cathode +

grid + plate) or "4," as in 6J4. Shields having their own base pins counted; elements wired internally to other elements did not. Taps on heaters theoretically did not count, but there were exceptions like the 35Z5GT.

Suffixes later became common:

"A," "B," "C": improved, backward-compatible versions.

"E": "Export" version. It has never been clear what this implies, but numerous examples include 1LA6E, 6A7E, 6J8EG, and 7J7E.

"G": Large spherical-tubular (ST) glass bulb.

"GT": Small (T9) tubular glass bulb.

"GT/G": GT-size fits-all replacement for either "G" or "GT" type.

"S": Spray-shielded (zinc-clad) glass tube. In practice these were from Majestic in the U. S. (Raytheon for subminiatures) or Rogers in Canada.

"L": Loktal format, on an octal base with normal octal pinout.

"LM," "ML": "loktal-metal," RCA and GE's short-lived construction, ca. 1940.

"LT": RCA's briefly produced loktal-like tube with metal-ringed loktal-wafer base.

"MG": "Metal-glass" construction.

"W": Ruggedized.

"X": Ceramic-based variant (usually from HY, sometimes SY).

"Y": Micanol (mica-filled phenolic) base.

Variants suffixed "E," "L," "W," "X," and "Y" were not registered as such. Presumably the specifications for the "W" types were determined satisfactorily by military specifications like JAN-E-1A and its successors.

The chapter on registered receiving tubes lists types that are (A) from the 1934-1950 era, (B) prototypes of specials listed in other chapters, (C) obscure types not listed in regular tube manuals like RCA's RC-30, or (D) types that are simply odd or interesting.

### CATHODE-RAY TUBES

The RMA began registering CRTs in 1939. The code used is simply (1) the nominal screen diameter in inches, (2) a letter or letters starting from "A," and (3) a "P" number giving the phosphor. Heater voltage was not a problem; the early tubes "all" used 2.5 V @ 2.1 A; later ones "all" used 6.3 V @ 600 mA. There was no attempt to encode the method of focusing or deflection.

### SPECIAL-PURPOSE TYPES

The RMA took on assigning numbers for special-purpose and transmitting tubes in 1942, using a number-letter-number coding scheme. Under this system, about 480 tube types carry somewhat mysterious number-letter-number designations like "2E26" or "4D32." Among the first registrations, in September 1942, was Release 303 covering the 1C21. The code is given at the head of the chapter covering these types.

This system lumped together tubes of all sizes and uses having the same number of elements - "D" included both subminiatures and huge water-cooled items. It did not distinguish among vacuum, mercury-vapor, or gas-filled devices. Multiple-section tubes like the 2G21 were simply scored by the most complex section.

The coding plan didn't last long, being officially dropped ca. 1944 in favor of a non-system: simply assigning four-digit numbers beginning with "5500." Even so, registration releases con-

tinued to come out (e. g., for the 2J70) under the supposedly defunct 1942 system as late as 1955. The four-digit plan wasn't particularly easy on the user - the 7894 and 7984, for example, were both small transmitting tubes, and it was easy to confuse them. The four-digit plan lasted until the end of new tube registrations, and occupies the longest chapter in this book. Somehow it includes germanium P-N junction devices (7223, 7224, 7467) and numerous cadmium-sulfide photoconductors (8100, et al.) - items that are hard to view as "tubes."

Besides the new types, most existing items in the 800 and 900-series were retroactively registered in the early '40s.

The exception to the four-digit plan was solid-state devices. The arrival of the transistor gave the superseded code new life. The first number was redefined: "1" had always applied to diodes, "2" now covered triode transistors, "3" described tetrode or dual-gate transistors, and "4" or "6" referred to multi-lead devices like diode-phototransistor optoisolators. The "1N" numbers reached about 1N6300; "2N," around 2N6800; "3N," about 3N260; "4N," ca. 4N50, "6N," around 6N140. Even so, a changeover to nonregistered (manufacturer-numbered) types slowly occurred, and was largely complete by the time integrated circuits arrived.

Many wartime and '50s tubes were "classified" military technology. Indeed, final registration documents on most radar devices (klystrons, magnetrons, TR tubes) were publicly released only several years after the war, after many of them had become obsolete. A couple of tubes remained secret: as late as 1967, the 2C27 and 2E27 were officially listed as classified - probably as the result of inattention rather than of any continuing military value. Correspondingly, the services maintained a list of types preferred for their use. The unclassified part of the list was widely published; the classified part was not, even (as far as is known) in later times.

Contrasting with the more obscure types, many registered tubes were highly successful and had long periods of popularity. The 2E26, for example, appeared in new equipment designs into the mid-'60s. The 2J42 magnetron was common in later years, both by itself and in improved variants numbered in the four-digit series. It is ironic that devices like the 2K22 klystron, developed to help shut down Germany and Japan, were made in the '60s by Telefunken and Toshiba!

The fact of being registered did not guarantee that a given type was made in quantity, or made at all. Some of the more obscure tubes - whether actually produced or not - had their registrations abandoned; the RMA/EIA registration list in later years simply omitted them and their release dates. Hence the lack of some dates in the lists.

Every process has exceptions. Some special-purpose tubes were designated under the receiving-tube plan. For example, RCA's special versions of the 12SA7, 12SN7, and 12SR7 for aircraft radios operating from 28-volt battery power were registered as the 12SY7, 12SX7, and 12SW7 respectively. Sylvania's

6BL6 and 6BM6 small klystrons were likewise numbered as if they were "receiving" tubes. When Sylvania and GE were hopeful of selling high-performance tubes for RF stages in UHF TV tuners, they registered the "receiving" 6BA4 and 6BY4 - variants respectively of the 2E26 "rocket" triode and the 6299-7077-7391 family of cermet triodes. Conversely, many late home-audio types were inexplicably registered as "special-purpose": the 7025, 7027, 7189, 7199, 7247, 7754, et al.

Even the simple four-digit numbering plan eventually faltered, while approaching 9000 in the 1970s. RCA, for one, eventually began assigning its own four-digit numbers - in the 2000- and 4000-series - for everything from TV transmitting tubes to cadmium-sulfide photocells.

### WHETHER TO REGISTER

Tube makers were free to register their new designs or not. Whether to do so seems to have been a marketing decision. The military services strongly preferred registration, as consistent with their preferred-type lists and with competitive procurement. Registered, the tube might attract second-source makers, who could either (A) increase the salability of the tube or (B) take revenue away. Not registered, the tube might give control of a niche market - and certain industries like radar countermeasures were niches too small to support the administrative burdens of registration. The stakes could be high, as when Westinghouse won a competitive military contract to supply 3500 magnetrons of a registered type. The makers often registered tubes long after introduction, apparently as a result of changes in sales strategy. (The prime example was Eimac, which registered dozens of tubes in the 8000-9000 area when many of had been on the market for years.)



On a tube-box lid,  
evidence of a registra-  
tion process out  
of control.

The RMA-EIA was a registrar, not a policeman. The manufacturers were quite happy to devise tubes only minimally different from those of their competitors. Pressure from transistors forced the development of tubes narrowly optimized for the color-TV market - usually in triple variants for series heater strings at 300, 450 and 600 mA. Toward the end of the tube era, especially with RCA's industry leadership eroding, this led to a glut of dual-, triple-, or even quadruple-numbered types barely distinguishable from each other. This remains a source of confusion today.

## RECEIVING TYPES UNDER RMA-EIA SYSTEM

- 0A2, WA** [AKA WT-210-0051, 150C2, STV150/30]; min. voltage regulator, 150 V @ 5-30 mA (HY) {S856, HD51} (6-8-45) <5BO>. "WA" is rated at 148 V. Variants: 6073, 6626, 6830.
- 0A3** [AKA VR-75/30, 38275, VT-260]; octal voltage regulator, 75 V @ 5-30 mA (HY) (3-6-44) <4AJ>.
- 0A4G** Cold-cathode octal triode, promoted for use in calculating machines and RF remote-control systems operating via AC power lines; 225 V, 25 mA (4-25-38) <4V>. Variant: 1267.
- 0A5** Min. cold-cathode relay pentode, for triggering photoflash tubes; 1 kV max. (SY) (1-15-47). Used with flash tubes like SY R4330.
- 0B2, WA** Min. voltage regulator, 108 V @ 5-30 mA (HY) {HD52, S860} (5-18-45) <5BO>. Variants: 5787, 6074, 6627, 6831.
- 0B3** [AKA VR-90, VR-90/30, 38290, VT-184, WT-210-0016]; octal voltage regulator, 90 V @ 5-40 mA (HY) (9-14-42) <4AJ>. Variant: 1265.
- 0C2** Min. voltage regulator, 75 V @ 5-30 mA (SY) {S859} (3-31-58) <5BO>.
- 0C3, A, W** [AKA VR-105, VR-105/30, 38205, VT-200, CV686]; octal voltage regulator, "105" (108) V @ 5-30 mA (HY) (3-6-44) <4AJ>. "A" has T9 bulb. "W" has T9 bulb inside deep Micanol cup base.
- 0D3, A, W** [AKA VR-150, VR-150/30, 38250, VT-139, CV216, WT-210-0018]; octal voltage regulator, 150 V @ 5-30 mA (HY) (9-14-42) <4AJ>. For "A" and "W," see 0C3.
- 0G3** [AKA 85A2, STV85/10]; min. voltage regulator, 85 V @ 1-10 mA (5-28-52).
- 0Y4, G** Gas rectifier, ionically heated cathode w/ starter electrode, 300 V PIV; gives 40-75 mA from 117 V; promoted to replace 117Z6GT (RA) (9-20-45) <4BU>. "G" is in 0Z4G format.
- 0Z3** Gas rectifier, ionically heated cathode, 350 V applied, 75 mA, intro. 1933 (RA) (6-17-35) <5N>. No known use.
- 0Z4, A, G** Full-wave gas rectifier, ionically heated cathode, 1.6 kV PIV, 30-75 mA (RA) (10-24-35). Up-rated to 90 mA in 1945. "G" is small (T7) size. "A" [AKA (CK) 1003] is up-rated to 110 mA (RA) (10-15-56) <4R>.
- 1A1** Ballast tube, 1.0 V @ 500 mA (SY) (10-26-34).
- 1A3** Min. HF diode, fil. 1.4 V @ 150 mA, 330 V PIV, 5 mA (RCA, W) (5-9-42) <5AP>.
- 1A4, P, T** Rcvg. remote-cutoff pentode, ST12 bulb w/ cap, 4-pin base, fil. 2.0 V @ 60 mA, 1D5 char. (RCA) {A4028} (5-21-35). "P" and "T" lettering derives from industry confusion: SY introduced 1A4 as a tetrode <4K>; others as a pentode <4M>. The pentode version eventually won out. The two should interchange today.
- 1A5GT/G** [AKA VT-124, CV756]; power pentode, fil. 1.4 V @ 50 mA,  $g_m$  0.8 mS, 100 mW out (1LA4 char.); needs 90 V B+; sim. to 1Q5GT, 1T5GT (SY) (6-10-38) <6X>. 1A5G was in the first mass-market series of 1.5-V 50-mA tubes, announced by SY in mid-1938; the others: 1A7G, 1C5G, 1H5G, and 1N5G.
- 1A6** Pentagrid conv., same as 1C6 except for capacitance (RCA) {A564} <6L>.
- 1A7GT/G** [AKA VT-147, CV2]; pentagrid conv. sim. to 1B7GT, 1LA6 (6-10-38) <7Z>.
- 1AB5** [AKA SD719]; loktal HF pentode, "high"  $g_m$  of 1.35 mS (SY, W) (3-20-44) <5BF>.
- 1AB6** [AKA DK96]; min. pentagrid conv., fil. 1.4 V @ 25 mA (HY, TF) (10-16-51) <7DH>. Also see 1AC6.
- 1AC5** T3 submin. pentode, part of early SY-RCA line for AM radios including 1AD6, 1E8, and 1T6; fil. 1.25 V @ 40 mA, 50 mW out (12-31-48) <8CP>.
- 1AC6** [AKA DK92]; min. pentagrid conv., fil. 1.4 V @ 50 mA (HY, TF) (10-16-51) <7DH>. Appears to be re-filamented 1AB6.
- 1AD4** [AKA DF62]; T2X3 submin. RF-AF pentode, spray-shielded, 1.25 V @ 100 mA,  $g_m$  2.0 mS (RA, SY, TF) {QF-408} (1-27-49). Variant: 5875.
- 1AD5** T3 submin. sharp-cutoff pentode, fil. 1.25 V @ 40 mA (12-31-48) <8CP>.
- 1AD6** Submin. pentode, fil. 1.25 V @ 40 mA; see 1AC5.
- 1AE4** Min. pentode, sharp cutoff, fil. 1.25 V @ 100 mA,  $g_m$  1.6 mS (HY) (3-21-50) <6AR>.
- 1AE5** Submin. mixer, fil. 1.25 V @ 60 mA {QF-409} (1-27-49).
- 1AF4** [AKA 1AJ4]; min. remote-cutoff RF pentode, fil. 1.4 V @ 25 mA,  $g_m$  1.0 mS (HY, SY) (2-8-50) <6AR>.
- 1AF5** [AKA 1AH5]; min. diode-pentode, fil. 1.4 V @ 25 mA,  $g_m$  1 mS (HY, SY) (2-8-50) <6AU>.
- 1AG4** T2X3 submin. power pentode, fil. 1.25 V @ 40 mA,  $g_m$  1.0 mS, 35 mW out (RA, SY, W) (8-16-54).
- 1AG5** T2X3 submin. diode-pentode, fil. 1.25 V @ 40 mA,  $g_m$  0.25 mS (SY, W) (9-12-55).
- 1AH4** T2X3 submin. flat-press RF pentode, spray-shielded, fil. 1.25 V @ 40 mA,  $g_m$  0.75 mS (4-23-51).
- 1AH5** [AKA DAF96, 1AF5, q. v.]; min. diode - AF pentode, fil. 1.4 V @ 25 mA,  $g_m$  0.55 mS (HY, TF) (10-16-51) <7DJ>.
- 1AJ4** [AKA DF98]; remote-cutoff RF pentode, fil. 1.4 V @ 25 mA,  $g_m$  0.75 mS (HY, TF) (5-29-53) <6AU>. Also see 1AF4.
- 1AJ5** T2X3 submin. diode-pentode, fil. 1.25 V @ 40 mA,  $g_m$  0.425 mS (TS, W) (8-16-54).
- 1AK4** T2X3 submin. RF pentode, fil. 1.25 V @ 20 mA,  $g_m$  0.75 mS (RA, SY) (8-16-54).

<b>1AK5</b>	T2X3 submin. diode-pentode, fil. 1.25 V @ 20 mA, $g_m$ 0.28 mS, sim. to 5804 (RA, SY) (8-16-54).		
<b>1B1</b>	Ballast tube, 1 V @ 360 mA (NU, SY) (5-21-35).		
<b>1B3GT</b>	HV rectifier, T9 bulb w/ cap on octal base, fil. 1.25 V @ 200 mA; 8016 uprated to 30 kV, later derated to 26 kV, and from 2 mA to 0.5 mA (RCA) {R6158A} (6-28-46). Variant: 6215. History: developed from prewar 8016. Announced in 1946 w/ 1" 8-lead button stem. Had silver type numbers on side until 1947; these were found to contribute to electrolysis of glass; base-brand only thereafter. Changed to 4-lead pressed stem, 1949. Got lead-glass bulb in 1951 to reduce X-rays, new flatter stem shield, and removal of mica spacers and two stem leads. White-banded variant appeared, 1952, using alundum coat to avoid gas from bulb. Red-etched (1955-58) w/ non-metallic ink on hydrogen-fired bulb. 1B3GT/1G3GT is shortened version, derated on PIV, introduced later (3-25-57) <3C>.	<b>1D8GT</b>	36) <7Z>. [AKA VT-148, CV1811]; diode-triode-pentode, fil. 1.4 V @ 100 mA, triode $\mu$ 25, pentode $g_m$ 0.875 mS, 200 mW out (RCA) (6-23-39) <8AW>.
<b>1B4P, T</b>	Sharp-cutoff pentode, 1E5GP char., 2.0 V @ 60 mA, $g_m$ 0.65 mS, repl. 951 (RCA) {A4027} (8-28-35) <4M>. "T" was tetrode version <4K>. See 1A4 re "P" vs. "T."	<b>1DN5</b>	Min. diode-pentode, 1S5 w/ pinout scrambled (GE, RCA, <u>W</u> ) (4-6-57) <6BW>.
<b>1B5/25S</b>	Duodiode-triode, 1H6G char. (RCA) {A483} <6M>.	<b>1E1</b>	Ballast tube, 1.0 V @ 480 mA, supersedes 1P1 (NU, SY) (5-21-35).
<b>1B7GT/G</b>	Pentagrid conv. sim. to 1A7GT, fil. 1.4 V @ 100 mA (7-28-39) <7Z>.	<b>1E2</b>	Ballast tube (9-21-36).
<b>1B8GT</b>	Diode-triode-pentode (9-15-39) <8AW>.	<b>1E3</b>	[AKA DC80]; min. 9-pin UHF power triode, fil. 1.25 V @ 220 mA, $g_m$ 3.5 mS (HY) (10-16-51) <9BG>.
<b>1C1</b>	Ballast tube, 1 V @ 745 mA (SY) (10-26-34).	<b>1E4G</b>	Triode sim. to 1H4G and 1E3, fil. 1.5 V @ 50 mA, $\mu$ 14.5 (SY) (2-10-39) <5S>.
<b>1C3</b>	Min. triode based on 1LE3, "export" type, fil. 1.4 V @ 50 mA, $\mu$ 14.5 (HY, SY) (8-15-49) <5CF>.	<b>1E5G, GP, GT</b>	[AKA VT-170, CV45]; RF pentode, octal 1B4P, ST12 bulb w/ cap, sim. to 1D5GP; repl. 1E5G and 1E5GT (RCA) {A4027} (5-4-36) <5Y>. "GT" is tetrode version <5R>; another non-T9 "GT." See 1A4 re "GP" vs. "GT."
<b>1C4</b>	Pentode, sim. to 1A4P (Aust.) (12-10-35) <4K>.	<b>1E7G</b>	[AKA 38717E]; twin power pentode, ST12 bulb, fil. 2.0 V @ 240 mA, $g_m$ 1.6 mS, 575 mW out (RCA) {A5510} (3-26-36) <8C>.
<b>1C5GT/G</b>	[AKA VT-125, CV1805]; pentode, 100 mA; more output than 1A5 but requires 90 V; sim. to 1Q5GT, 1T5GT (TS) (6-10-38) <6X>.	<b>1E8</b>	T3 submin. conv., fil. 1.25 V @ 40 mA (SY) (12-31-48) <8CN>. Also see 1AC5.
<b>1C6</b>	Pentagrid conv., 1C7G char. (RCA) {A593} (2-5-34) <6L>.	<b>1F1</b>	Ballast tube, 1.0 V @ 720 mA (SY) (7-9-35).
<b>1C7G</b>	Pentagrid conv., octal 1C6 (RCA) {A5507} (5-4-36) <7Z>.	<b>1F4</b>	Power pentode, 5-pin base, 1F5G char. (RCA) {A4029} (2-1-36) <5K>.
<b>1C8</b>	T3 submin. fil. triode-heptode conv. - part of an AM radio complement with 1Q6, 1V5, and 1W5 (SY) (1-25-46) <8CN>.	<b>1F5G</b>	Power pentode, octal 1F4, ST14 bulb, fil. 2.0 V @ 120 mA, $g_m$ 1.7 mS, 300 mW out (RCA) {A4044} (5-4-36) <6X>.
<b>1D1</b>	Ballast tube, 1.0 V @ 240 mA (SY) (10-26-34).	<b>1F6</b>	Duodiode-pentode, ST12 bulb w/ cap, 6-pin base, fil. 2.0 V @ 60 mA, $g_m$ 0.65 mS (RCA) {A518} (4-14-36) <6W>.
<b>1D2</b>	Ballast tube (9-21-36).	<b>1F7G, GH, GV</b>	Duodiode-pentode, octal 1F6 w/ cap. Versions are: "G" (RCA) {A523} (6-12-36) <7AF>; "GH" (TS) (3-18-38); "GV" (RCA) (6-7-37). "GV" has one diode above the other at the (-) end of the fil.
<b>1D3</b>	T3 submin. low- $\mu$ RF triode, fil. 1.25 V @ 30 mA, $\mu$ 8.7 (SY) {SD1066A} (9-21-50) <8DN>.	<b>1G1</b>	Ballast tube, 1.0 V @ 420 mA (SY) (7-9-35).
<b>1D4GT/G</b>	Power pentode, fil. 2.0 V @ 240 mA (Aust.) (12-10-35) <5B>.	<b>1G4GT/G</b>	Low- $\mu$ octal triode, fil. 1.4 V @ 50 mA, $\mu$ 8.8, sim. to 1E4G, 1H4G (1-20-39) <5S>.
<b>1D5G, GP, GT</b>	Remote-cutoff pentode, ST12 bulb w/ cap, octal 1A4P; fil. 2.0 V @ 60 mA, $g_m$ 750 mS, sim. to 1E5G (RCA) {A4042} (5-4-36) <5Y>. "GT" is tetrode version <5R>; see 1A4 re "GP" vs. "GT." In this case, "GT" does not imply a T9 bulb!	<b>1G5G</b>	Power pentode, ST14 bulb, octal base, sim. to 1J5G, fil. 2.0 V @ 120 mA, $g_m$ 1.5 mS, usable with low B+ voltage (SY) (3-9-37) <6X>.
<b>1D7G</b>	Pentagrid conv., octal 1A6 (RCA) {A5508} (5-4-	<b>1G6GT/G</b>	Twin Class B power triode, T9 bulb on octal base, fil. 1.4 V @ 100 mA, $g_m$ 0.675 mS, 675 mW out @ 90 V (1-20-39) 7AB>.
		<b>1H4G</b>	Triode, octal 30, ST12 bulb (RCA) {A2041} (5-4-36) <5S>.
		<b>1H5GT/G</b>	[AKA VT-223, CV104]; diode-triode, fil. 1.4 V @ 50 mA, $\mu$ 65; triode has 1LH4 char. (RCA) (6-10-38) <5Z>.
		<b>1H6G</b>	Duodiode-triode, octal 1B5, fil. 2.0 V @ 60 mA, $\mu$ 20 (RCA) {A4045} (5-4-36) <7AA>.
		<b>1J1</b>	Ballast tube (9-25-35).
		<b>1J5G</b>	Power pentode, octal 950 (3-31-37) <6X>.
		<b>1J6GT/G,</b>	High- $\mu$ power duotriode, octal 19 (RCA) {A4046}

GX	(5-4-36) <7AB>.	1P1	Ballast tube replaceable by 1E1 (3-18-36).
1K1	Ballast tube, 1.0 V @ 550 mA, repl. 5H1, 10A3, LLL25 (SY) (5-4-36).	1P5GT/G	RF remote-cutoff pentode, fil. 1.4 V @ 50 mA, $g_m$ 0.75 mS, eff. same as 1N5 (3-28-39) <5Y>.
1K4	Duodiode-pentode, 1K5G char. (Aust.) (1-20-37).	1Q1	Ballast tube (3-18-36).
1K5G	Duodiode-pentode (Aust.), octal w/ cap (3-22-38). In rcvr. and xmtr. of W. S. No. 101 of 1938.	1Q5GT/G	Power pentode, fil. 1.4 V @ 100 mA, $g_m$ 2.2 mS, 400 mW out, sim. to 1C5GT, 1T5GT, 1A5GT (2-17-39) <6AF>.
1K6	"Aust. type" (9-30-36).	1Q6	T3 submin. diode-pentode, 1.25 V @ 40 mA, $g_m$ 0.6 mS (SY) (1-25-46) <8CO>.
1K7G	Aust. pentagrid conv., octal w/ cap, same use as 1K5G (3-20-38); also in W. S. No. 11 (Aust.).	1R1G	Ballast tube, 1 V @ 540 mA (SY) (5-26-36).
1L4	[AKA DF92]; min. sharp-cutoff RF-IF pentode, for FM rcvrs, based on 1N5, fil. 1.4 V @ 50 mA, $g_m$ 0.93 mS (SY, TF) (5-20-42) <6AR>.	1R4	[AKA 1294, VT-183, CV91]; loktal VHF diode, fil. 1.4 V @ 150 mA, 365 V PIV, 1 mA (SY) (2-1-43) <4AH>.
1L5G	"Aust. type." In xmtr. of Aust. FS6 xcvr. (3-22-38).	1R5	[AKA VT-171, CV782, DK91]; min. pentagrid conv. based on 1A7, fil. 1.4 V @ 50 mA (RCA) (11-13-39) <7AT>; part of the first complement of min. AM radio tubes, with 1S4, 1S5, and 1T4.
1L6	Min. pentagrid conv., fil. 1.4 V @ 50 mA, based on 1LA6. Favored over 1R5 based on SW performance (4-5-49) <7DC>. Variant: 1U6.	1R6	[AKA RTS-98, VC1568]; "min. fil. reactance modulator" (unverified).
1LA4, E	Power pentode, loktal 1A5GT (NU) <5AD>.	1S1G	Ballast tube (6-17-36).
1LA6	Loktal pentagrid conv. sim. to 1A7G, 1C7G, 1LC6 (5-16-39) <7AK>.	1S4	[AKA VT-210, CV181]; min. power pentode based on 1Q5, fil. 1.4 V @ 100 mA, $g_m$ 1.575 mS, 270 mW out (11-13-39) <7AV>. Also see 1R5.
1LB4	Loktal power pentode, fil. 1.4 V @ 50 mA, $g_m$ 0.875 mS (char. of pentode of 1D8), suited to B+ as low as 60 V (9-4-39) <5AD>.	1S5	[AKA VT-172, CV124, DAF91]; min. diode - sharp-cutoff pentode, fil. 1.4 V @ 50 mA, $g_m$ 0.63 mS, sim. to 1LD5, 1LH4, 1U5 (11-13-39) <6AU>. Also see 1R5.
1LB6	Loktal pentagrid converter, fil. 1.4 V @ 50 mA (SY) (1-24-40) <8AX>.	1S6	T3 submin. diode-pentode, fil. 1.25 V @ 40 mA, $g_m$ 0.3-0.6 mS (SY) (1-18-49) <8DA>.
1LC5	Loktal sharp-cutoff RF-IF pentode, suited to B+ as low as 45 V, fil. 1.4 V @ 50 mA, $g_m$ 0.75 mS (5-8-40) <7AO>.	1SA6GT	Octal med.-cutoff RF pentode, fil. 1.4 V @ 50 mA, $g_m$ 0.95 mS (TS) (4-22-41) <6BD>.
1LC6	[AKA VT-178, CV3]; loktal pentagrid conv. sim. to 1LA6, suited to B+ as low as 45 V, fil. 1.4 V @ 50 mA (5-8-40) <7AK>.	1SB6GT	Octal diode-pentode, fil. 1.4 V @ 50 mA, $g_m$ 0.65 mS (SY) (4-22-41) <6BE>.
1LD5	Loktal diode - audio pentode, pentode sim. to 1LN5, suited to B+ as low as 45 V (5-8-40) <6AX>.	1T1G	Ballast tube, 1.0 V @ 560 mA (SY) (5-26-36).
1LE3, Spl	[AKA VT-239, CV46]; loktal med.- $\mu$ triode, fil. 1.4 V @ 50 mA, $\mu$ 14.5 (4-15-40) <4AA>. "Special," used in Army I-107F VTVM, is superseded by 1LF3.	1T4, WA	[AKA VT-173, CV35, DF91]; min. remote-cutoff pentode based on 1P5, sim. to 1LC5, fil. 1.4 V @ 50 mA, $g_m$ 0.8 mS (SY) (11-13-39) <6AR>. Also see 1R5.
1LF3	Loktal triode, 1LE3 w/ low grid-current limits (4-10-48) <4AA>.	1T5GT	Beam power tube, fil. 1.4 V @ 50 mA, $g_m$ 1.1 mS, 170 mW out, sim. to 1A5GT, 1C5GT, 1Q5GT (SY) (5-19-39) <6X>.
1LG5	Loktal remote-cutoff pentode, fil. 1.4 V @ 50 mA, $g_m$ 1.0 mS (SY) (12-20-45) <7AO>.	1T6	T3 submin. diode-pentode, fil. 1.25 V @ 40 mA, $g_m$ 0.6 mS (SY) (12-31-48) <8DA>. Also see 1AC5.
1LG6	Loktal, postwar (SY), otherwise unknown.	1U1	Ballast tube (11-13-36).
1LH4	[AKA VT-177, CV780]; diode-triode, loktal 1H5G (SY) (5-16-39) <5AG>.	1U4, WA	[AKA M16-T-51970, DF904]; min. sharp-cutoff RF-IF pentode based on 1LN5 (or 1N5). Same fil. and pinout as 1L4, different curves, $g_m$ 0.9 mS (TS) {DT153} (8-15-45) <6AR>. Variant: 5910.
1LN5, E	[AKA VT-179, CV781]; loktal sharp-cutoff RF-IF pentode sim. to 1N5, fil. 1.4 V @ 50 mA, $g_m$ 0.8 mS (NU) (5-16-39) <7AO>.	1U5	Min. diode-pentode; 1S5 w/ pinout scrambled (SY) (10-25-45) <6BW>.
1M5G	Aust. type; RF pentode, octal w/ cap, fil. 2.0 V @ 120 mA, used in rcvr. of W. S. No. 11 (Aust.) (3-22-38) <5Y>.	1U6	Min. pentagrid conv., fil. 1.4 V @ 25 mA, like half-current 1L6 (2-8-50) <7DC>.
1N1	Ballast tube (3-18-36).	1V5	T3 submin. pentode, fil. 1.25 V @ 40 mA, $g_m$ 0.75 mS (SY) (1-25-46) <8CP>; see 1C8.
1N5GT/G	[AKA VT-146, CV37]; sharp-cutoff RF-IF pentode, fil. 1.4 V @ 50 mA, $g_m$ 0.75 mS (SY) (6-10-38) <5Y>.	1V6, S	T2X3 submin. triode-pentode osc.-mixer, fil. 1.25
1N6GT	Diode - power pentode, fil. 1.4 V @ 50 mA, $g_m$ 0.8 mS, 100 mW out (SY) (4-12-39) <7AM>.		



- V @ 40 mA, triode section has  $g_m$  0.55 mS; pentode has 0.2 mS. Also see 1C8 (GE, SY, W) (4-23-51). "S" has short leads for socket use.
- 1W1** Ballast tube (1-17-38).
- 1W4** Min. power pentode, based on 1LB4, fil. 1.4 V @ 50 mA,  $g_m$  0.925 mS, 200 mW out (SY, TS) (8-19-49) <9U>.
- 1W5** T3 submin. fil. pentode, fil. 1.25 V @ 40 mA,  $g_m$  0.735 mS (SY) {SD828F} (1-25-46) <8CP>. Also see 1C8.
- 1Y1** Ballast tube, 1.0 V @ 540 mA (SY) (9-11-36).
- 1Y2** HV rectifier, ST14 bulb w/ cap on 4-pin base, fil. 1.25 V @ 265 mA, 50 kV PIV, 2 mA (CH, SY) (9-6-46) <4P>.
- 1Z1** Ballast tube, 1.0 V @ 900 mA (SY) (9-11-36).
- 1Z2** Min. rectifier, w/ cap, fil. 1.25 V @ 265 mA, 20 kV PIV, 2 mA (RCA) {R1045} (8-10-45) (CH, SY, TS) <7CB>.
- 2A3, A, H, W** [AKA 38213, VT-95, CV1831]; power triode, ST-16 bulb, UX base, fil. 2.5 V @ 2.5 A,  $\mu$  4.2, 15 W (RCA, SY, TS) {A181} <4D>. Variants: 6A3, 6A5G, 6B4G, 5930. "A" and "W" are ruggedized. "H" is heater version (AS, NU, RA) (5-6-41).
- 2A4G** Argon triode octal thyratron, ST12 bulb, fil. 2.5 V @ 2.5 A, 200 PIV, 100 mA (CH, HY, TS) (9-27-39) <5S>. Stepping-switch controller in Philco "Mystery Control" receiver; also promoted as grid-controlled rectifier.
- 2A5** [AKA KR25, 38215]; power pentode, heater 2.5 V @ 1.75 A, 11 W (42 char.) (RCA) {A451} <6B>.
- 2A6** Duodiode-triode, 75 & 6B6G char., heater 2.5 V @ 800 mA,  $\mu$  100 (RCA) {A4006} <6G>. Variant: 1659.
- 2A7, S** Pentagrid conv., 2.5-V 6A7 (RCA) {A508} (11-22-34) <7C>. "S" has spray-shield.
- 2B4** Thyratron, heater 2.5 V @ 1.5 A, replaceable by 885 (DuM) (1-2-43) <5A>.
- 2B6** Power amp., direct-coupled duotriode, htr. 2.5 V @ 2.25 A,  $\mu$  18, 4.0 W out (AS, JB) (5-6-41) <7J>.
- 2B7** [AKA 38227]; duodiode-pentode, 2.5-V 6B7 (RCA, TS) {A557} <7D>.
- 2C4** Min. gas triode thyratron, heater 2.5 V @ 600 mA, 350 V PIV, 5 mA (HY) (7-14-43) <5AS>.
- 2E5** Electron-ray tuning ind., 2.5-V 6E5 (4-24-36).
- 2F7** Triode-pentode, 2.5-V 6F7 (KR).
- 2G5** Electron-ray tuning indicator, 2.5-V 6G5 (TS) (4-24-36).
- 2V3G** Diode rectifier, octal w/ cap, for CRT HV, fil. 2.5 V @ 5 A, 16.5 kV PIV, 2 mA (RCA, TS) (1-9-39) <4Y>.
- 2W3, GT** Rectifier, metal, fil. 2.5 V @ 1.5 A, 350 V applied, 55 mA (NU) (5-2-38) <4X>. "GT" has T9 bulb (6-6-39).
- 2X2, A, W** [AKA 143D, 879, VT-119, CV248]; HV rectifier, UX base w/ cap, for CRT HV and radar "keep-alive" supplies, fil. 2.5 V @ 1.75 A, PIV 12.5 kV, 7.5 mA (RCA) (7-6-39) <4AB>. "A" [AKA 2B21] is ruggedized (GE, HY, RCA, SY) {R612G} (8-23-46). "W" is ruggedized further.
- 2Y2** HV rectifier sim. to 2X2, octal, heater 2.5 V @ 1.75 A, 4.4 kV in, 5 mA (NU) (12-5-38) <4P>.
- 2Y3, 2Y4** "Canadian type."
- 2Z2** [AKA G84]; diode rectifier, fil. 2.5 V @ 1.5 A, 350 V applied, 50 mA (Maj., NU) <4B>.
- 3A4** [AKA DL93]; min. power pentode, fil. 2.8 VCT @ 100 mA,  $g_m$  1.9 mS, 2 W (5-9-42) <7BB>. Variant: 1662.
- 3A5** [AKA DCC90]; min. dual HF power triode, fil. 2.8 VCT @ 110 mA,  $\mu$  15, 2 W total (RCA, SY) (5-9-42) <7BC>.
- 3A8GT** [AKA VT-149]; diode-triode-pentode, octal w/ cap, fil. 2.8 VCT @ 50 mA, equals 1H5 + 1N5 (TS) (8-21-39) <8AS>.
- 3B4, WA** [AKA DL98]; min. VHF power tube, fil. 2.5 VCT @ 165 mA,  $g_m$  4.3 mS, 2.7 W (HY) {HD30} (4-30-48) <7CY>. Final amp. in AN/PRC-6.
- 3B5GT** Beam power tube, fil. 2.8 VCT @ 50 mA,  $g_m$  1.5 mS, for 67½-V B+, 200 mW out (TS) (4-22-41) <7AO>.
- 3B7, Spl** [AKA 1291, VT-182, CV228]; loktal UHF power duotriode, fil. 2.8 VCT @ 50 mA,  $\mu$  20, 5.4 W total, repl. 1292 (2-1-43) <7BE>. "Special" is selected. Variants: 1288, 1291.
- 3C4** [AKA DL96]; min. power pentode, fil. 2.8 VCT @ 50 mA,  $g_m$  1.25 mA, replaceable by 3V4 (HY) (10-6-51) <6BX>.
- 3C5GT** Beam power tube, fil. 2.8 VCT @ 50 mA,  $g_m$  1.55 ma, 260 mW out (6-6-39) <7AQ>.
- 3C6** [AKA XXB]; loktal duotriode, fil. 2.8 VCT @ 50 mA,  $\mu$  14.5 (11-30-44) <7BW>.
- 3D6** [AKA 1299, VT-185, CV187]; loktal beam power tube., fil. 2.8 VCT @ 110 mA, 4.5 W, usable to 50 MHz (SY) (2-1-43) <6BA>.
- 3E5** Min. beam power tube, fil. 2.8 VCT @ 25 mA,  $g_m$  1.3 mS, 175 mW out (HY, TS) (2-5-50) <6BX>.
- 3E6** Loktal sharp cut-off pentode, fil. 2.8 VCT @ 50 mA,  $g_m$  2 mS (SY, TS, W) (2-18-46) <7CJ>.
- 3LE4** Loktal beam power tube, fil. 2.8 VCT @ 50 mA,  $g_m$  1.6 mS, 300 mW out (SY) (7-18-40) <6BA>.
- 3LF4** [AKA VT-180, CV187]; loktal beam power tube, loktal 3Q5 (SY) (10-22-41) <6BB>.
- 3Q4** [AKA VT-264, CV182, DL95]; min. power pentode, min. 3Q5 (4-1-41) <7BA>.
- 3Q5GT/G** [AKA VT-221, CV185]; beam power tube, fil. 2.8 VCT @ 50 mA,  $g_m$  2.2 mS, 270 mW out (SY) (6-30-39) <7AP>.
- 3S4** [AKA VT-174, CV183, DL92]; min. power pentode based on 3Q5 - or 1S4 w/ dual fil. - fil. 2.8 VCT @ 50 mA,  $g_m$  1.6 mS, 270 mW out (11-22-40).
- 3V4** [AKA DL94]; power pentode, 3Q4 w/ pinout scrambled (SY) (10-25-45) <7BA>.

- 4A6G** Power duotriode, for Class B use, fil. 4.0 VCT @ 60 mA,  $\mu$  20, 1 W out (NU) (5-2-38) <8L>.
- 5A6** Min. 9-pin xmtg beam power tube, fil. 5.0 VCT @ 230 mA, 5 W, 100 MHz (HY, SY, TS) {DT275} (4-11-49) <9L>.
- 5AR4** [AKA GZ34]; full-wave rectifier, T11 bulb, heater 5.0 V @ 1.9 A, 1.7 kV PIV, 130 mA (SY) (1-16-56) <5L>.
- 5AS4, A** Full-wave rectifier, variant of 5U4GB in ST-16 bulb (GE, SY) (1-3-55). "A" has T12 bulb.
- 5AT4** Full-wave cathode-type rectifier, T16 bulb on octal base, heater 5.0 V @ 5.5 A, 1.55 kV PIV, 800 mA (SY, TS) (2-16-61) <5L>.
- 5AU4** Full-wave rectifier, T12 bulb, fil. 5.0 V @ 3.75 A, 1.4 kV PIV, 200 mA (GE, SY) (4-16-54) <5T>.
- 5AZ4** Full-wave rectifier, loktal 5Y3GT (GE, SY) (11-25-46) <5T>.
- 5R4GY, GYA, GYB** Full-wave rectifier, ST-16 bulb on Micanol octal base, fil. 5.0 V @ 2.0 A, high PIV at high altitude (RCA) {R6175B} (9-10-42) <5T>. PIV is graded: 2.8 kV @ 150 mA, or 2.4 kV @ 175 mA, or 2.1 kV @ 250 mA. "WGY" is ruggedized "GY" w/ conventional base. "GYA" (5-2-55) has T12 bulb, is uprated to 2.8 kV @ 165 mA. "GYB" ((3-16-59) is uprated to 3.1 kV (@ 20,000 ft.). "WGA" is ruggedized w/ T14 hard-glass bulb and skirt base. "WGB" is ruggedized "GYA" w/ hard glass, shock-isolated skirt base, and special processing. Common in 1943-56 military equipment but largely unknown to radio restorers; where the large bulb will fit, makes a long-lived replacement for 5Y3G.
- 5T4** [AKA VT-114, CV276]; full-wave rectifier, 5U4G ratings (RCA) {R6022} (2-4-37) <5T>.
- 5U4G, GA, GB, WG** [AKA VT-244, CV276]; full-wave rectifier, octal 5Z3, fil. 5.0 V @ 3.0 A, 1.55 kV PIV, 225 mA, sim. to Br. VU71 (RCA, TF) (7-27-36) <5T>. "WG" is ruggedized "G." "GA" (4-23-54) has T11 bulb and is uprated to 250 mA; "GB" (4-30-54, only a week after "GA") has T12 bulb w/ button stem and radiating fins on plate; is uprated to 275 mA. Variant: 5931.
- 5V4G, GA, GY** [AKA VT-206A, CV729]; full-wave cathode-type rectifier, octal 83-V, ST14 bulb, heater 5.0 V @ 2.0 A, 1.54 kV PIV, 175 mA (RCA) {R6030} (4-28-36) <5L>. "GA" (4-16-54) has T12 bulb.
- 5W4, GT/G** [AKA VT-97, CV1849]; metal full-wave rectifier, fil. 5.0 V @ 1.5 A, 1.4 kV PIV, 100 mA (RCA) {R6009} (5-1-36) <5T>. "GT/G" (6-13-40) is in T9 bulb.
- 5X3** Full-wave rectifier, fil. 5.0 V @ 2.0 A, 1275 V in, 30 mA, called a "TV" type (AS) (12-15-38) <4C>.
- 5X4G, GA** Full-wave rectifier, 5U4G w/ pinout scrambled, reportedly to prevent substitution of a (lower-rated) 5Y3. Common in (unique to?) '30s Philcos (RCA) {A6031} (5-26-36) <5Q>.
- 5Y3, G, GT/G, WGT, WGTA, WGTB** [AKA VT-197A, CV1268]; full-wave rectifier, octal 80, fil. 5.0 V @ 2.0 A, 1.4 kV PIV, 125 mA (6-2-41) <5T>. "GT/G" is in T9 bulb; "WGT" and "WGTA" are ruggedized; "WGTB" is "WGTA" tested with added parameters. A "5Y3" (6-6-35) may have been intended as a metal version; actual production unknown. Variants: 6004, 6087, 6106, 6853.
- 5Y4GT/G, GA** Full-wave rectifier, 5Y3GT/G w/ pinout scrambled: fil. on pins 7 & 8 (5-26-36) <5Q>. "GA" is in T12 bulb (SY, TS) (6-11-54).
- 5Z3** [AKA VT-145, CV275]; full-wave rectifier, ST16 bulb, 4-pin 5U4G (RCA) {R626} <4C>. Variant: 1275.
- 5Z4, GT/G** [AKA VT-74, CV1864] (RCA) {R6008, ZP-315} (5-7-35) <5L>; full-wave cathode-type rectifier, 5Y3 ratings First member of GE-RCA "original nine" metal-octal line. "GT/G" (9-27-40) is in T9 bulb.
- 6A3, Spl** Power triode, 2A3 w/ fil. 6.3 V @ 1.0 A (5-10-35). "Spl" [AKA FNH] is special 6A3, not further identified.
- 6A4** [AKA LA, KR-5]; fil.-type power pentode for car radios sim. to 52, fil. 6.3 V @ 300 mA,  $g_m$  2.2 mS, 1.4 W out. Introduced by AS as type LA; RCA dev. no. {A468} <5K>.
- 6A5G** Power triode, octal 6B4, cathode connected to center of heater (1-5-37).
- 6A6, X** [AKA 38616]; duotriode, 6-V variant of 53 (6N7 char.) (RCA) {A493} (8-14-34) <6T>.
- 6A7, M, S** Pentagrid conv., ST12 bulb w/ cap, 6-V variant of 2A7, heater 6.3 V @ 300 mA, conversion  $g_m$  0.36-0.55 mS (RCA) {A506} (11-22-34) <7C>. "M" (Rogers) and "S" (Maj.) have spray-shield.
- 6A8, G, GT, GTX** Pentagrid conv., metal 6A7, sim. to 6D8G (GE, RCA) {ZP-310, A5500} (8-15-35) <8A>. "G" [AKA VT-151, CV16] is in ST12 bulb (RCA) {A5505} (6-6-35); regis. actually issued earlier than metal 6A8. "GT" [AKA VT-151B, CV580] is in T9 bulb (3-11-38). "GTX" has ceramic base.
- 6AB4** [AKA EC92]; min. high- $\mu$  RF triode, for G-G amps., heater 6.3 V @ 300 mA,  $\mu$  62 (SY) (4-25-49) <5CE>. Variant: 6664.
- 6AB5** [AKA 6N5]; electron-ray tuning ind., heater 6.3 V @ 150 mA, sim. to 6E5 and 6U5/6G5 (4-19-37).
- 6AB6G** Direct-coupled duotriode, heater 6.3 V @ 500 mA,  $g_m$  1.8 mS, 3.5 W out (SY) (12-28-36) <7AU>.
- 6AB7** [AKA 1853, VT-176, CV66]; "television" pentode; remote-cutoff version of 6AC7, heater 6.3 V @ 450 mA,  $g_m$  5 mS (3-18-39) <8N>. "Y" (3-18-39 has Micanol base.
- 6AB8** [AKA ECL80]; min. 9-pin triode-pentode, heater 6.3 V @ 300 mA, triode  $\mu$  18, pentode  $g_m$  3.4 mS (HY) (2-15-51) <9AT>.
- 6AC5GT/G** High- $\mu$  power triode for direct coupling from

- 6AE5, 6P5, or 37 driver, heater 6.3 V @ 400 mA,  $\mu$  58 (RCA) {A2058} (9-29-37) <6Q>.
- 6AC6G, GT** Direct-coupled duotriode, heater 6.3 V @ 1.3 A,  $\mu$  54,  $g_m$  3.0 mS, 3.6 W out (SY) (1-8-37) <7W>. [AKA 1852, VT-112, REL39, CV660]; sharp-cut-off metal "television" pentode, IF and video amp. for radar and TV; heater 6.3 V @ 450 mA,  $g_m$  9.0 mS (3-18-39) <8N>. Variant: 1617. "A" is early ruggedized version; "W" (RCA) {A4073F} is later. Variants: 6AB7, 6AJ7, 1649, 6134.
- 6AD4** [AKA 5898]; T3 submin. triode, heater 6.3 V @ 150 mA,  $\mu$  70, 330 mW (SY) {SN980D} (8-8-49) <8DK>. Variant: 5719.
- 6AD5G, GT** Triode sim. to 6F5, heater 6.3 V @ 300 mA,  $\mu$  100, called a "TV" type (AS, SY) (12-15-38) <6Q>.
- 6AD6G** Dual electron-ray tuning indicator, to be driven by 6AE6, replaceable by 6AF6G (NU, TS) (5-26-38) <7AG>.
- 6AD7G** Low- $\mu$  triode - power pentode w/ common cathode; heater 6.3 V @ 850 mA, triode  $\mu$  6, pentode equals 6F6G (4-1-40) <8AY>. In (unique to?) Zenith 7S598 and 7S681, 1941. Should directly replace 6F6G by cutting off pins 1 and 6!
- 6AD8** [AKA EBF89, 6DC8]; min. 9-pin duodiode-pentode, heater 6.3 V @ 300 mA,  $g_m$  1.1 mS (HY) (5-28-51) <9HE>.
- 6AE5GT/G** Triode, driver for 6AC5, heater 6.3 V @ 300 mS,  $\mu$  4.2 (TS) (10-18-38) <6Q>.
- 6AE6G** Single-grid twin-plate triode to drive 6AD6; plates have remote- and sharp-cutoff char., heater 6.3 V @ 150 mA,  $\mu$ s 25 and 33 (NU, TS) (6-14-38) <7AH>.
- 6AE7GT** Twin-grid triode; two grids and cathodes, one plate; heater 6.3 V @ 500 mA (RCA) (5-9-40) <7AX>. In (unique to?) Zenith 12S550, 1941.
- 6AE8** Min. 9-pin triode-hexode conv., heater 6.3 V @ 300 mA (HY) (11-21-50) <8DU>.
- 6AF5G** Triode sim. to 6P5GT, heater 6.3 V @ 300 mA,  $\mu$  7.4 (SY) (4-11-39) <6Q>. In (unique to?) Zenith 7S487, 8S432, etc., 1941.
- 6AF6G** Twin electron-ray tuning indicator, like shortened 6AD6G; heater 6.3 V @ 150 mA (RCA, SY) (6-7-38) <7AG>.
- 6AF7G** Twin electron-ray tuning indicator (French), heater 6.3 V @ 200 mA (4-17-39) <8AG>.
- 6AG5, S, WA** Min. VHF pentode, sim. to 6AK5, based on 6SH7, heater 6.3 V @ 300 ma,  $g_m$  5.0 mS (RCA) (9-10-42) <7BD>. Variant: 6186. "S" is selected for high  $g_m$  for TV use (SY).
- 6AG6G** [AKA EL33]; power pentode sim. to scaled-up 6V6G, heater 6.3 V @ 1.25 A,  $g_m$  9 mS, 5 W out (Brimar) (11-10-38) <7AC>.
- 6AG7, W, Y** [AKA VT-247, CV207]; metal power/video pentode, scaled-up 6AC7, heater 6.3 V @ 650 mA,  $g_m$  11 mS, 9.0 W (5-24-39) <8Y>. "W" and "Y" are ruggedized and Micanol-based respectively.
- Variant: 6AK7.
- 6AH5G** Beam power tube, heater 6.3 V @ 900 mA,  $g_m$  5.2 mS, 11 W out (SY) (1-9-42) <6AP>.
- 6AH6** Min. sharp-cutoff RF pentode and gate tube, suppressor wired out for control use, heater 6.3 V @ 450 mA,  $g_m$  9.0 mS (RA) (12-5-46) <7BK>. Variant: 6485.
- 6AH7GT** Duotriode, octal, heater 6.3 V @ 300 mA,  $\mu$  16, 1.5 W (2-5-41) <8BE>. Variant: 12AH7GT.
- 6AJ4** Min. 9-pin UHF triode, for G-G amps., 225 mA,  $\mu$  42, 2 W (GE, HY) {Z2103} (3-5-42) <9BX>.
- 6AJ5** Pentode, 6AK5 optimized for 28-V plate supply,  $g_m$  2.75 mS (SY, WE) (7-5-44) <7BD>. Variant: 7755.
- 6AJ6** Tetrode, heater 6.3 V @ 450 mA; rumored to be quick-heating, possibly beam type, used in WW II lifeboat xmr.; known samples were made for U. S. Navy in 1944.
- 6AJ7** Pentode, 6AC7 w/ ring contact for direct grounding of shell, w/ specified cutoff action via suppressor grid (Can.) (1-25-44) <8N>.
- 6AJ8** [AKA ECH81]; min. 9-pin triode-heptode conv., heater 6.3 V @ 300 mA (HY) (6-27-52) <9CA>.
- 6AK4** T3 UHF submin. triode, 6.3 V @ 0.225 A,  $\mu$  20, 3.3 W (SY) (3-17-52) <8DK>.
- 6AK5, W** [AKA (WE) 403A, (WE) 731A, EF95, M8180, DP61]; min. sharp-cutoff VHF pentode, heater 6.3 V @ 175 mA,  $g_m$  4.3-5.1 mS (WE) (5-27-43) <7BD>. "W" is ruggedized. Variants: 5591, 5654, 5656, 5702, 6028, 6096, 6968.
- 6AK6** Power pentode, min. 6G6G, 2.75 W (RCA) {A4361} (8-27-43) <7BK>.
- 6AK7** Pentode, 6AG7 w/ grounding ring (2-8-44) <8Y>. Also see 6AJ7.
- 6AK8** [AKA EABC80]; min. 9-pin triple diode - triode, one diode on own cath., heater 6.3 V @ 450 mA,  $\mu$  70, replaceable by 6T8 (HY) (6-7-52) <9E>.
- 6AL5, W** [AKA D27, EAA91, EB91]; min. duodiode, heater 6.3 V @ 300 mA (RCA) {R6269} (8-11-44) <6BT>. "W" is ruggedized. Variants: 5704, 5726, 5829, 6058, 6097, 6663, 6887, 7055, 7631.
- 6AL6G** Beam power tube, 6L6G w/ plate cap; sweep amp. in prewar GE TV (RA, SY) (8-21-39) <6AM>.
- 6AL7GT** Twin electron-ray indicator, T9 bulb on octal base, heater 6.3 V @ 150 mA (SY) (6-20-46) <8CH>.
- 6AM5** [AKA EL91]; min. power pentode, heater 6.3 V @ 200 mA,  $g_m$  2.6 mS, 1.4 W out (1-28-49) <7BD>.
- 6AM6** [AKA EF91]; min. power pentode, heater 6.3 V @ 300 mA,  $g_m$  7.5 mS (1-28-49) <7BD>. Variants: 6064, 6516.
- 6AN4** Min. UHF triode, for G-G amps., heater 6.3 V @ 225 mA,  $\mu$  70 (RCA) {R1553D} (5-27-52) <7DK>. Variants: 7738, 1218A/8334.
- 6AN5** [AKA CK612]; pentode, min. 6AG7, for video and computer use - "first" type processed for low in-

- interface resistance (RA) (11-10-48) <7BD>.
- 6AN6** Quadruple diode, common cathode, heater 6.3 V @ 200 mA, 117 v in, 3 mA per plate (HY, SY, T) (8-12-46) <7BJ>.
- 6AN7** Min. 9-pin triode-hexode conv., heater 6.3 V @ 300 mA (HY) (4-29-49) <9Q>.
- 6AN8, A** Min. 9-pin triode-pentode, heater 6.3 V @ 450 mA, triode  $\mu$  19, pentode  $g_m$  7.8 mS (SY) (1-15-54) <9DA>. Variants: 7258, 8489.
- 6AQ4** [AKA EC91]; min. UHF triode, for G-G amps., heater 6.3 V @ 300 mA,  $\mu$  100 (HY) (3-20-53) <7DT>.
- 6AQ5, A, W** [AKA EL90]; min. beam power tube; based on 6V6GT/G derated from 14W to 12 W (RCA) {A4450} (2-14-46) <7BZ>. Variants: 6005, 6094, 6095, 6669, 6928. "A" has controlled warm-up time.
- 6AQ6** [AKA D28]; min. duodiode-triode, 150 mA, based on 6T7G; min. 6SZ7 (RCA) {A4375A} (4-29-44) <6BT>.
- 6AQ7GT** Duo-diode - high- $\mu$  triode; for FM det. use; diodes have own cathode; heater 6.3 V @ 300 mS,  $\mu$  70 (6-20-46) <8CK>.
- 6AQ8** [AKA ECC85]; min. 9-pin duotriode, heater 6.3 V @ 435 mA,  $\mu$  57,  $g_m$  5.7 mS (SY) (8-15-55) <9AJ>.
- 6AR5** Min. power pentode based on 6K6, heater 6.3 V @ 400 mA,  $g_m$  2.4 mS, 3.2 W out (8-8-47) <6CC>.
- 6AR6** Power tetrode, radar-scope sweep amp., T11 bulb, octal base, heater 6.3 V @ 1.2 A, 21 W when forced-air cooled; designed by Bell Labs and made by TS et al. (8-10-45) <6BQ>. Variants: 6098, 6384, 7756.
- 6AR7GT** Duodiode-pentode (Aust.), typically used in reflex IF-AF stages (8-15-49) <7DE>.
- 6AR8** Min. 9-pin beam-deflection tube, sheet-beam balanced modulator, heater 6.3 V @ 300 mA (TS) (4-16-54) <9DP>. Also see 7360, 6JH8, 6ME8.
- 6AR11** Compactron duopentode, dual TV IF amp., heater 6.3 V @ 800 mA,  $g_m$  10.5 mS (SY) (12-4-61) <12DM>.
- 6AS5** Min. beam power tube based on 7A5, heater 6.3 V @ 800 mA (2-16-48) <7CV>.
- 6AS6, W** [AKA (WE) 409A]; min. VHF pentode, w/ suppressor brought out for use as gate electrode in phantastron dividers, etc., heater 6.3 V @ 175 mA,  $g_m$  1.9-3.2 mS (WE) (3-3-47) <7CM>. Variants: 5725, 5784, 5916, 6187, 6486, 7752.
- 6AS7G, GA, GYB** Dual low- $\mu$  power triode originally intended for TV use but usually found as "pass" tube in voltage regulators, heater 6.3 V @ 2.5 A,  $\mu$  2.0, 26 W total (RCA, SV) {A1834 (1-10-46) <8BD>. "GA" is in T12 bulb (RCA) {A4475} (7-11-55). Variants: 5998, 6080, 6082, 6520, 7105.
- 6AS8** Min. 9-pin diode - sharp-cutoff pentode, heater 6.3 V @ 450 mA,  $g_m$  6.2 mS (HY, SY) (2-19-54) <9DS>.
- 6AT6** [AKA EBC90]; min. duodiode-triode based on 6Q7 (SY) (10-25-46) <7BT>. Variant: 6066.
- 6AT8, A** Min. med- $\mu$  triode - sharp-cutoff pentode based on 6X8, for VHF converters (SY) (6-11-54) <9DW>.
- 6AU5GT** Beam tetrode, heater 6.3 V @ 1.25 A, 10 W, special pinout (RCA) (10-21-49) <6CK>.
- 6AU6, A** Min. sharp-cutoff power/video pentode based on 6SH7 (10-25-45) <7BK>. Variants: 6136, 7543, 8425.
- 6AU8, A** Min. 9-pin med- $\mu$  triode - sharp-cutoff video pentode, heater 6.3 V @ 600 mS, triode  $\mu$  40, pentode  $g_m$  8 mS (SY) (11-15-54) <9DX>. Variant: 7060.
- 6AV4** [AKA EZ91]; min. duodiode, heater 6.3 V @ 950 mA, 1250 V PIV, 90 mA; uprated 6X4 (HY) (10-10-52) <5BS>.
- 6AV6** [AKA EBC91]; min. duodiode - high- $\mu$  triode based on 6Q7 (3-8-47) <7BT>.
- 6AW7GT** Duodiode-triode, heater 6.3 V @ 300 mA,  $\mu$  8.0 mS (SY) (11-15-48) <8CQ>.
- 6AW8, A** [AKA 2081]; min. 9-pin triode - video pentode, heater 6.3 V @ 600 mA, triode  $\mu$  70, pentode  $g_m$  9.5 mS (SY) (7-16-54) <9DX>. "A" differs in curve-knee characteristics.
- 6AX5GT** Full-wave rectifier, heater 6.3 V @ 1.2 A, 1250 V PIV, 125 mA (RCA) {R6272A} (1-9-50) <6S>.
- 6AX7** Min. duotriode, 12AX7 w/ heater 6.3 VCT @ 300 mA (SY) (6-11-54) <9A>.
- 6AY11** Compactron duodiode-duotriode, heater 6.3 V @ 690 mA,  $\mu$  100 - equals 12AX7 and two diodes (GE) (6-18-62) <12DA>.
- 6AZ5** T3 submin. duodiode, heater 6.3 V @ 150 mA, 420 V PIV, 8 mA (GE, SY) (4-9-51) <8DF>.
- 6AZ6** T3 submin. duodiode, heater 6.3 V @ 150 mA, 450 V PIV, 20 mA (GE) (5-4-51) <8EH>.
- 6B4G** Power triode, octal 6A3 (TS) (5-26-36) <5S>.
- 6B5** Direct-coupled duotriode, 6N6 char. (TS) (1-29-35) <6D>. Base diagram from 1938 (TS) is labeled "6Db"; shows a built-in cathode resistor on the input triode.
- 6B6, G, M** Direct-coupled power duotriode, 6.3-V 2B6 (JB) <7J>. "G" and "M" involve an apparent duplication of numbers on an entirely different tube: "G" is a duodiode-triode, octal 75, sim. to 6T7G and replaceable by 6Q7G (GE, RCA) (-17-35) <7V>. "M" is Rogers "metal-spray" 6B6G.
- 6B7, S** [AKA 10E/340, VT162 (Br.), VT-68, CV1891]; duodiode-pentode, heater 6.3 V @ 300 mA,  $g_m$  1.3 mS, 2B7 and 6B8 char. (RCA) {A558} <7D>. "S" has spray-shield.
- 6B8, G, GT** [AKA VT-93, CV1894]; duodiode-pentode, metal 6B7 (RCA) {A521} (6-15-36) <8E>. "G" [AKA VT-93A, CV1893, q. v.] has ST12 bulb (7-17-36).

- "GT" has T9 bulb (5-22-40).
- 6BA4** "Rocket" disc-seal low-noise SHF triode, 2E36 format (q. v.), for UHF TV preamp use, heater 6.3 V @ 400 mA (SY) (9-4-53).
- 6BA5** T3 submin. pentode, heater 6.3 V @ 150 mA (SY) (8-8-49). Per SY in 1951, 6BA5 "old" is an RF amplifier,  $g_m$  3.3 mS, with unique pinout; 6BA5 "new" is an AF amplifier,  $g_m$  2.15 mS, w/ different capacitance values and slightly changed pinout <8DY>.
- 6BA6, W** Pentode, min. 6SG7; effectively a remote-cutoff 6AU6; heater 6.3 V @ 300 mA,  $g_m$  4.7 mS (10-25-45) <7BK>. Variants: 5749, 6660.
- 6BA7** Min. pentode conv. based on 6SB7, intended for FM use (SY) (6-9-48) <8CT>.
- 6BC4** Min. 9-pin med- $\mu$  UHF triode, heater 6.3 V @ 225 mA,  $\mu$  48 (HY, SY) (4-9-54) <9DR>.
- 6BC5** Min. pentode, 6AG5 w/ higher  $g_m$  of 6.1 mS (SY) (6-8-49) <7BD>.
- 6BC7** Min. 9-pin triple diode, heater 6.3 V @ 450 mA (HY, SY) (2-14-50) <9AX>.
- 6BD6** Min. remote-cutoff RF pentode, min. 6K7 (SY) (5-15-46) <7BK>.
- 6BD7, A** [AKA EBC81]; min. 9-pin duodiode-triode, heater 6.3 V @ 230 mA,  $\mu$  70 (3-15-50) <9Z>.
- 6BE6** Min. pentagrid conv., min. 6SA7 (SY) (10-25-45) <7CH>. Variants: 5750, 5915, 7036.
- 6BE7** [AKA EQ80]; min. 9-pin heptode conv., heater 6.3 V @ 200 mA (HY) (3-15-50) <9AA>.
- 6BF5** Min. power pentode, heater 6.3 V @ 1.2 A, 5.5 W (SY) (2-14-50) <7BZ>.
- 6BF6** Min. duodiode-triode, min. 6SR7 (RCA, SY) {A4442} (6-28-46) <7BT>.
- 6BF7, A, W** T3 submin. flat-press VHF med- $\mu$  power duotriode; heater 6.3 V @ 300 mA, individual cathode leads;  $\mu$  35,  $g_m$  4.8 mS, 2.0 W total (SY) (4-3-50) <8DG>. "W" is ruggedized." Variant: 6021.
- 6BG7** T3 submin. med- $\mu$  duotriode, heater 6.3 V @ 300 mA,  $\mu$  35 (GE) (4-3-50) <8DG>.
- 6BH5** [AKA EF81]; min. 9-pin variable- $\mu$  remote-cutoff pentode (5-28-51) <9AZ>.
- 6BH6** Min. sharp-cutoff RF-IF pentode, heater 6.3 V @ 150 mA (RCA) {A4524A} (11-15-47) <7CM>. Variants: 6065, 6265, 6661, 7693.
- 6BJ5** Min. power pentode, heater 6.3 V @ 640 mA,  $g_m$  10.5 mS, 9.9 W (HY, SY) (11-21-50) <6CH>.
- 6BJ6, A** Min. pentode, heater 6.3 V @ 150 mA, based on 6SS7 (SY) (12-10-46) <7CM>. Variants: 6662, 7694.
- 6BJ7** Min. 9-pin triple-diode, heater 6.3 V @ 450 mA, 330 V PIV, 1.0 mA (HY, SY) (2-5-54) <9AX>.
- 6BK6** Min. duodiode-triode, heater 6.3 V @ 300 mA,  $\mu$  100 (TS) (1-17-50) <7BT>.
- 6BK7, A, B** Min. VHF duotriode based on 12AV7, heater 6.3 V @ 450 mA,  $\mu$  43 (SY) (8-10-51) <9AJ>.
- 6BL6** Reflex klystron, 1.4-6.5 GHz, EC, heater 6.3 V @ 750 mA, 325 V, 250 mW out (RA, SY) (SD-835H) (10-5-46). Variants: 6BM6, 5836, 5837.
- 6BL8** [AKA ECF80]; min. triode-pentode, heater 6.3 V @ 450 mA, triode  $\mu$  20, pentode  $g_m$  6.2 mS (RCA, SY) (9-4-56) <9DC>. Variant: 7643.
- 6BM5** [AKA 6P9]; min. power pentode, heater 6.3 V @ 450 mA,  $g_m$  7.0 mS, 3.5 W out (HY) (6-30-52) <7BZ>.
- 6BM6, A** Reflex klystron, 0.55-3.8 GHz, EC, 3-pin min. base, swaged rings to match cavity, heater 6.3 V @ 650 mA, 325 V, 175 mW CW out (BX, LI, RA, SFR, SY) (SD835K) (10-4-48). Variant: 5837.
- 6BM8** [AKA ECL82]; min. 9-pin triode-pentode, heater 6.3 V @ 780 mA, triode  $\mu$  70, pentode  $g_m$  6.4 mS, 3.5 W out (GE, SV, SY) <9EX>.
- 6BN6** Min. gated-beam FM detector, heater 6.3 V @ 300 mA (SY) (9-26-49) <7DF>.
- 6BQ5** [AKA EL84]; min. 9-pin audio non-beam power pentode, heater 6.3 V @ 760 mA,  $g_m$  11.3 mS, 12 W (SY) (7-9-56) <9CV>. Variants: 7189, 7320.
- 6BQ7, A** Min. VHF duotriode, 6 V @ 400 mA,  $\mu$  38,  $g_m$  6.4 mS, interchanges with 6BZ7 and 6DJ8 (SY) (8-11-50) <9AJ>. Variant: 7062.
- 6BR7** Min. sharp-cutoff RF pentode based on 6J7, heater 6.3 V @ 150 mA,  $g_m$  0.9 mS (HY) (10-25-51) <9BC>. Variant: 6059.
- 6BS5** Min. 9-pin beam pentode, heater 6.3 V @ 750 mA,  $g_m$  7.0 mS, 4.5 W out (HY) (10-30-53).
- 6BT6** Min. duo-diode - high- $\mu$  triode, heater 6.3 V @ 300 mA,  $\mu$  70 (SY) (1-17-50) <7BT>.
- 6BU6** Min. duo-diode - low- $\mu$  triode, heater 6.3 V @ 300 mA,  $\mu$  16.5 (HY) (1-17-50) <7BT>.
- 6BV7** Min. 9-pin duodiode - power pentode, heater 6.3 V @ 800 mA,  $g_m$  8.0 mS, 2.0 W out (HY) (8-27-51) <9BU>.
- 6BW4** Min. 9-pin full-wave rectifier, heater 6.3 V @ 900 mA, 900 V in, 100 mA (HY, SY) (7-11-55) <9DJ>.
- 6BW6** Min. 9-pin beam power tube based on 6V6, beam plates wired out separately, heater 6.3 V @ 450 mA, 12 W (GE) (4-17-50) <9AM>. Variant: 6061.
- 6BW7** Min. 9-pin sharp-cutoff RF pentode, heater 6.3 V @ 150 mA,  $g_m$  9.0 mS (HY) (7-10-53).
- 6BX4** Min. full-wave rectifier, heater 600 mA, 1350 V PIV, 90 mA out (HY) (10-30-53) <5BS>.
- 6BX6** [AKA EF80]; min. 9-pin sharp-cutoff RF pentode, heater 6.3 V @ 300 mA,  $g_m$  7.2 mS, 2.75 W (HY, SY) (2-15-51) <9AQ>.
- 6BY4** Cermet UHF triode, 5/16" dia. by 3/8" high, for UHF TV preamps, heater 6.3 V @ 200 mA,  $\mu$  100,  $g_m$  6 mS, NF 8 dB @ 900 MHz (GE) (10-17-55).
- 6BZ7** Min. 9-pin VHF med- $\mu$  duotriode, 6 V @ 400 mA, based on 6BQ7,  $\mu$  36; interchanges with 6BQ7A (SY) (8-22-52) <9AJ>. Variant: 7057.

- 6C4, w** Min. VHF med.- $\mu$  power triode based on 6J5, heater 6.3 V @ 150 mA,  $\mu$  17, 3.5 W (originally 5 W) (RCA, SY) (5-9-42) <6BG>. Variants: 6100, 6135.
- 6C5, G, GT/G** [AKA VT-65, CV582]; metal triode; contains a set of 6J7 pentode elements internally triode-connected (!); heater 6.3 V @ 300 mA,  $\mu$  20 (RCA) {A2021} (8-15-35) <6Q>. "G" [AKA VT-65A, Br. CV581, NR78] is in ST12 bulb (RCA) {A2040} (6-6-35). "GT/G" is in T9 bulb.
- 6C6** [AKA 38636, 10E/337, VT161 (Br.)]; pentode, ST12 bulb w/ cap on 6-pin base, 6J7 char. (RCA) {A478A} <6F>. Variant: 1221.
- 6C7** Duodiode-triode, spray-shielded 85A, sim. to 6R7 (Maj., NU, RCA, TS) <7G>.
- 6C8G** [AKA VT-163, CV1896]; duotriode, ST12 bulb w/ cap, heater 6.3 V @ 300 mA,  $\mu$  36 (1-21-37) <8G>.
- 6C10** Compactron triple-triode, heater 6.3 V @ 400 mA, equals 1- $\frac{1}{2}$  12AX7s (GE, SY) (8-1-60) <12BQ>. Variant: 7689.
- 6CA4** [AKA EZ81]; min. 9-pin full-wave rectifier, heater 6.3 V @ 1.0 A, 1 kV PIV, 150 mA (SY) (8-27-56) <9M>.
- 6CA7** [AKA EL34]; octal power pentode (SY: "beam pentode"), tubular bulb, heater 6.3 V @ 1.5 A,  $g_m$  11 mS (MU, SV, SY) (12-12-52) <8ET>.
- 6CB6, A** Min. pentode, for TV IF amps., heater 6.3 V @ 300 mA,  $g_m$  6.2 mS (SY) (10-21-49) <7CM>. "A" has  $g_m$  raised to 8 mS. Variants: 6676, 7056, 7732.
- 6CG6** Min. remote-cutoff pentode, heater 6.3 V @ 300 mA,  $g_m$  2.0 mS (HY) (10-10-50) <7BK>.
- 6CH6** [AKA EL821]; min. 9-pin RF/video pentode, heater 6.3 V @ 750 mA,  $g_m$  11.0 mS (HY) (4-18-51) <9BA>. Variants: 6132, 7499.
- 6CJ6** [AKA EL81]; min. 9-pin pentode, audio or horiz. sweep, heater 6.3 V @ 1.05 A,  $g_m$  4.6 mS (HY) (10-16-51) <9AS>.
- 6CK6** [AKA EL83]; min. 9-pin RF/video pentode, heater 6.3 V @ 710 mA,  $g_m$  10.0 mS (HY) (10-16-51) <9AR>.
- 6CL6** Min. 9-pin RF/video pentode, heater 6.3 V @ 650 mA,  $g_m$  11 mS, 7.5 W (RCA, SY) (6-18-52) <9BV>. Variants: 6197, 6297, 6677.
- 6CM6** Beam power tube, min. 9-pin 6V6GT (GE) (10-9-53) <9CK>.
- 6CQ6** [AKA EF92]; min. variable- $\mu$  pentode, heater 6.3 V @ 200 mA,  $g_m$  2.5 mS (HY) (3-20-53) <7DR>.
- 6CW4** Nuovistor high- $\mu$  VHF triode, for G-G amps., heater 6.3 V @ 130 mA,  $\mu$  62,  $g_m$  9.8 mS, 1.5 W (RCA) (7-4-60) <12AQ>. Gave NF of 5.5 dB at Ch. 13 in RCA KRK-90A TV tuner, or about 1 dB better than the 6GK5, 1961's best conventional tube. Variants: 2CW4, 6DS4, 13CW4.
- 6CW5** Min. 9-pin power pentode, heater 6.3 V @ 760 mA, 12 W (GE, SY) (7-9-56) <9CV>.
- 6CY5** Min. sharp-cutoff RF tetrode, heater 6.3 V @ 200 mA,  $g_m$  8 mS (SY) (9-10-56) <7EW>. Variants: 7167, 7717.
- 6CZ5** Min. beam power tube, heater 6.3 V @ 450 mA, 11 W (SY) (11-5-56) <9HN>. Variant: 6973.
- 6D4** [AKA VC17]; min. argon triode thyratron, heater 6.3 V @ 250 mA, 320 V PIV, 25 mA, usable for usual thyratron functions but best known as an RF noise generator; w/ tube diode-connected and mounted inside a magnet, noise spectrum peaks at 500 kHz and is still strong at 1 MHz (HY, SY, TS) (3-10-44) <5AY>.
- 6D5, G** Metal power triode, announced 1935 by RCA and SY, but not made in qty.; heater 6.3 V @ 700 mA,  $\mu$  4.7 (NU) (5-6-41). "G" is glass variant (6-6-35); neither is used in any known radio.
- 6D6** [AKA 38646, VT-69, (Br.) VT160, CV1900]; pentode, heater 6.3 V @ 300 mA,  $g_m$  1.6 mS (58 and 6U7 char.) (RCA) {A479A} <6F>.
- 6D7** Pentode, spray-shielded 6C6 on 7-pin base (Maj., NU) <7H>.
- 6D8G** [AKA VR57 (Br.)]; pentagrid conv., 150-mA version of 6A8G (RCA) {A5517} <8A>. "G" is in ST12 bulb.
- 6DB6** Min. sharp-cutoff RF pentode, heater 6.3 V @ 300 mA,  $g_m$  2.1 mS (HY, SY) (2-26-54) <7CM>.
- 6DC6** Min. semi-remote-cutoff RF-IF pentode, heater 6.3 V @ 300 mA,  $g_m$  5.5 mS (SY) (3-12-54) <7CM>, intended for TV IFs but used more in comm. gear. Hard to find today; "hotter" substitutes include 6BZ6, 6CB6, 6CF6, 6DE6; lower- $g_m$  substitutes include 6BH6, 6BJ6, 6JF6.
- 6DG6GT** [AKA 6W6GT, q. v.]; beam power tube (4-25-55).
- 6DJ8** [AKA ECC88]; min. 9-pin VHF duotriode, designed for TV tuners but better known as audio preamp, heater 6.3 V @ 365 mA,  $\mu$  33,  $g_m$  12.5 mS (SY) (5-12-58) <9AJ>. Very sim. to 6BQ7A despite difference in  $g_m$ , and officially replaceable by it in Tektronix 502 and 545 scopes. Variants: 6922, 7308.
- 6DL4** Min. high- $\mu$  triode, heater 6.3 V @ 165 mA,  $\mu$  65, 2.0 W (GE) (1-17-66) <9NY>. Variant: 8255.
- 6DS4** Nuovistor vari- $\mu$  triode, variant of 6CW4 w/ extended cutoff, for G-G amps., heater 6.3 V @ 135 mA,  $\mu$  63,  $g_m$  9.0 mS (GE, RCA) (8-21-61) <12AQ>. Variant: 2DS4.
- 6DV4** Nuovistor med.- $\mu$  triode, UHF osc., gold-plated shell and pins for stability, heater 6.3 V @ 135 mA,  $\mu$  35, 1 W, usable to 950 MHz (GE, RCA) {A15239G} (9-10-62) <12EA>. Variant: 2DV4.
- 6E5** [AKA VT-215, 38665E, CV239]; electron-ray tuning ind. (sim. to 6AB5/6N5), T9 bulb, 6-pin base, heater 6.3 V @ 300 mA (RCA) {CA4} 6-27-35) <6R>. Variants: 2E5, 1629.
- 6E6** Dual power triode, heater 6.3 V @ 600 mA,  $g_m$

- 1.6 mS, 1.6 W out (NU) (2-15-35) <7B>.
- 6E7** Pentode, spray-shielded 6D6 on 7-pin base (Maj., NU, T) <7H>.
- 6E8**, G, MG Triode-hexode conv. (French), octal w/ cap, heater 6.3 V @ 300 mA (6-2-39) <8K>.
- 6EU7** Min. duotriode, 12AX7 w/ nontapped heater of 6.3 V @ 300 mA, wired to pins 1 and 2 to reduce hum; claimed to be quieter than 12AX7, but has same published hum level as 12AX7A (GE, RCA, SY) (3-10-60) <9LS>.
- 6EW7** Duotriode, "9-T9" bulb, for TV vert. osc. and output - in first group of 9-T9 types along with 6HC8 (SY) (3-7-60) <9HF>.
- 6F4** Acorn UHF osc. triode, heater 6.3 V @ 225 mA,  $\mu$  17, 2 W, usable to 1.2 GHz, dual pins for grid and plate (RCA) {A2227} (8-11-44) <7BR>.
- 6F5**, G, GT, M Metal triode, 7B4 char.,  $\mu$  100 (RCA) {A2015} (5-28-35) <5M>. "G" (6-6-35) and "GT" {A2039} (4-11-38) are in ST12 and T9 bulbs respectively. "M" is Rogers "metal-spray" version.
- 6F6**, G, GT [AKA VT-66, CV1186]; metal power pentode, 42 char., heater 6.3 V @ 700 mA, 11 W (GE, RCA) {A-4016, ZP-308} (5-28-35) <7S>. Variants: 1611, 1613, 1621. "G" [AKA 10E/346, KT63, NR85, ARP17, W1535, VT-66A, CV1911] is in ST14 bulb (RCA) {A4035} (6-6-35). "GT" is in T9 bulb (1-2-40).
- 6F7**, M, S [AKA 38667, VT-70, CV1915]; triode-pentode, heater 6.3 V @ 300 mA (RCA) {A560} <7E>. "M" (Rogers) and "S" are spray-shielded.
- 6F8G** [AKA VT-99, 38768F, CV1917]; duotriode, ST12 bulb w/ cap, equals two 6J5s (6SN7GT and 7N7 char.) (RCA) (9-24-37) <8G>.
- 6FV8**, A Min. 9-pin triode-pentode, heater 6.3 V @ 450 mA, triode  $\mu$  40, pentode  $g_m$  6.5 mS (SY) (2-16-59) <9FA>. Variant: 8446.
- 6FW7** T3 submin. VHF duotriode, heater 6.3 V @ 300 mA,  $\mu$  36, 1.7 W (SY) (10-22-62) <8LM>. Variant: 3FW7.
- 6FW8** Min. 9-pin VHF duotriode, heater 6.3 V @ 400 mA,  $\mu$  33 (RCA) (6-22-59) <9AJ>. Variant: 7803.
- 6FX7** T3 submin. VHF duotriode, heater 6.3 V @ 300 mA,  $\mu$  36, 1.7 W (SY) (7-9-62) <8LK>. Variant: 3FX7.
- 6G5** [AKA 6U5]; electron-ray tuning indicator, remote-cutoff 6E5 (RCA) {CA4A} (2-21-36) <6RA>.
- 6G6G** [AKA VT-198A, CV1926]; power pentode, heater 6.3 V @ 150 mA,  $g_m$  2.3 mS, 2.75 W (SY) (11-29-37) <7AC>. Derivative: 6AK6.
- 6G7** [AKA 89R]; duodiode rectifier - pentode (Can.) sim. to 6B7.
- 6G8G** Duodiode-pentode (Aust.) <8E>. In reflex IF-AF stage in AWA Radiola 517-M.
- 6GE8** Min. 9-pin triode-pentode, heater 6.3 V @ 900 mA, triode  $\mu$  5.4, pentode  $g_m$  3.2 mS (SY) (10-5-59) <9LC>. Variant: 7734.
- 6GM5** Beam power tube, 7591 in 9-T9 bulb (SY) (3-13-61) <9MQ>. (Compactron equiv.: 7868.)
- 6II4GT** Single octal diode, heater 6.3 V @ 150 mA (TS) (5-11-39) <5AF>.
- 6II5** [AKA 6G5]; electron-ray tuning ind., ring display, replaceable by 6U5/6G5 (RA) (10-24-36) <6R>.
- 6IH6**, G, GT, WGT [AKA VT-90, CV1301, 38566H]; metal duodiode, heater 6.3 V @ 300 mA, 420 V PIV, 16 mA total (RCA) {A6016, ZP-314} (8-15-35) <7Q>. "G" (6-6-35) is in ST12 bulb. "GT" [AKA VT-90A, CV1931, q. v.] is in T9 bulb (4-11-38). "WGT" is ruggedized "GT".
- 6II7**, M, S High- $\mu$  triode - power pentode (Can.). "M" and "S" (8-21-34) are spray-shielded.
- 6II8G** Duodiode-pentode, octal w/ cap (French), heater 6.3 V @ 300 mA,  $g_m$  2.4 mS (6-27-39) <8E>.
- 6J4**, WA Min. UHF triode, for G-G amps., heater 6.3 V @ 400 mA,  $\mu$  55,  $g_m$  12 mS (RCA, SY) {A2209A} (3-6-44) <7BQ>. Variants: 7137, 7245, 8532.
- 6J5**, Sel., G, G Sel., GX, GT, GTX, M, WGT [AKA 38565J, VT-94, CV1067]; med.- $\mu$  metal triode, heater 6.3 V @ 300 mA,  $\mu$  20 (RCA) (6-24-37) <6Q>. "Selected" is AKA VT-94B. "G" [AKA VT-94A, 38765J; Br. NR78A, VR67, L63, CV1932] is in ST12 bulb (RCA) {A2042} (5-26-36). "G Selected" is AKA VT-94C. "GX" and "GTX" have ceramic bases ((HY, SY). "GT" [AKA VT-94D, CV1934] is in T9 bulb (4-11-38). "WGT" is ruggedized "GT." "M" is Rogers "metal-spray" version.
- 6J6**, A, W Min. UHF med.- $\mu$  duotriode, heater 6.3 V @ 450 mA,  $\mu$  38, 3 W total, common cathode (RCA) {A4434} (9-10-42) <7BF>. Variants: 5844, 5920, 5964, 6030, 6045, 6099, 6101, 6211, 6535, 6927, 7244.
- 6J7**, G, GT, GTX, MG [AKA VT-91; (Br.) VR56, CV1074, 10E/11402, EF36, NR49]; sharp-cutoff pentode, metal 6C6 (RCA) {A4014} (8-15-35). Variants: 1620, 6059, 7000. "G" is in ST12 bulb; has internal shield cage on Pin 1; is sim. to Br. NR83 (RCA) {A4040} (6-6-35) <7R>. "GT" [AKA VT-91A, CV1937] is in T9 bulb (4-11-38). "GTX" is "GT" w/ ceramic base (HY). "M" is Rogers "metal-spray" version.
- 6J8G**, EG, M Triode-heptode conv., sim. to 7J7 (KR, SY, TS) (2-21-38) <8H>. "M" is Rogers "metal-spray" version.
- 6JII8** Min. 9-pin beam-deflection tube, sheet-beam balanced modulator, heater 6.3 V @ 300 mA (GE) (7-10-61) <9DP>. Also see 7360, 6AR8, 6ME8.
- 6K4** T3 submin. triode, heater 6.3 V @ 150 mA,  $\mu$  20, 2.25 W, oscillates to 1.5 GHz; effectively a submin. 6J5 {SD834} (GE, SY) (11-23-45). Variants: 5703, 5897, 5977, 5892, 6778.
- 6K5**, G, GT Octal triode equiv. to triode section of 6Q7 (TS) (5-26-36) <5U>.

- 6K6G, GT** [AKA VT-152A, CV1938]; power pentode, octal 41, 7B5 char. (RCA) {A4047} (5-26-36) <7S>. "GT" [AKA VT-152, CV207] has T9 bulb (4-11-38).
- 6K7, G, GT, GTX, M** [AKA VT-86, 38567K; Br. CV1942, ARP34, EF39, VR53]; remote-cutoff pentode, metal 78, heater 6.3 V @ 300 mA,  $g_m$  1.7 mS (RCA) {A4015} (8-15-35) <7R>. "G" [AKA VT-86A, Br. NR81, CV1941] has ST12 bulb (RCA) {A4036} (6-6-35). "GT" [AKA VT-86B, CV1943] has T9 bulb (4-11-38). "GTX" is "GT" w/ ceramic base (HY). "M" is Rogers "metal-spray" version. Variant: 5732.
- 6K8, G, GT, GTX** [AKA VT-167, 38568K, CV18]; metal triode-hexode conv., heater 6.3 v @ 300 mA (RCA) (1-31-38) <8K>. "G" [AKA VT-167A, CV1944] has ST12 bulb (6-15-38). "GT" has T9 bulb (3-31-39). "GTX" is "GT" w/ ceramic base.
- 6L4** Acorn triode, sim. to 6F4 but derated to 1.7 W, slightly lower capacitances, rated at higher voltage (RCA) {A2297} (5-23-49) <7BR>.
- 6L5G** [AKA VT-213A, CV151]; triode, 6C5G w/ 150-mA heater (RCA) {A2045} (6-12-36) <6Q>.
- 6L6, A, G, GA, W, Y, WGA, GAY, GB, GC** [AKA VT-115, CV208]; metal beam power tube, heater 6.3 V @ 900 mA, 19 W (RCA) {A494} (3-24-36) <7S>. Preceded, and electrically related to, 807. Grandfather of all beam power tubes. Introduced 1936 with eyeletted base seal. Variants of 6L6: 1614, 1619, 1622, 1631, 1632, 7581. "A" and "W" are first and final ruggedized versions. "Y" has Micanol base. "G" [AKA VT-115A, CV1947] has ST-16 bulb; sim. to Br. NR77 (RCA) {A4048} (6-8-36). Variants of "G": 6AL6G, 6BG6G, T21, 1223. "GA" has ST-14 bulb, still rated at 19 W (SY) (3-16-43). Variants of 6L6GA: 1222, 5932. "WGA" is ruggedized "GA." "GAY" is "GA" w/ Micanol base. "GX" has ceramic base (HY, SY). "GB" [AKA 5881] has T12 bulb (4-16-54). "GC" is "GB" uprated to 30 W by use of button stem and 11-mil. plate material in place of 7-mil. (RCA) (12-1-58). Variants of "GC": 7027A, 7581.
- 6L7, G** [AKA VT-87, CV1951]; metal pentagrid mixer-amp., two control grids, for separate osc. or for use in volume expanders, etc. (RCA) {A599} (4-29-35) <7T>. Variant: 1612. "G" [AKA VT-87A, CV1951] has ST12 bulb (RCA) {A5506} (6-6-35).
- 6M5** Min. 9-pin power pentode, heater 6.3 V @ 710 mA,  $g_m$  10.0 mS, 3.9 W out (HY) (4-29-49) <9N>.
- 6M6G** Power pentode (French) sim. to EL11, heater 6.3 V @ 1.2 A (12-5-38) <7AC>.
- 6M7G** Triple-grid amp. (French), heater 6.3 V @ 300 mA,  $g_m$  3.4 mS (1-8-40) <7R>.
- 6M8G, GT** Diode-triode-pentode, heater 6.3 V @ 600 mA,  $\mu$  100,  $g_m$  1.9 mS (8-1-39) <8AU>.
- 6ME8** Min. 9-pin beam-deflection tube, sheet-beam balanced modulator, heater 6.3 V @ 300 mA (GE) (7-10-61) <9RV>. Also see 7360, 6AR8, 6JH8.
- 6MJ8** Compactron triple-triode, heater 6.3 V @ 900 mA,  $\mu$  17; equals 1-1/2 12AU7s (GE) (6-5-67) <12HG>. Also see 7688.
- 6N4** [AKA CK611]; min. UHF triode, heater 200 mA,  $\mu$  32, 3 W; char. sim. to 2C35 (HY, RA, TS) (9-25-45) <7CA>.
- 6N5** [AKA 6AB5, q. v.]; electron-ray tuning ind. (RCA, TS) {CA13} <6R>.
- 6N6, GT/G, MG** Direct-coupled duotriode, metal 6B5, sim. to 6AB6G, heater 6.3 V @ 800 mA. Triad successor to Speed 293 "Triple Twin" (7-9-36) <7AU>. Makers licensed to make 6N6 were AS, HY, KR, NU, RA, SY, STC, and Triad. "GT" (9-27-40) has T9 bulb.
- 6N7, Sel, G, GT/G** [AKA VT-96, CV1957]; power duotriode, metal 6A6, 53 char. (RCA) {A4017} (3-21-36) <8B>. "Selected" is AKA VT-96B. "G" (octal 6A6) has ST16 bulb.; is sim. to Br. NR73 (RCA) {A4039}. "GT/G" has T9 bulb (9-27-40).
- 6N8** [AKA EBF80]; min. 9-pin duodiode-pentode, heater 6.3 V @ 300 mA,  $g_m$  2.2 mS (HY) (8-19-49) <9HE>.
- 6P5GT/G** Triode, T9 bulb, <sup>1038</sup> octal 76 (TS) (4-11-36) <6Q>.
- 6P6** Aust. power pentode, heater 6.3 V @ 700 mA (3-25-36) <6AC>.
- 6P7G** Triode-pentode, octal 6F7 (6-6-35) <7U>.
- 6P8G** Triode-hexode conv. (Br.), heater 6.3 V @ 800 mA (11-10-38) <8K>.
- 6Q4** [AKA EC80]; min. 9-pin triode, usable to 500 MHz, heater 6.3 V @ 450 mA, 4 W,  $g_m$  12 mS (AX, HY, RCA) {A2298, A2304} (7-15-49) <9S>. RCA: "export" type replaceable by 6BC4.
- 6Q5G** [AKA 884]; thyratron for scope-sweep generation (DuM) (1-2-43) <6Q>.
- 6Q6G** Diode-triode, 6Q7G w/ 150-mA heater; nearest equiv. is 6T7G (6-12-36) <6Y>.
- 6Q7, G, GT** [AKA VT-92, CV588]; duodiode - high- $\mu$  triode, metal 75,  $\mu$  70 (RCA) {A4018} (12-9-35) <7V>. Variant: 6118. "G" [AKA VT-92A; Br. NR68, DH63, CV589] has ST12 bulb, can replace 6B6G (RCA) {A4038}. "GT" has T9 bulb (4-11-38).
- 6Q8** Foreign equiv. of 6A8 <8A>.
- 6R4** [AKA EC81]; min. 9-pin triode, oscillates to 1.2 GHz, heater 6.3 V @ 240 mA,  $\mu$  16, 5 W (AX, HY) (7-15-49).
- 6R6G** Octal pentode, heater 6.3 V @ 300 mA,  $g_m$  1.45 mS, called a "TV" type (AS) (12-15-38) <6AW>.
- 6R7, G, GT, M** [AKA VT-88, 38567R; Br. VR55, 10E/11401, AR-21, EBC33, NR48, 1639, CV1963]; duodiode - med.- $\mu$  triode, metal 85,  $\mu$  16; 7E6 and 12BD6 char. (RCA) {A4022} (1-21-36) <7V>. "G" [AKA VT-88A, CV1962] has ST12 bulb (RCA) {A4041} (5-26-36). "GT" [AKA VT-88B,



- CV1964] has T9 bulb (6-6-39). "M" is Rogers "metal-spray" version.
- 6R8** Min. 9-pin triple-diode - triode, one diode has own cathode; heater 450 mA,  $\mu$  16 (HY, TS) (10-14-49) <9E>.
- 6S5** Electron-ray tuning ind. (Can.) (4-1-37) <6R>.
- 6S6GT** Power pentode, heater 6.3 V @ 450 mA,  $g_m$  4.0 mS (1-12-40) <5AK>.
- 6S7, G** Remote-cutoff pentode, metal 6D6 w/ 150-mA heater (TS) (2-23-38) <7R>. "G" (6K7G w/ 150-mA heater) has ST12 bulb (RCA) {A4064} (6-12-36).
- 6S8GT** Triple-diode - 6SQ7 plus independent diode w/ its own cathode,  $\mu$  100 (TS) (9-28-45) <8CB>.
- 6SA7, Y, GT, GTX, GTY, WGT** [AKA VT-150, CV1966]; metal pentagrid conv. (RCA) (11-18-38) <8R>. "Y" has Micanol base. "GT" [AKA VT-150A, CV1967] has T9 bulb (3-17-39) <8AD>. "GTX" and "GTY" are "GT" w/ ceramic and Micanol bases. "WGT" is ruggedized "GT."
- 6SB7Y** Metal pentagrid conv. w/ Micanol base, intended for FM use; has higher current ratings than 6SA7; heater 6.3 V @ 300 mA, high conversion  $g_m$  of 0.88 mS (RCA) {A5581A} (1-10-46) <8R>.
- 6SC7, GT, GTY** [AKA VT-105, CV1969]; metal high- $\mu$  duotriode, heater 6.3 V @ 300 mA,  $\mu$  70,  $g_m$  1.3 mS (RCA, TS) (11-18-38) <8S>. Metal version of 6SL7GT w/ grid leads pinned-out away from heater. Variant: 1655. "GT" has T9 bulb (1-29-42). "GTY" is "GT" w/ Micanol base.
- 6SD7GT** Remote-cutoff pentode, heater 6.3 V @ 300 mA,  $g_m$  3.4 mS, sim. to 6SG7GT (RA, TS) (4-15-40) <8N>.
- 6SE7GT** Triple-grid amp. sim. to 6SG7GT, 6SH7GT, heater 6.3 V @ 300 mA,  $g_m$  3.1 mS (4-30-40).
- 6SF5, GT** Metal triode, single-ended 6F5, 7B4 char. (RCA) (10-7-38) <6AB>.
- 6SF7, GT** Metal diode - remote-cutoff pentode, 6B8 less one diode and single-ended, unrelated to 6F7 (3-3-41) <7AZ>.
- 6SG7, GT, Y** [AKA VT-211, CV1978]; metal remote-cutoff RF pentode, heater 6.3 V @ 300 mA,  $g_m$  4.7 mS; effectively a remote-cutoff 6SH7 (RCA, SY) (2-7-41) <8BK>. Variant: 6006. "GT" has T9 bulb (1-15-46). "GTY" is "GT" w/ Micanol base.
- 6SH7, GT, L** Metal sharp-cutoff HF pentode sim. to 7L7, heater 6.3 V @ 300 mA,  $g_m$  4.9 mS (RCA, SY) (8-1-41) <8BK>. "GT" has T9 bulb (11-20-42). "L" is "GT" shortened by 0.32" (SY) (1-17-46).
- 6SJ7, Y, W, GT, GTX, GTY, WGT** [AKA VT-116, CV70]; metal sharp-cutoff pentode; not specifically a single-ended 6J7;  $g_m$  2.5 mS (RCA, SY) (10-7-38) <8N>. Variant: 5693. "Y" [AKA 6SJ7 Spl, VT-116B, CV866] has Micanol base. "W" is ruggedized. "GT" [AKA VT-116A, CV590] has T9 bulb (5-1-39). "GTX" and "GTY" are "GT" w/ ceramic and Micanol bases.
- "WGT" is ruggedized "GT."
- 6SK7, Y, W, GT, GTX, GTY, WGT** [AKA VT-117, CV1981]; metal remote-cutoff pentode, heater 6.3 V @ 300 mA,  $g_m$  2.3 mS (RCA, SY) (10-7-38) <8N>; effectively a remote-cutoff 6SJ7. "GT" [AKA VT-117A, CV-1982] has T9 bulb (5-1-39). For "W," "Y," "GTX," and "GTY," see 6SJ7.
- 6SL7GT, A, L, WGT** [AKA VT-229, CV171]; high- $\mu$  duotriode, 7F7 char., sim. to 6SC7GT (RCA, SY) (7-2-41) <8BD>. Variant: 5691. Also see 6SC7. "A" and "L" are early ruggedized versions; "WGT" is final. Variant: 6113.
- 6SN7GT, A, L, WGT** [AKA VT-231, CV170]; med.- $\mu$  duotriode, dual 6J5GT, or single-ended GT version of 6F8G (RCA, SY) (3-3-41) <8BD>. Variants: 1633, 5692, 6042, 6180. "A" and "L" are early ruggedized versions; "WGT" is final ruggedized type, w/ heater-to-cathode voltage uprated from 100 V to 250 (RCA) {A4273B}. "GTA" is improved, uprated to 7.5 W total (4-6-50). "GTB" is controlled-warmup version of "GTA" for series-string receivers (6-8-54).
- 6SQ7, W, GT/G** [AKA VT-103, CV1990]; metal duodiode - high- $\mu$  triode, sim. to 75 and 2A6; not precisely a single-ended 6Q7,  $\mu$  100 (RCA) (10-7-38) <8Q>. "W" is ruggedized. "GT/G" has T9 bulb (5-8-41).
- 6SR7, GT** [AKA VT-233, CV109]; metal duodiode - med.- $\mu$  triode, single-ended 6R7 (RCA) (4-1-40) <8Q>. "GT" has T9 bulb (9-21-42).
- 6SS7, GT** [AKA VT-199, CV70]; metal remote-cutoff pentode, 6SK7 w/ 150 mA heater (TS) (4-22-41) <8N>. "GT" has T9 bulb (1-5-46).
- 6ST7** [AKA VT-205, CV109]; metal duodiode - med.- $\mu$  triode, 6SR7 w/ 150-mA heater (12-1-41) <8Q>.
- 6SU7GTX, GTY** Duotriode; sel. 6SL7GT w/ Micanol base, low gas and leakage; tested for balance (TS) (3-15-44) <8BD>. "6SU7 matching specifications are passed by about half of production 6SL7s." Variant: 6188. "GTX" is "GTY" w/ ceramic base; "GTY" has Micanol base.
- 6SV7** Metal diode - sharp-cutoff pentode, heater 6.3 V @ 300 mA,  $g_m$  3.6 mS (SY, TS) (6-20-46) <7AZ>.
- 6SZ7** Metal duodiode - high- $\mu$  triode; single-ended, 150-mA 6Q7 (TS) (11-20-45) <8Q>.
- 6T4** Min. low- $\mu$  UHF triode, heater 6.3 V @ 225 mA,  $\mu$  13 (HY, TS) (9-19-52) <7DK>.
- 6T5** Tubular electron-ray tuning indicator w/ ring display (4-12-37) <6R>, disc. in 1939. Replaceable by 6U5/6G5.
- 6T6** Triple-grid amp. (Can.; Rogers?), heater 6.3 V @ 450 mS,  $g_m$  5.5 mS (9-29-39) <6Z>, "metal-spray" type.
- 6T7G** [AKA 6Q6G]; duodiode-triode, 150-mA version of 6Q7G (RCA, TS) {A4064} (10-22-36) <7V>.
- 6T8, A** [AKA EABC80]; min. 9-pin triple-diode-triode; one diode has own cathode; heater 6.3 V @ 450

	mA, $\mu$ 70; sim. to min. 6S8GT (SY) (5-20-47) <9E>.		mA, triode $\mu$ 70, pentode $g_m$ 5.5 mS (SY) (4-2-51) <9AK>.
<b>6T9</b>	Compactron, equiv. to $\frac{1}{2}$ 12AX7 + 6AQ5 (GE, SY) (9-9-63) <12FM>	<b>6Y3G</b>	Diode rectifier (Can.), heater 6.3 V @ 700 mA (1-9-42) <4AC>.
<b>6U5</b>	[AKA 6G5, VT-98, CV504]; electron-ray tuning indicator, T9 tubular 6G5 (RCA) {CA18} (4-19-37) <6R>.	<b>6Y5</b>	Spray-shielded full-wave 6-pin rectifier, heater 6.3 V @ 800 mA, 350 V in, 50 mA <6J>. A mercury type as made by Majestic, but a vacuum type as produced by RCA and TS.
<b>6U6GT</b>	Beam power tube, optimized for low supply voltage, heater 6.3 V @ 750 mA, 11 W, sim. to 6W6GT (RA, SY) (6-6-40) <7S>.	<b>6Y6G, GA, GT</b>	[AKA VT-168A, 38766Y, CV205]; beam power tube for low B+ voltage, ST14 octal bulb, heater 6.3 V @ 1.25 A, 12.5 W, sim. to 6U6GT, 6W6GT (RCA) {A4072} (7-15-37) <7S>. "GA" has T12 bulb; "GT," T9 bulb.
<b>6U7G</b>	Remote-cutoff pentode, octal 6D6, sim. to 6S7G, 6W7G, $g_m$ 1.6 mS (RCA, TS) {A4071} (8-11-36) <7R>.	<b>6Y7G</b>	Class B duotriode, octal 79 (TS) (1-5-37) <8B>.
<b>6U8, A</b>	[AKA ECF82]; min. 9-pin med.- $\mu$ triode - sharp-cutoff pentode, heater 6.3 V @ 450 mA, triode $\mu$ 40, pentode $g_m$ 5 mS (SY, TS) (5-15-51) <9AE>. Variants: 6678, 7059, 7731, 8445.	<b>6Z3</b>	[AKA 1-V, q. v.]; rectifier, w/drawn.
<b>6V4</b>	[AKA EZ80]; min. 9-pin full-wave rectifier, heater 6.3 V @ 600 mA, 350 V PIV, 90 mA (HY, TF) (4-29-49) <9M>.	<b>6Z4</b>	[AKA 98, 84/6Z4, q. v.]; full-wave rectifier (8-15-35) <5D>.
<b>6V5GT</b>	Beam power tube, slightly derated 6V6GT w/ heater on pins 7 & 8 (GE) (11-15-48) <6AO>.	<b>6Z5</b>	[AKA 12Z5]; full-wave rect, 84 char., heater 12.6 VCT @ 300 mA, 230 V in, 60 mA (Maj., NU) <6K>.
<b>6V6, G, GTA, GTX, GTY</b>	[AKA VT-107, CV510]; metal octal beam power tube sim. to 7C5, heater 6.3 V @ 450 mA, 12 W (RCA) {A4055A} (1-3-38) <7S>. Variant: 7184. "G" [AKA VT-107B, CV509] has ST14 bulb (RCA) {A4055} (11-9-36). "GT" [AKA VT-107A, CV511] has T9 bulb (7-10-39). "GTA" is "GT" up-rated to 14 W, w/ controlled warmup time. Variants: 5871, 5992, 7408. "GX" and "GTX" have ceramic bases. "Y" and "GTY" have Micanol bases.	<b>6Z7G</b>	Dual power triode for Class B amps, 300-mA heater, 16 W total (TS) (5-24-37) <8B>.
<b>6V7G</b>	Duodiode-triode, octal 85 (TS) (8-14-36) <7V>.	<b>6ZY5G</b>	Full-wave rectifier, heater 6.3 V @ 300 mA, 1250 V PIV, 40 mA, like low-htr.-cur. 6X5G (RCA, TS) {R6052} (5-25-37) <6S>.
<b>6V8</b>	Min. 9-pin triple diode - triode, 6T8 w/ pinout scrambled (HY, SY) (9-6-50) <9AH>.	<b>7A4</b>	[AKA VT-192, CV1770, XXL]; loktal triode, 6J5 char. w/ short-lead VHF construction (SY) (3-8-39) <5AC>.
<b>6W5G</b>	[AKA VT-196, CV279]; duodiode rectifier, ST12 octal bulb, heater 6.3 V @ 900 mA, 1250 V PIV, 100 mA (TS) (1-4-37) <6S>.	<b>7A5</b>	Loktal beam power tube, heater 6.3 V @ 750 mA, 35L6 char. but derated to 5.5 W (SY) (5-4-39) <6AA>.
<b>6W6GT</b>	[AKA 6DG6GT]; beam power tube, heater 6.3 V @ 1.2 A, 10 W; sim. to 6U6GT, 6Y6G (TS) (6-8-39) <7S>.	<b>7A6</b>	Duodiode, 150-mA loktal 6H6 (SY) (6-10-38) <7DX>. Variant: 5679.
<b>6W7G</b>	Sharp-cutoff pentode, 150-mA version of 6J7G (TS) (1-17-38) <7R>.	<b>7A7, LM</b>	Pentode, loktal 6SK7 (SY) (12-9-38) <8V>. "LM" is rare "loktal-metal" version in metal shell with "octalox" pin wafer (RCA) (9-21-39).
<b>6X4, W</b>	[AKA EZ90]; min. full-wave cathode-type rectifier, min. 6X5GT, heater 6.3 V @ 450 mA, 1250 V PIV, 70 mA (RCA, SY) {R6277} (4-2-46) <5BS>. Variants: 5993, 6063, 6202, 6203.	<b>7A8</b>	Octode conv., 150-mA loktal 7B8, sim. to 6D8G (SY) (6-10-38) <8U>.
<b>6X5, G, GT, L, WGT</b>	[AKA VT-126, CV279]; metal full-wave rectifier, heater 6.3 V @ 600 mA, 1250 V PIV, 70 mA (RA, RCA, SY) {R6019} (2-13-36) <6S>. Variant: 5852. "G" [AKA VT-126A, CV572] is octal 84 in ST12 bulb (RCA) {R6028}. "GT" [AKA VT-126B, CV574] has T9 bulb (4-11-38). Variants: 1274, 5838, 5839. "L" and "WGT" are ruggedized.	<b>7AB7</b>	[AKA 1204]; short loktal VHF pentode, heater 6.3 V @ 150 mA, $g_m$ 1.8 mS (SY, TS) {SC651} (11-5-45) <8BO>.
<b>6X6G</b>	Electron-ray tuning indicator, octal (Rogers) (4-1-37) <8EV>.	<b>7AD7</b>	Loktal power/video pentode, heater 6.3 V @ 600 mA, $g_m$ 9.5 mS (SY) (4-2-47) <8V>.
<b>6X8</b>	Min. 9-pin triode-pentode, heater 6.3 V @ 450	<b>7AF7</b>	[AKA M1039]; loktal med.- $\mu$ duotriode, heater 6.3 V @ 300 mA, $\mu$ 16, 2.75 W (NU, SY) (11-30-44) <8AC>.
		<b>7AG7</b>	Loktal sharp-cutoff RF pentode, heater 6.3 V @ 150 mA, $g_m$ 4.2 mS (SY) (11-15-45) <8V>.
		<b>7AH7</b>	Loktal semi-remote-cutoff pentode, heater 6.3 V @ 150 mA, $g_m$ 3.3 mS (TS) (1-30-47) <8V>.
		<b>7AJ7</b>	Loktal sharp-cutoff pentode for preamps, heater 6.3 V @ 300 mA, $g_m$ 1.6-2.3 mS (SY) (8-15-47) <8V>.
		<b>7AK7</b>	Loktal pentode w/ suppressor brought out as gating electrode; heater 6.3 V @ 800 mA, $g_m$ 6 mS (SY) (3-20-48) <8V>. Claimed by SY as the

- 7AN7 first tube developed specifically for computer use. [AKA PCC84]; min. 9-pin med.- $\mu$  duotriode, heater 7.0 V @ 300 mA,  $\mu$  24, for VHF cascode amps. (HY) (8-15-55) <9DD>.
- 7AU7 Min. duotriode, 12AU7 w/ heater 7.0 VCT @ 300 mA (HY, SY) (11-15-54) <9A>.
- 7B4 High- $\mu$  triode, loktal 6F5 (SY) (1-30-40) <5AC>.
- 7B5, LT Power pentode, loktal 41 or 6K6 (SY) (2-16-39) <6AE>. "LT" (GE) is rare soldered-seam metal version (3-13-40); for RCA "LT," see 35A5LT.
- 7B6, LM Loktal duodiode - high- $\mu$  triode, 300-mA variant of 7C6 (SY) (2-16-39) <8W>. For "LM," see 7A7LM (RCA) (3-13-40).
- 7B7 Remote-cutoff pentode, 150 mA,  $g_m$  1.8 mS (SY) (12-8-38) <8V>.
- 7B8, LM [AKA VT-208, CV22]; pentagrid conv., loktal 6A8 (SY) (12-16-39) <8X>. For "LM" [AKA VT-208A], see 7A7LM (RCA) (3-13-40).
- 7C4 [AKA 1203A]; loktal UHF diode, heater 6.3 V @ 150 mA, 420 V PIV, 9 mA (3-26-43) <4AH>.
- 7C5, LT Beam power tube, loktal 6V6GT (SY) (2-16-39) <6AA>. Also see 2C48. "LT" is rare "soldered-seam" version (GE); for RCA "LT," see 35A5LT (3-13-40).
- 7C6 Loktal duodiode-triode, 150-mA 7B6 (SY) (12-9-38) <8W>.
- 7C7 [AKA VT-193, CV76]; loktal sharp-cutoff pentode, heater 6.3 V @ 150 mA,  $g_m$  1.3 mS, sim. to 6W7 (SY) (3-31-39) <8V>. Variant: 1273.
- 7D4 [AKA NU-1018]; never registered? (NU).
- 7D7 Loktal diode-pentode, heater 6.3 V @ 450 mA (7-6-39) <8AR>.
- 7E5 [AKA VT-241, 1201, CV890]; loktal UHF triode, heater 6.3 V @ 150 mA,  $\mu$  36,  $g_m$  3.0 mS, 4 W; unusually short leads; oscillates to 750 MHz (TS) (3-26-43) <8BN>.
- 7E6 [AKA VT-188, CV891]; duodiode - med.- $\mu$  triode, loktal 6R7 (TS) (4-12-39) <8W>.
- 7E7 Duodiode-pentode, loktal 6B8 (TS) (6-12-39) <8AE>.
- 7F7, w [AKA VT-189, CV893]; duotriode, loktal 6SL7 (8AC) (SY) (6-12-39) <8AC>. "W" is ruggedized.
- 7F8, w Short loktal VHF duotriode, 300 mA,  $\mu$  48 (SY) (7-31-44) <8BW>. "W" is ruggedized.
- 7G7 [AKA 1232]; loktal sharp-cutoff "television" pentode, heater 6.3 V @ 450 mA,  $g_m$  4.5 mS, sim. to 7L7 (TS) (1-30-40) <8V>.
- 7G8 [AKA 1206]; short loktal VHF twin tetrode, heater 6.3 V @ 300 mA, 1.65 W, usable to 400 MHz (SY, TS) {SD706} (3-22-44) <8BV>. Variant: 1296.
- 7H7 [AKA VT-190, CV75]; loktal remote-cutoff TV-FM IF pentode, 300 mA,  $g_m$  3.8 mS; sim. to 6AB7, 6SG7 (SY) (3-20-40) <8V>.
- 7J7 [AKA VT-194, CV22]; triode-hexode conv., loktal 6J8G, sim. to 7S7 (SY) (7-12-39) <8BL>.
- 7K7 Loktal duodiode-triode; diodes have own cathode; triode equals  $\frac{1}{2}$  7F7 (SY) (8-15-41) <8BF>.
- 7L7 Loktal sharp-cutoff pentode, sim. to 7G7 w/ 300 mA heater current; also to 6SH7, 7H7;  $g_m$  3.0 mS (RA, SY) (3-1-40) <8V>.
- 7N7 Duotriode, loktal 6SN7GT (RA, SY) (4-15-40) <8AC>.
- 7Q7 Pentagrid conv., loktal 6SA7 w/ higher conversion  $g_m$  of 0.55 mS (SY) (8-21-39) <8AL>.
- 7R7 Loktal duodiode - remote-cutoff pentode, like 6SF7 w/  $g_m$  raised to 3.0 mS and a second diode (SY) (3-7-41) <8AE>.
- 7S7 Loktal triode-heptode conv. sim. to 6J8, 7J7; higher conversion  $g_m$  (0.525 mS) than 7J7 (SY) (5-19-41) <8BL>.
- 7T7 Loktal triple-grid amplifier sim. to 7L7, 7G7, 7H7; heater 6.3 V @ 300 mA,  $g_m$  4.9 mS (GE, TS) (3-4-42).
- 7V7 [AKA 1231]; loktal sharp-cutoff power/video pentode, heater 6.3 V @ 450 mA,  $g_m$  5.8 mS, 4.0 W (SY) (1-21-41) <8V>. 1231 was the first loktal tube released, in May 1938. Actually has four grids, nos. 2 and 3 being connected together as screen. Also see 7W7.
- 7W7 Loktal variable- $\mu$  RF-IF pentode, essentially same as 7V7 except for capacitances (SY) (11-7-41) <8BJ>. Variant: 1282.
- 7X6 Full-wave rectifier, heater 6.3 V @ 1.2 A, 700 V PIV, 75 mA (TS) (7-6-49) <7AJ>.
- 7X7 [AKA XXFM]; loktal duodiode - hi- $\mu$  triode; one diode has own cathode; heater 6.3 V @ 300 mA,  $\mu$  100 (SY) (11-30-44) <8BZ>.
- 7Y4 Loktal full-wave rectifier, sim. to 6X5 w/ heater cut to 500 mA and limited to 70 mA out (SY) (12-9-38) <5AB>.
- 7Z4 [AKA VT-181, CV252]; full-wave loktal-rectifier, robust 7Y4, heater 6.3 V @ 900 mA, 1250 V PIV, 100 mA out (SY) (12-30-40) <5AB>.
- 12A5 Power pentode, ST12 bulb, 7 pins, heater 12.6 VCT @ 300 mA, 8 W (not a 12-V 6A5) (JB, RA, TS) <7F>.
- 12A6, Y, GT, GTY [AKA VT-134, CV525]; metal power pentode, heater 12.6 V @ 150 mA, 7.5 W (RCA) (10-16-39) <7S>. Variant: 5659. "GT" has T9 bulb (5-21-43). "Y" and "GTY" have Micanol bases.
- 12A7, ~~6A7~~ Diode rectifier - power pentode (not a 12-V 6A7 or 25A7), ST12 bulb w/ cap, 7-pin base, heater 12.6 V @ 300 mA, pentode 550 mA out; rectifier 30 mA (RCA, TS) {A512} <7K>.
- 12A8G, GT Pentagrid conv., 12-V versions of 6A8G and 6A8GT (SY) (1-7-39) <8A>.
- 12AB5 Min. beam power tube, heater 12.6 V @ 200 mA, 12 W, sim. electrically to 12V6 (SY) (7-5-55) <9EU>. Variant: 7061.
- 12AD7 Min. 9-pin high- $\mu$  duotriode, 12AX7 w/ heater raised to 225 mA, promoted on basis of low hum (HY, SY) (10-10-55) <9A>.

- 12AH7GT** [AKA VT-207, CV529]; duotriode, 12-V 6AH7GT (TS) (2-5-41) <8BE>.
- 12AH8** Min. 9-pin triode-heptode conv., heater 12.6 VCT @ 150 mA (HY) (10-25-51) <9BP>.
- 12AJ7** Min. 9-pin triode-heptode, heater 12.6 V @ 150 mA (HY) (12-19-55) <9CA>.
- 12AL5** Min. duodiode, 12V 6AL5 (SY) (6-6-47) <6BT>. Variant: 7055.
- 12AT6** Min. duodiode-triode, sim. to min. 12Q7 (RCA, SY) (10-25-45) <7BT>.
- 12AT7, A, WA, WB, WC** [AKA ECC81, B152, B309]; min. 9-pin high- $\mu$  duotriode, dual 6AB4, heater 12.6 VCT @ 150 mA,  $\mu$  62 (SY) (5-20-47) <9A>. "WA," "WB," and "WC" are ruggedized versions w/ progressively tighter process controls. Variants: 6060, 6201, 6677, 6679, 7728.
- 12AU6** Min. pentode, 12-V 6AU6 (SY) (12-20-46) <7BK>. Variant: 8426.
- 12AU7, A, W** [AKA ECC81]; min. 9-pin med.- $\mu$  duo-triode, separate cathodes (dual 6C4), heater 12.6 VCT @ 150 mA,  $\mu$  17 (RCA, SY) {A4498} (10-18-46) <9A>. "A" is low-microphonics version. Variants: 5814, 5963, 6067, 6189, 6670, 6680, 7316, 7318, 7489, 7730.
- 12AV6** Min. duodiode - high- $\mu$  triode, 12-V 6AV6 (RCA) (12-20-47) <7BT>.
- 12AV7** Min. low-noise sharp-cutoff duotriode, dual 6BC4, heater 12.6 VCT @ 225 mA,  $\mu$  48 (SY) (2-14-50) <9A>. Variants: 5965, 6829.
- 12AW6** Min. sharp-cutoff pentode, 12-V 6AG5 (SY) (2-3-47).
- 12AX7, A, WA** [AKA ECC83]; min. 9-pin high- $\mu$  duotriode, min. 6SL7GT, heater 12.6 VCT @ 150 mA  $\mu$  100 (SY) (9-25-47) <9A>. "A" has lower hum and microphonics. Variants: 6EU7, 12AD7, 5721, 5751, 6057, 6681, 7025, 7058, 7494, 7729.
- 12AY7** Min. 9-pin high- $\mu$  duotriode, for audio preamps, heater 12.6 VCT @ 150 mA,  $\mu$  48 (GE) (12-7-48) <9A>. Variants: 2082, 6072.
- 12AZ7, A** Min. 9-pin high- $\mu$  duotriode, heater 12.6 VCT @ 225 mA,  $\mu$  60 (SY) (3-2-51) <9A>. Variants: 6085, 7898.
- 12B6M** Diode-triode (Can.), octal w/ cap, heater 12.6 V @ 150 mA,  $\mu$  100, spray-shielded (7-1-40) <6Y>.
- 12B7, ML** [AKA 14A7, q. v.]; loctal pentode (*not* a 12-V 6B7) (6-6-39). "ML" is rare soldered-can metal version (GE) (7-7-39).
- 12B8GT** Triode-pentode, heater 12.6 V @ 300 mA, triode  $\mu$  97, pentode  $g_m$  1.8 mS (*not* a 12-V 6B8) (GE) (2-15-39) <8T>.
- 12BA6, A** Pentode, min. 12SG7 (GE) (10-25-45) <7BK>.
- 12BA7** Pentagrid VHF conv., 12-V 6BA7 (GE) (6-9-48) <8CT>.
- 12BD6** Min. RF pentode, 12-V 6BD6 (GE) (5-15-46) <7BK>.
- 12BE6, A** Pentagrid conv., min. 12SA7 (GE) (10-25-45) <7BK>.
- 12BF6** Min. rcvg. duodiode -triode, min. 12SR7 (GE) (10-25-45) <7BT>.
- 12BH7, A** Min. 9-pin med.- $\mu$  duotriode based on 12SN7, heater 12.6 V @ 300 mA,  $\mu$  16.5 (GE) (5-19-50) <9A>. Variant: 6913.
- 12BK6** Duodiode-triode, different from 12AV6 only in being 7/8" taller (GE) (1-17-50) <7BT>.
- 12BR7, A** Min. 9-pin duodiode - high- $\mu$  triode; diodes have own cathode; heater 12.6 VCT @ 225 mA,  $\mu$  60 (GE) (1-24-55) <9CF>. Variant: 8447.
- 12BT6** Min. duodiode - high- $\mu$  triode; differs from 12AT6 only in being 1/2" taller (1-17-50) <7BT>.
- 12BU6** Min. duodiode - low- $\mu$  triode; 12BT6 w/  $\mu$  of 16 (GE) (1-17-50) <7BT>.
- 12BV7** Pentode, 12BY7 w/  $g_m$  12 mS instead of 13 (GE) (2-21-55) <9BF>.
- 12BY7, A** [AKA 12BV7]; min. 9-pin sharp-cutoff RF/video pentode, heater 12.6 VCT @ 300 mA,  $g_m$  13 mS, 6.25 W (6-11-51) <9BF>. Variants: 7054, 7733, 8448.
- 12C8, Y, -K9, Spl.** [AKA VT-169]; metal duodiode - semi-remote-cutoff pentode; a 12-V 6B8, *not* a 12-V 6C8; heater 12.6 V @ 150 mA,  $g_m$  1.3 mS;(GE) (2-2-39) <8E>. Variant: 5660. "Y," "-K9," and "Spl" [AKA VT-153, 1664, CV128] have Micanol base and shell connected to Pin 1. Variant: 1664.
- 12DW7** Min. 9-pin asymmetric duotriode, equals 1/2 12AU7 + 1/2 7025, heater 12.6 VCT V @ 150 mA,  $\mu$ s 17 and 100 (1-26-59). Variant: 7247.
- 12E5GT/G** Triode, 12-V 6P5GT/G (GE) (7-26-39) <6Q>.
- 12F5GT** Triode, 12-V 6F5GT (TS) (1-7-39) <5M>.
- 12G4** Min. med.- $\mu$  triode, min. 12J5GT (GE, HY) (4-10-53) <6BG>.
- 12G7G** Duodiode-triode, octal base, heater 12.6 V @ 150 mS,  $\mu$  70 <7V>.
- 12H4** Min. med.- $\mu$  triode, heater 12.6 VCT @ 150 mA,  $\mu$  20 (GE, HY) (11-20-53) <7DW>.
- 12H6** [AKA VT-214, CV916]; metal duodiode, 12-V 6H6 (GE) (5-5-41) <7Q>.
- 12HIG7** Ruggedized frame-grid version of 12BY7A, uprated to 10 W and  $g_m$  32 mS; heater cut to 260 mA (GE, RCA) (12-7-64) <9BF>.
- 12J5, GT, WGT** [AKA VT-135A, CV534]; metal triode, 12-V 6J5 (GE) (4-6-50) <6Q>. "GT" [AKA VT-135, CV535] has T9 bulb (3-28-39). "WGT" is ruggedized "GT."
- 12J7G, GT** Pentode, 12-V 6J7G (GE) (2-6-40) <7R>.
- 12K7G, GT** Pentode, 12-V 6K7G (GE) (5-22-39) <7R>.
- 12K8, Y, Spl., GT** Metal triode-hexode conv., 12-V 6K8 (RCA) (10-16-39) <8K>. "Y" and "Spl." [AKA VT-132, CV24] have Micanol bases. "GT" has T9 bulb.
- 12L6GT** Beam power tube, 35L6GT w/ heater 12.6 V @ 600 mA (GE) (5-7-54) <7AC>. Variant: 1632.
- 12L8GT** Dual power pentode, dual 6G6, heater 12.6 V @ 150 mA, 2.5 W (GE) (8-27-43) <8BU>. Vari-

	ant: 1644.		
12Q7G, GT	Duodiode-triode, 12-V 6Q7G (GE) (1-7-39) <7V>.	14A4	ered) TV preamps (RCA) (11-26-62) <12AQ>.
12S8GT	Triple-diode-triode, 12-V 6S8GT (GE) (1-30-47) <8CB>.	14A5	Loktal UHF triode, 12-V 7A4 (GE) (10-24-40) <5AC>.
12SA7, Y, GT/G, GTY	[AKA VT-161, CV537]; metal pentagrid conv., 12-V 6SA7 (RCA) (2-2-39) <8R>. "Y" has Micanol base. "GT/G" has T9 bulb (12-1-41) <8AD>.	14A7	Loktal power pentode, 12-V 7A5 (GE) (10-24-40) <6AA>.
12SC7	[AKA VT-268, CV540]; metal duotriode, 12-V 6SC7 (GE) (2-2-39) <8S>. Variant: 1634.	14AF7	[AKA 12B7]; loktal pentode, 12-V 7A7 (SY) (10-28-40) <8V>. Intro. by SY as 12B7.
12SF5, GT	Metal triode, 12-V 6SF5 (GE) (9-21-39) <6AB>.	14B6	[AKA XXD]; duotriode, 12-V 7AF7 (SY) (7-21-42) <8AC>.
12SF7, Y	Metal diode-pentode, 12-V 6SF7 (GE) (3-3-41) <7AZ>. "Y" has Micanol base. "GT" has T9 bulb (2-1-46).	14B8	Loktal duodiode-triode, 12-V 7B6 (GE) (3-1-40) <8W>.
12SG7, Y, GT	[AKA VT-209, CV694]; metal pentode, 12-V 6SG7 (GE) (2-17-41) <8BK>. "Y" has Micanol base. "GT" has T9 bulb.	14C5	Loktal pentagrid conv., 12-V 7B8 (GE) (10-24-40) <8X>.
12SH7, GT	[AKA VT-288, CV922]; metal pentode, 12-V 6SH7 (GE) (8-15-41) <8BK>. "GT" has T9 bulb.	14C7	Loktal power pentode, 12-V 7C5 (SY) (10-14-40) <6AA>.
12SJ7	[AKA VT-162, CV697]; metal pentode, 12-V 6SJ7 (GE) (2-2-39) <8N>.	14E6	Loktal sharp-cutoff pentode, slightly different from 7C7; optimized for 120-V B+ (SY) (10-14-40) <8V>. Variant: 1280.
12SK7, Y, GT/G, GTY	[AKA VT-131, CV543]; metal pentode, 12-V 6SK7 (GE) (2-2-39) <8N>. Variant: 5661. "GT/G" has T9 bulb (12-1-41). "Y" and "GTY" have Micanol bases.	14E7	Loktal duodiode-triode, 12-V 7E6 (GE) (11-18-40) <8W>.
12SL7GT, WGT	[AKA VT-289, CV924]; duotriode, 12-V 6SL7GT (GE) (6-2-41) <8BD>. "WGT" is ruggedized.	14E7	Loktal duodiode-pentode, 12-V 7E7 (GE) (4-22-41) <8AE>.
12SN7GT, GTA, WGT	Duotriode, 12-V variant of 6SN7GT (GE) (4-22-41) <8BD>. "GTA" has controlled warm-up time.	14F7	Loktal duotriode, 12-V 7F7 (SY) (10-24-40) <8AC>.
12SQ7, GT	[AKA VT-104, CV546]; metal duodiode-triode, 12-V 6SQ7 (GE) (2-2-39) <8Q>. "GT" has T9 bulb (5-1-39).	14F8	Revg, loktal duotriode, 12-V 7F8 (GE) (7-29-46) <8BW>.
12SR7, GT	[AKA VT-133, CV700]; metal duodiode-triode, 12-V 6SR7 (GE) (10-16-39) <8Q>. "GT" has T9 bulb (5-21-43).	14GT8, A	Min. 9-pin rcvg. duodiode - high- $\mu$ triode, heater 14.0 V @ 150 mA, $\mu$ 72, separate cathodes for diodes (GE) (12-14-59) <9KR>. Variant: 7724.
12SW7, GT	Metal duodiode-triode; version of 12SR7 for operation from aircraft DC power (GE) (6-20-46) <8Q>. "GT" (also 6-20-46) was disc. in favor of 12SW7.	14H7	Loktal pentode, 12-V 7H7 w/ $g_m$ reduced from 4.0 to 3.8 mS (GE) (8-9-40) <8V>.
12SX7GT	Duotriode, version of 12SN7GT for operation from aircraft DC power (GE) (6-20-46) <8BD>.	14J7	Loktal triode-heptode conv., 12-V 7J7, sim. to 14S7 (GE) (8-23-39) <8BL>.
12SY7, GT	Metal pentagrid conv., version of 12SA7(GT) for operation from aircraft DC power (9-25-45) <8R>. "GT" has T9 bulb <8AD>.	14K7	[AKA UCH42]; octal triode-hexode, <i>not</i> a 12-V 7K7, heater 14.0 V @ 100 mA, part of Euro. 100-mA AC-DC series (10-10-55) <8GY>.
12X3	Diode, bulb w/ cap (Can.) (1-31-44). HV rectifier in AN/VVX-1.	14L7	[AKA UBC41]; octal duodiode-triode, <i>not</i> a 12-V 7L7, heater as for 14K7 (10-10-55) <8GZ>.
12Y4	Duodiode (Can.), heater type. In W. S. (Cdn.) No. 9 (4-15-44) as det.-AVC tube.	14N7	Loktal duotriode, 12-V 7N7 (GE) (10-14-40) <8AC>.
12Z3	[AKA 14Z3]; rectifier, ST12 bulb, 4-pin base, heater 12.6 V @ 300 mA, 700 V PIV, 55 mA (GE, RCA, TS) {R6001} <4G>.	14Q7	Loktal pentagrid conv., 12-V 7Q7 (SY) (3-1-40) <8AL>.
12Z5	[AKA 6Z5, q. v.]. (JB).	14R7	Loktal duodiode-pentode, 12-V 7R7 (SY) (3-7-41) <8AE>.
13CW4	Nuovistor triode, 6CW4 w/ heater 13.5 V @ 60 mA, promoted for antenna-mounted (remote-pow-	14S7	Loktal triode-heptode conv., 12-V 7S7, sim. to 14J7 (GE) (11-7-41) <8BL>.
		14W7	Pentode, 12-V 7W7 (GE) (11-7-41) <8BJ>.
		14X7	Loktal duodiode - high- $\mu$ triode, 12-V 7X7 (GE) (4-4-47) <8BZ>.
		14Y4	Loktal rectifier, 12-V 7Y4 (GE) (10-7-40) <5AB>.
		14Y7	(3-4-57). No further information.
		14Z3	Diode rectifier, 4-pin base, heater 14.0 V @ 300 mA, 250 V in, 60 mA <4G>.
		18FW6, A	Min. remote-cutoff pentode, 12BA6 w/ heater 18 V @ 100 mA, part of SY 100-mA AC-DC lineup

- w/ 18FW6, 18FY6, 34GD5, and 36AM3 (SY, RCA) (12-15-58) <7BK>.
- 18FX6** Min. pentagrid converter, 12BE6 w/ heater 18 V @ 100 mA (SY, RCA) (12-15-58) <7CH>. Also see 18FW6.
- 18FY6** Min. duodiode - high- $\mu$  triode, 12AV6 w/ heater 18 V @ 100 mA (RCA, SY) (12-15-58) <7BT>. Also see 18FW6.
- 20A5** Gas trigger tube (SY).
- 20J8GM** Triode-heptode conv. (Can.), 6J8 w/ heater 20.0 V @ 150 mA, spray-shielded (Rogers?) (9-18-39) <8H>.
- 25A6, GT** Metal power pentode, octal 43, heater 25 V @ 300 mA, 5.3 W (RA, RCA, TS) {A4011} (12-9-35) <7S>. "GT" (4-11-38) has T9 bulb (RCA) {A4037}.
- 25A7GT/G** Octal diode rectifier - pentode (*not* a 25-V 6A7 or 12A7), heater 25 V @ 300 mA; pentode is small, at 2.25 W (TS) (6-23-36) <8F>.
- 25AC5GT/G** Triode, 25-V 6AC5; same suggested driver tubes (TS) (10-18-38) <6Q>.
- 25B5** Duotriode direct-coupled amp., sim. to 6B5 but derated; heater 25 V @ 300 mA (TS) (8-17-36) <6D>.
- 25B6, G, GT** Metal power pentode, heater 25 V @ 300 mA, 12.5 W (*not* a 25-V 6B6) (TS) (8-5-36) <7S>. Variant: 5824. "GT" has T9 bulb (3-28-39).
- 25B8GT** Triode-pentode, 25-V 12B8GT, but *not* a 25-V 6B8GT (GE, TS) (3-28-39) <8T>.
- 25C6G, GA** Beam power tube, 6Y6G w/ heater 25 V @ 300 mA (*not* a 25-V 6C6) (GE, TS) (5-15-39) <7AC>. "GA" has T12 bulb.
- 25D8GT** Diode-triode-pentode (*not* a 25-V 6D8), heater 25 V @ 150 mA, triode  $\mu$  100, pentode  $g_m$  1.9 mS (TS) (3-31-39) <8AF>.
- 25L6, G, GT** [AKA VT-201, CV220]; metal beam power tube, 35L6GT w/ heater 25 V @ 300 mA, 10 W (RCA) {A4050} (11-4-36) <7AC>. "G" has ST14 bulb (RCA, TS) {A4050} (3-30-37). Variant: 1285. "GT" [AKA VT-201C, CV551] has T9 bulb (4-11-38). Variant: 6046.
- 25N6G** Duotriode, octal 25B5 (TS) (8-17-36) <7W>.
- 25X6GT** Full-wave rect./doubler, heater 25 V @ 150 mA, 125 V in, 60 mA (3-31-39) <7Q>.
- 25Y4, GT** [AKA PY31]; metal diode rectifier, heater 25.0 V @ 150 mA, 125 V in, 75 mA (6-6-39) <5AA>.
- 25Y5** Full-wave rectifier/doubler, heater 25 V @ 300 mA, 700 V PIV, 85 mA per plate (GE) (11-7-34) <6E>.
- 25Z3** Rectifier, heater 25.0 V @ 300 mA (5-6-41) <4G>.
- 25Z4, GT** Metal rectifier sim. to 25Y4GT, same heater (12-12-38) <5AA>.
- 25Z5** [AKA 38255]; full-wave rectifier/doubler, heater 25 V @ 300 mA, 700 V PIV, 75 mA per plate (RCA, TS) {R604} (8-30-35) <6E>.
- 25Z6, GT, WGT** Metal full-wave rectifier/doubler, octal 25Z5 (RCA) {R6014} (12-9-35) <7Q>. "GT" is in T9 bulb (RCA) {R6027} (4-11-38).
- 26A5** Min. beam power tube, heater 26.5 V @ 300 mA, for 26.5 V B+; char. sim. to half of 26A7 (RCA) {A4449}.
- 26A6** Pentode, 6BA6 w/ heater 26.5-V @ 70 mA (HY, RCA) {A4465E} (6-20-46) <7BK>.
- 26A7GT** Twin beam power tube (*not* a 25-V 6A7), heater 26.5 V @ 600 mA, optimized for 26.5-V B+, 4.0 W total (RCA, TS) {A5637E} (6-8-45) <8BU>.
- 26BK6** Min. duotriode-triode, 6BK6 w/ heater 26.5 V @ 70 mA (HY) (1-17-50) <7BT>.
- 26C6** Min. duodiode - low- $\mu$  triode; 6AT6 w/ heater 26.5 V @ 70 mA, optimized for 26-V B+ (HY, RCA) {A4454} (6-20-46) <7BT>.
- 26CG6** Min. remote-cutoff pentode, heater 26.5 V @ 70 mA,  $g_m$  2.0 mS (HY) (10-10-50) <7BK>.
- 26D6** Pentagrid conv., 6BE6 w/ heater 26.5-V @ 70 mA (RCA) (6-20-46) <7CH>.
- 26E6WG** Octal beam power tube, heater 26.5 V @ 300 mA, 12.5 W (TS) (10-3-55) <7S>.
- 26Z5W** Min. 9-pin full-wave rectifier, heater 26.5 VCT @ 200 mA, 100 mA out (TS) (3-15-51) <9BS>.
- 28D7, W** Loktal dual beam power tube, for 26.5 V on heater and plates, heater 400 mA, 6 W total (SY) (10-1-42) <8BS>. In BC-1206A, AN/ARN-5, etc. Variant: 1238.
- 28Z5** Full-wave loktal rectifier, 7Z4 w/ heater 28 V @ 240 mA (10-1-42) <6BJ>.
- 32L7GT** Diode rectifier - beam power tube, heater 32.5 V @ 300 mA, 1.5 W out (TS) (2-15-39) <8Z>.
- 34GD5, A** Min. beam power tube, 35C5 w/ heater 34 V @ 100 mA, 5 W (RCA, SY) (6-13-60) <7CV>. Also see 18FX6.
- 35A5, LT** Beam power tube, loktal 35L6GT (TS) (12-9-38) <6AA>. "LT" is rare RCA version w/ "octalox" metal-banded base.
- 35B5** Min. beam power tube, min. 35L6GT (TS) (11-20-46) <7BZ>.
- 35C5, A** Min. beam power tube (35B5 w/ revised pinout so that AC-DC receivers would not have 117 V on chassis even w/ 35C5 in wrong socket) (TS) (2-16-48) <7CV>.
- 35D5** (3-24-58). No further information.
- 35L6GT/G** Beam power tube, heater 35 V @ 300 mA, 8.5 W (TS) (1-6-39) <7AC>.
- 35W4, A** Rectifier, min. 35Z5GT/G (TS) (10-25-45) <5BQ>.
- 35Y4** Rectifier, loktal 35Z5 (TS) (11-8-40) <5AL>.
- 35Z3, LT** Rectifier, loktal 35Z4 (TS) (12-9-38) <4Z>. For "LT," see 35A5LT.
- 35Z4, GT** Rectifier, no lamp tap (1-6-39) <5AA>.
- 35Z5GT/G** Rectifier, w/ lamp tap, heater 35 V @ 150 mA, 700 V PIV, 100 mA (TS) (2-17-39) <6AD>.
- 35Z6G** Full-wave rectifier, 25Z6 uprated to 110 mA, heater 35.0 v @ 300 mA (TS) (3-15-40) <7Q>.

- 36AM3**, Min. rectifier, w/ lamp tap, heater 36 V @ 100  
**A, B** mA, 365 V PIV, 82 mA (RCA, SY, TS) (12-15-58) <5BQ>. Also see 18FX6.
- 40A1** Ballast tube for use in cathode ckt. of TV sweep tubes like 6BQ6GT (SY) (6-20-52).
- 40Z5GT** [AKA 45Z5GT, q. v.]; rectifier (12-18-39) <6AD>.
- 45Z3** Min. rectifier, no lamp tap; heater 45 V @ 75 mA, introduced for use in 3-way powered portable radios (RCA, TS) {R6130} (4-1-41) <5AM>.
- 45Z5GT** [AKA 40Z5GT]; rectifier, 45-V 35Z5GT (TS) (3-24-39) <6AD>.
- 50A1** Min. 9-pin ballast, 30 V @ 52 mA to 65 V @ 56 mA (Amperite, HY) (5-1-53) <9CM>. Apparently unique to late-model tube Zenith Trans-Oceanics.
- 50A2** [AKA 165R8, q. v.]; ballast (5-28-35).
- 50A5** Beam power tube, loktal 50L6GT (TS) (11-8-40) <6AA>.
- 50B2** [AKA 165R4, q. v.]; ballast (5-28-55).
- 50B5** Min. beam power tube, min. 50L6GT (RCA, TS) {A4388} (10-25-45) <7BZ>.
- 50C5, A** Min. beam power tube, 50-V 35C5 (TS) (2-16-48) <7CV>.
- 50C6G, GA** Beam power tube, 50-V 25C6G (TS) (10-9-39) <7AC>.
- 50L6GT/G** Beam power tube, 50-V 35L6GT, uprated to 10 W (TS) (3-31-39) <7AC>.
- 50X6** Rectifier, loktal 50Y6 (TS) (10-29-46) <7AJ>.
- 50Y6GT/G** Full-wave rectifier/doubler, 50-V 25Z6 (TS) (12-2-40) <7Q>.
- 50Y7GT** Full-wave rectifier ("G" 50Y6 w/ lamp tap) (TS) (4-30-48) <8AN>.
- 50Z6G** Full-wave rectifier/doubler, sim. to 50Y6GT/G, heater 50 V @ 300 mA (4-18-38) <7Q>.
- 50Z7G** Full-wave rect./doubler, sim. to 50Y6GT/G, heater 50 V @ 150 mA w/ lamp tap (TS) (6-2-39) <8AN>.
- 70A7GT** Diode rectifier - beam power tube w/ lamp tap, heater 70 V @ 150 mA, 1.5 W out, rectifier 60 mA (TS) (6-30-39) <8AB>.
- 70L7GT** Diode rectifier - beam power tube, no lamp tap, heater 70 V @ 150 mA, 1.8 W out, rect. 70 mA, sim. to 25L6 + 117Z4 (TS) (3-28-39) <8AA>.
- 117L7/ M7GT** Diode rectifier - beam power tube, heater 117 V @ 90 mA, 6.0 W; rectifier 350 V PIV, 75 mA (TS) (9-25-39) <8AO>.
- 117N7GT** Diode rectifier - pentode, sim. to 117P7GT except for pinout; more power than 117L/M7 (TS) (5-15-40) <8AV>.
- 117P7GT** Diode rectifier - pentode, heater 117 V @ 90 mA, 1.0 W, rectifier 350 V PIV, 117N7GT w/ pinout scrambled (TS) (1-7-41) <8AV>.
- 117Z3** Rectifier, min. 117Z4GT, heater 117 V @ 40 mA, 330 V PIV, 90 mA (TS) (10-31-45) <4CB>.
- 117Z4GT** Rectifier, heater 117 V @ 40 mA, 350 V PIV, 90 mA (TS) (4-22-41) <5AA>.
- 117Z6 GT/G, GC** Full-wave rectifier/doubler, heater 117 V @ 75 mA, 700 V PIV, 60 mA per plate (TS) (8-5-39) <7Q>. Introduced with center-tapped heater; tap abandoned ca. 1940. "GC" (SY) had center-tapped heater like original 117Z6G; produced temporarily.