

TUNG-SOL

TUBE TYPES NOT RECOMMENDED FOR NEW EQUIPMENT DESIGN

The following listed electron tube types should not generally be considered for new equipment design without prior assurance of availability. Some of these types use bulb or base styles or manufacturing techniques and processes which no longer are available to the tube industry. Others, because of a continued low demand, have disappeared from manufacturers' and jobbers' stocks and most likely will never be manufactured again.

00A-1AF4

TUBE TYPES NOT RECOMMENDED FOR NEW EQUIPMENT DESIGN

TYPE	DESCRIPTION	VOLTS	AMPERES	TYPE OF CATHODE	APPLICATION	FLAMMENT		TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS												BULB	BASE	TYPE
						AMPERES	VOLTS	SCREEN GRID VOLTS (NEG)	CONTROL GRID VOLTS (NEG)	PLATE CURRENT mA	SCREEN CURRENT mA	CONDENSANCE pF	MESSAGE RATE (CPS)	AMPLIFICATION	LOAD RESISTANCE OHMS	POWER OUTPUT WATTS	MAX AC RMS VOLTAGE VOLT	MAX DC VOLTAGE VOLT	RECTIFIER CONVERSION INPUT OUTPUT MA			
00A	TRIODE	5	0.25	FIL.	DETECTOR	45	0	1.5		666	30	20					ST-14	78	4D	00A		
01A	TRIODE	5	0.25	FIL.	CLASS A AMPLIFIER	135	9	3		800	10	8					ST-14	78	4D	01A		
0Y4	GAS FILLED DIODE			COLD	HALF-WAVE RECTIFIER	Plus 7-8 Must be Connected											MT-8	17	4BU	0Y4		
0Y4G	GAS FILLED DIODE			COLD	HALF-WAVE RECTIFIER	Peak Current: 500 Ma. Max.											T-7	12	4BU	0Y4G		
0Z4G	GAS FILLED DIODE			COLD	FULL-WAVE RECTIFIER	Peak starting supply voltage per plate: 300 min. Peak plate-to-plate voltage: 1000 DC output voltage: 300; peak plate current: 200 ma.											T-7	12	4R*	0Z4G		
1A3	DIODE	1.4	0.15	HEATER	HF DETECTOR RECTIFIER												T-5½	4	5AP	1A3		
1A4P	PENTODE	2	0.06	FIL.	CLASS A AMPLIFIER	180	67.5	3	2.3	0.8	750	1000	750				ST-12	72	4M	1A4P		
1A4T	TETRODE	2	0.06	FIL.	CLASS A AMPLIFIER	180	67.5	3	2.3	0.7	750	960	720				ST-12	72	4K	1A4T		
1A5GT	PENTODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90	90	4.5	4	0.8	850	300		25,000	0.115		T-9	35	6X	1A5GT		
1A6	HEFTODE	2	0.06	FIL.	CONVERTER	180	67.5	3	1.3	2.4	300	500		25,000	0.100		ST-12	72	6L	1A6		
1A7G	HEFTODE	1.4	0.05	FIL.	CONVERTER	90	45	0	0.55	0.6	250	600					T-9	52	7Z	1A7G		
1A7GT	HEFTODE	1.4	0.05	FIL.	CONVERTER	90	90	0	0.6	1.2	250	600					T-9	34	7Z	1A7GT		
1A8S	PENTODE	1.2	0.13	FIL.	CLASS A AMPLIFIER	150	150	1.5	6.8	2	1350	1250					T-9	25	5BF	1A8S		
1AF4	PENTODE	1.4	0.025	FIL.	CLASS A AMPLIFIER	67.5	67.5	0	1.2	0.32	925	2200					T-5½	4	6AR	1AF4		

SAME CHARACTERISTICS AS 0Y4

Peak starting supply voltage per plate: 300 min.
Peak plate-to-plate voltage: 1000
DC output voltage: 300; peak plate current: 200 ma.

117 330 0.5

Cutoff: 15 μmhos @ -15 V.

Signal: 3.2 V. RMS
Eg₁ = 180 V.
Eg₂ = 135 V.

Eg = 90 V.
Osc. Grid Resistor = 0.2 MΩ; R_i = 35 μa.

Ig₁ = 1.2 Ma.
Ig₂ = 1.2 ma.
Osc. grid resistor: 0.2 megohm; Ig: 35 μa.

Cutoff: 10 μmhos @ -23 V.
Cutoff: 10 μmhos @ -14 V.

Cutoff: 10 μmhos at -2.8 V.
Cutoff: 10 μmhos at -3.8 V.

TUNG-SOL

1AF5-1D8GT

TYPE	DESCRIPTION	VOLTS	FILAMENT	TYPE OF CATHODE	APPLICATION	SCREEN GRID (VOLTS NEG.)				CONTROL GRID (VOLTS NEG.)				TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BASE
						PLATE VOLTS	SCREEN CURRENT MA.	CONTROL GRID CURRENT MA.	PLATE CURRENT MA.	SCREEN CURRENT MA.	CONTROL GRID CURRENT MA.	PLATE CURRENT MA.	RESISTANCE OHMS	AMPLIFICATION FACTOR	LOAD RESISTANCE OHMS	POWER OUTPUT WATTS	MAX. A.C. PEAK TO PEAK VOLTS	MAX. A.C. R.M.S. VOLTS	MAX. D.C. OUTPUT MA.	RECTIFIER	REVERSE CURRENT MA.	MAX. A.C. PEAK TO PEAK VOLTS	MAX. A.C. R.M.S. VOLTS	
1AF5	DIODE PENTODE	1.4	0.025	FIL.	CLASS A AMPLIFIER	90	0	1.1	0.4	600	2000	Cutoff: 10 μmhos @ -3.5 V.	T-5½	4	MIN. 7	6AU	1AF5							
1AJ5	DIODE PENTODE	1.25	0.04	FIL.	CLASS A AMPLIFIER	45	45	0	1.0	0.3	300	Minimum Diode Current @ 10 VDC Eg ₂ = 0.5 Ma.	T-2X3	2	SUB. MIN. 6	1AJ5								
1AX2	DIODE	1.4	0.65	FIL.	HALF-WAVE RECTIFIER	Positive Pulse Plate Voltage = 20,000 V. Negative Pulse Plate Voltage = 5000 V.						DC Output Voltage = 20,000 V. DC Load Current = 300 μa.	T-6½	10	MIN. 9	9Y	1AX2							
1B4P	PENTODE	2	0.06	FIL.	CLASS A AMPLIFIER	180	67.5	3	1.7	0.6	1500	1000	ST-12	72	SMALL. 4	4M	1B4P							
1B5	DOUBLE DIODE TRIODE	2	0.06	FIL.	CLASS A AMPLIFIER	135		3	0.8	575	35	20	ST-12	70	SMALL. 6	6M	1B5							
1B7G	HEPTODE	1.4	0.1	FIL.	CONVERTER	90	45	0	1.5	1.3	350	350	Eg ₂ = 90 V., Ig ₂ = 1.6 Ma., Ig ₁ = 35 μa Osc. Grid Resistor = 0.2 Megohm	T-9	44	8 PIN OCTAL.	1B7G							
1B8GT	DIODE TRIODE HEPTODE	1.4	0.1	FIL.	CLASS A AMPLIFIER	90	90	6	6.3F	1.4F	1150	275	14,000 0.21	T-9	33	8 PIN OCTAL.	1B8GT							
1C5GT	PENTODE	1.4	0.1	FIL.	CLASS A AMPLIFIER	90	90	7.5	7.5	1.6	1550	115	8000 0.24	T-9	35	7 PIN OCTAL.	1C5GT							
1C6	HEPTODE	2	0.12	FIL.	CONVERTER	180	67.5	3	1.5	2	325	700	Eg ₂ = 180 V., thru 20,000 Ohms Eg ₁ = 135 V.	ST-12	72	SMALL. 6	6L	1C6						
1C7G	HEPTODE	2	0.12	FIL.	CONVERTER	180	67.5	3	1.5	2	325	700	Eg ₂ = 180 V., thru 20,000 Ohms Eg ₁ = 135 V.	ST-12	71	8 PIN OCTAL.	1C7G							
1C8	HEPTODE	1.25	0.04	FIL.	CONVERTER	30	30	0	0.32	0.75	100	300	Osc. Grid Resistance: 0.1 Meg. Osc. Grid Current: 30 μamp	T-3	1	SUB. MIN. 8	8CN	1C8						
1D5GP	PENTODE	2	0.06	FIL.	CLASS A AMPLIFIER	180	67.5	3	2.3	0.75	750	960	750	ST-12	71	8 PIN OCTAL.	1D5GP							
1D5GT	TETRODE	2	0.06	FIL.	CLASS A AMPLIFIER	180	67.5	3	2.3	0.7	750	960	720	ST-12	71	8 PIN OCTAL.	1D5GT							
1D7G	HEPTODE	2	0.06	FIL.	CONVERTER	180	67.5	3	1.3	2.4	300	500	Eg ₂ = 180 V., thru 20,000 ohms Eg ₁ = 135 V.	ST-12	71	8 PIN OCTAL.	1D7G							
1D8GT	DIODE TRIODE PENTODE	1.4	0.1	FIL.	TRIODE UNIT AS CLASS A AMPLIFIER PENTODE UNIT AS CLASS A AMPLIFIER	90	90	0	0.3	325	77	25	T-9	33	8 PIN OCTAL.	8AJ	1D8GT							

* Zero signal. † Minimum value.

TUNG-SOL

1J5G-1N6G

TYPE	DESCRIPTION	VOLTS	AMPERES	FILAMENT	TYPE OF CATHODE	APPLICATION			TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB	BASE							
						SCREEN GRID VOLTS	CONTROL GRID VOLTS (NEG)	PLATE CURRENT MA	SCREEN CURRENT MA	TRANSFORMER CONDUCTANCE	PLATE RESONANCE FACTOR	AMPLIFICATION FACTOR	OLD RESONANCE FACTOR	POWER CURVE	MAX. AC RING VOLTS	MAX. DC RING VOLTS	RECIFIER CONDENSER INPUT	STYLE			OUTLINE NO.	STYLE	TYPE				
1J5G	PENTODE	2.0	0.12	FIL.	CLASS A AMPLIFIER	135	16.5	7	2	950	100	13,500	0.45	ST-14	77	7 PIN OCTAL	6X	1J5G									
1J6G	DOUBLE TRIODE	2.0	0.24	FIL.	CLASS B AMPLIFIER	135	0	10	Current for Both Sections 10,000 2.1 Plate-to-Plate										ST-12	69	8 PIN OCTAL	7AB	1J6G				
1L6	HEPTODE	1.4	0.05	FIL.	CONVERTER	90	0	0.5	1.2	300	650	I _{g1} : 1.2 ma. I _{g2} : 35 μa thru 200 000 ohms I _a : 2.35 ma.										T-5½	4	MIX. 7 PIN	7DC	1L6	
1LA4	PENTODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90	4.5	4	0.8	850	300	2500	0.115	T-9	26	8 PIN LOC.	5AD	1LA4									
1LA6	HEPTODE	1.4	0.05	FIL.	CONVERTER	90	Min.	0.55	0.6	250	750	E _{g1} = 90 V.; I _{g2} = 1.2 Ma.; I _{g3} = 35 μa Osc. Grid Resistor = 0.2 Megohm										T-9	26	8 PIN LOC.	7AK	1LA6	
1LB4	PENTODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90	9	5F	1F	925	250	12,000	0.2	T-9	26	8 PIN LOC.	5AD	1LB4									
						45	4.5	1.6F	0.3F	650	400	20,000	-0.35														
1LC5	PENTODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90	45	0	1.15	30	775	1000	Cutoff: 10 μa @ -3.4 V. Cutoff: 10 μa @ -3.4 V.										T-9	26	8 PIN LOC.	7AO	1LC5
1LC6	HEPTODE	1.4	0.05	FIL.	CONVERTER	90	35	0	0.7	275	650	E _{g1} = 45 V.; I _{g2} = 1.4 Ma.; I _{g3} = 35 μa Osc. Grid Resistor = 0.2 Megohm										T-9	26	8 PIN LOC.	7AK	1LC6	
						45	35	0	0.7	275	250	300															
1LD5	DIODE PENTODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90	45	0	0.6	0.1	575	750											T-9	26	8 PIN LOC.	6AX	1LD5
1LE3	TRIODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90	3	1.4	0.4	760	19	14.5											T-9	26	8 PIN LOC.	4AA	1LE3
						90	0	4.5	0.4	1300	11.2	14.5															
1LG5	PENTODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90	1.5	3.7	0.9	1150	500	Cutoff: 10 μmhos @ -19 V. Cutoff: 10 μmhos @ -10 V.										T-9	26	8 PIN LOC.	7AO	1LG5	
						90	45	0	1.7	0.4	800	1000															
1LH4	DIODE TRIODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90	0	0.15	0.06	275	240	65											T-9	26	8 PIN LOC.	5AG	1LH4
						67.5	0	0.06	0.06	210	300	60															
1LN5	PENTODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90	90	0	1.6	0.35	800	1100	Cut-off: 10 μmhos at -4.5 V.										T-9	26	8 PIN LOC.	7AO	1LN5
1N6G	DIODE PENTODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90	4.5	3.1	0.1	800	300	25,000	Signal: 3.5 V. RMS										T-9	48	8 PIN OCTAL	7AM	1N6G

* Zero signal.

1N6GT-1V5

TYPE	DESCRIPTION	VOLTS	FILAMENT	FILAMENT		APPLICATION	SCREEN GRID		CONTROL GRID		PLATE CURRENT	SCREEN CURRENT	PLATE CURRENT	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS						BULB	BASE
				AMPERES	TYPE OF CATHODE		PLATE VOLTS	SCREEN VOLTS	CONTROL GRID VOLTS (NEG)	PLATE CURRENT MA				SCREEN CURRENT MA	TRANSFORMER CONDUCTANCE	RESONANT FREQUENCY	RESISTANCE	AMPLIFICATION	LOAD RESISTANCE		
1N6GT	DIODE PENTODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90	90	4.5	3.1	800	300	25,000	0.1	Signal: 3.5 V. RMS	T-9	36	7AM	8 PIN OCTAL	1N6GT		
1P5GT	PENTODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90	90	0	2.3	0.7	750	800	Cutoff: 10 μ mbos @ -12 V.	T-9	52	5Y	7 PIN OCTAL	1P5GT			
1P5GT	PENTODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90	90	0	2.3	0.7	750	800	Cutoff: 10 μ mbos at -12 V.	T-9	34	5Y	7 PIN OCTAL	1P5GT			
1Q5GT	BEAM PENTODE	1.4	0.1	FIL.	CLASS A AMPLIFIER	90 85	90 85	4.5 5	9.5* 7.0*	1.3* 0.8*	2200 1950	90 70	8000 9000	0.27 0.25	Signal: 3.2 V. RMS	T-9	35	6AF	7 PIN OCTAL	1Q5GT	
1Q6	DIODE PENTODE	1.25	0.04	FIL.	CLASS A AMPLIFIER	67.5 30	67.5 30	0 0	1.6 0.33	0.4 0.09	600 330	400 500				T-3	1	SUB. MIN. 8 PIN	8CO	1Q6	
1R4	DIODE	1.4	0.15	FIL.	RECTIFIER									Resonant Frequency: 1500 Mc. Voltage Drop @ 2 Ma.: 8 Vdc.	117	1	8 PIN 9AC	4AH	1R4		
1S4	PENTODE	1.4	0.1	FIL.	CLASS A AMPLIFIER	90 45	67.5 45	7 4.5	7.4* 3.8*	1.4* 0.8*	1375 1250	100 100	8000	0.27 0.065	Signal: 5 V. RMS Signal: 3.2 V. RMS	T-5 1/2	4	7 PIN	7AV	1S4	
1SA6GT	PENTODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90 45	67.5 45	0 0	2.4 1.1	0.68 0.3	970 750	800 700		Cutoff: 5 μ mbos @ -3.5 V. Cutoff: 5 μ mbos @ -3.5 V.	T-9	36	6BD	8 PIN OCTAL	1SA6GT		
1SB6GT	DIODE PENTODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90 45	67.5 45	0 0	1.45 0.6	0.38 0.16	665 500	700 900				T-9	35	6AF	8 PIN OCTAL	1SB6GT	
1T5GT	BEAM PENTODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	90	90	6	6.5	0.8	1150	250	14,000	0.17	Signal: 4.3 V. RMS	T-9	35	6X	7 PIN OCTAL	1T5GT	
1U6	HEPTODE	1.4	0.025	FIL.	CONVERTER	90	90	0	0.6	1.1	300	500			T-5 1/2	4	MIN. 7 PIN	7DC	1U6		
1-V	DIODE	6.3	0.3	HEATER	HALF-WAVE RECTIFIER										325	1000	45	SMALL 4 PIN	4G	1-V	
1V5	PENTODE	1.25	0.04	FIL.	CLASS A AMPLIFIER	67.5	67.5	4.5	2	0.4	750	150	25,000	0.05		T-3	1	SUB. MIN. 8 PIN	8CP	1V5	

* Zero signal.

TUNG-SOL

1W4-2B7

TYPE	DESCRIPTION	FILAMENT		APPLICATION		TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB		BASE								
		VOLTS	AMPERES	TYPE OF CATHODE	SCREEN GRID	CONTROL GRID	PLATE GRID	SCREEN CURRENT	PLATE CURRENT	TRANS CONDUCTANCE	AMPLIFICATION FACTOR	LOAD RESISTANCE	POWER OUTPUT	MAX. A.C. RMS VOLTAGE	MAX. A.C. RMS VOLTAGE	MAX. PEAK INVERSE VOLTAGE	RECTIFIER CONDENSER INPUT		MAX. D.C. OUTPUT MA.	STYLE	OUTLINE NO.					
1W4	PENTODE	1.4	0.05	FIL.	CLASS A AMPLIFIER	67.5 90	67.5 90	3.8F 5P	0.8F 1P	835 925	300 250	16,000 12,000	0.1 0.2				T-5½	4	MIS. 7 PIN	5BZ	1W4					
1W5	PENTODE	1.25	0.04	FIL.	RF AMPLIFIER	67.5	67.5	0	1.85	0.75	735	700	Cutoff: 10 amp @ -2 V.						T-3	1	SUB. 8 PIN	8CP	1W5			
1X2A	DIODE	1.25	0.2	FIL.	HALF WAVE RECTIFIER IN TV RECEIVERS																		1X2A			
2A3	TRIODE	2.5	2.5	FIL.	CLASS A AMPLIFIER	250		45	60	5350	0.8	4.2	2500	3.5	Grid bias measured from filament center									2A3		
					CLASS AB AMPLIFIER	300	62	80	Current and output for 2 tubes.		3000	15	Load is plate-to-plate													
2A4G	THYRATRON	2.5	2.5	FIL.	CONTROL TUBE																		2A4G			
2A5	PENTODE	2.5	1.75	HEATER	CLASS A AMPLIFIER	250	250	16.5	34F	6.5F	2500	80	7000	3.2										2A5		
					DOUBLE DIODE TRIODE	250		2	0.9	1100	91	100														
2A6	HEPTODE	2.5	0.8	HEATER	CLASS A AMPLIFIER	250																		2A6		
					CONVERTER	250	100	3	3.5	2.7	550	360	Eg ₂ = 180 V. thru 20,000 Ohms													
2A7	TRIODE	2.35	0.6	HEATER	CLASS A AMPLIFIER	80		▲	17.5		6500	2.1	13.5											2A7		
					HIGH VOLTAGE RECTIFIER																					
2B3	DIODE	1.75	0.25	FIL.	Steady State Peak Plate Current = 50 Ma.																					
					27000	0.5																				
2B5	DOUBLE TRIODE	2.4	0.13	FIL.	AMPLIFIER	90	1.0	2.6			1150	18.7	21.5												2B5	
					CONVERTER	250																				
2B6	DOUBLE TRIODE	2.5	0.225	HEATER	AMPLIFIER	250		+2.5	40	3500	18	5000	0.035												2B6	
					CONVERTER	250		24	4	600	7.2	5000	0.600													
2B7	DOUBLE DIODE PENTODE	2.5	0.8	HEATER	CLASS A AMPLIFIER	250	125	3	9	2.3	1125	600												2B7		

▲ Bias obtained thru 150 ohm cathode resistor.

† Zero signal.

2C4-3BN4

TYPE	DESCRIPTION	FILAMENT		TYPE OF CATHODE		TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS												BULB	BASE					
		AMPERES	VOLTS	AMPERES	VOLTS	APPLICATION	PLATE VOLTS	SCREEN GRID VOLTS (NEG)	CONTROL GRID VOLTS (NEG)	PLATE CURRENT MA	SCREEN CURRENT MA	CONDUCTANCE OHMS	RESISTANCE OHMS	AMPLIFICATION FACTOR	LOAD RESONANCE	POWER OUTPUT WATTS	MAX. A.C. OUTPUT MA			RECTIFIER CONDUCTANCE MA	STYLE	OUTLINE NO.	STYLE	TYPE
2C4	DIODE TRIODE	2.5	0.65	FIL.	CONTROL TUBE	CONTROL TUBE	Max. Voltage Between Elements: 450 V. Avg. Anode Current: 5 Ma.													4	T-5½	MIN. 7 PIN	5AS	2C4
2E5	DIODE INDICATOR	2.5	0.8	HEATER	TUNING INDICATOR	TUNING INDICATOR	Plates: 250 V. thru 1 Meg. 0.24 Ma. Shadow Angle: 90° @ -8 V. Bias Target: 250 V., 4 Ma.													70	ST-12	SMALL 6 PIN	6R	2E5
2G5	DIODE INDICATOR	2.5	0.8	HEATER	TUNING INDICATOR	TUNING INDICATOR	Plate: 250 V. thru 1 Meg. 0.24 Ma. Shadow Angle: 90° at zero bias, 0° at -22 V. bias Target: 250 V., 4 Ma. Subject to wide variation													70	ST-12	SMALL 6 PIN	6R	2G5
2S/4S	DIODE	2.5	1.35	HEATER	DETECTOR	DETECTOR	Plate Voltage: 50 Volts per Plate Cathode Current: 80 Ma.													70	ST-12	SMALL 5 PIN	5D	2S/4S
2V2	DIODE	2.5 1.25	0.2 0.4	FIL.	HIGH VOLTAGE RECTIFIER	HIGH VOLTAGE RECTIFIER	Steady State Peak Plate Current: 80 Ma. Tube Voltage Drop @ 7.0 Ma.: 150 V.													57	T-11	MBD, OCTAL 8 PIN	8FV	2V2
2V3G	DIODE	2.5	5.0	FIL.	HIGH VOLTAGE RECTIFIER	HIGH VOLTAGE RECTIFIER														72	ST-12	SMALL 6 PIN	4Y	2V3G
2W3	DIODE	2.5	1.5	FIL.	HALF-WAVE RECTIFIER	HALF-WAVE RECTIFIER									350					20	MT-8	5 PIN OCTAL	4X	2W3
2W3GT	DIODE	2.5	1.5	FIL.	HALF-WAVE RECTIFIER	HALF-WAVE RECTIFIER									350					32	T-9	5 PIN OCTAL	4X	2W3GT
2X2/879	DIODE	2.5	1.75	HEATER	HIGH VOLTAGE RECTIFIER	HIGH VOLTAGE RECTIFIER									4500					71	ST-12	SMALL 4 PIN	4AB	2X2/879
3A8GT	DIODE TRIODE PENTODE	1.4 2.8	0.1 0.05	FIL.	CLASS. AMP. TRIODE UNIT	CLASS. AMP. TRIODE UNIT														65	T-9	8 PIN OCTAL	8AS	3A8GT
3B2	DIODE	3.15	0.22	HEATER	HALF-WAVE RECTIFIER	HALF-WAVE RECTIFIER	Max. Peak Plate Current = 80 Ma. Max. Average Plate Current = 1.1 Ma.													68A	T-12	SHORT 8 PIN	8GH	3B2
3B5GT	BEAM PENTODE	1.4 2.8	0.1 0.05	FIL.	CLASS. A AMPLIFIER	CLASS. A AMPLIFIER														36	T-9	7 PIN OCTAL	7AP	3B5GT
3B7	DOUBLE TRIODE	1.4 2.8	0.22 0.11	FIL.	CLASS. AB AMPLIFIER	CLASS. AB AMPLIFIER														26	T-9	8 PIN LOC.	7BE	3B7
3BN4	TRIODE	3.0	0.45*	HEATER	CLASS. A AMPLIFIER	CLASS. A AMPLIFIER														4	T-5½	MIN. 7 PIN	7EC	3BN4

* Heater warm-up time: 11 seconds.

† Bias obtained thru 220 ohm cathode resistor.

‡ Zero signal.

TUNG-SOL

3C2-5A58

TYPE	DESCRIPTION		FILAMENT		APPLICATION		TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB		BASE						
	TYPE OF CATHODE	AMPERES	VOLTS	TYPE OF CATHODE	APPLICATION	PLATE LOAD	SCREEN AND CONTROL GRID VOLTS (MESH)	SCREEN CURRENT MA	PLATE CURRENT MA	CONDUCTANCE OHMS	RESISTANCE OHMS	PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	LOAD RESISTANCE OHMS	POWER OUTPUT WATTS	MAX. CATHODE HEAT D.C. OUTPUT MA	MAX. PEAK INVERTER VOLTS	MAX. R.M.S. INVERTER VOLTS	RECTIFIER CONDENSER INPUT	STYLE	OUTLINE NO.	STYLE	BASING	TYPE	
3C2	DIODE	3.15 0.42	0.21 1.58	FIL.	HIGH VOLTAGE RECTIFIER	90	9 6	1.4 1.4	1550 1450		8000 10,000	0.24 0.26				T-12	33,000	1.1	T-12	26	SHORT OCTAL 8 PIN	8FV		3C2	
3C5GT	PENTODE	1.4 2.8	0.1 0.05	FIL.	CLASS A AMPLIFIER	90 90	9 6	1.4 1.4	1550 1450		8000 10,000	0.24 0.26				T-9			T-9	32	7 PIN OCTAL	7AP		3C5GT	
3CF6	PENTODE	3.15	0.6*	HEATER	CLASS A AMPLIFIER	200	150	2.8	6200	600				Cut-off: 35 μ a @ -6.5 V.					T-5½	4	MIN. 7 PIN	7CM		3CF6	
3D6	BEAM PENTODE	1.4 2.8	0.22 0.11	FIL.	CLASS A AMPLIFIER	150	90	4.5	1	2400				14,000	0.6				T-9	26	8 PIN LOC.	6BA		3D6	
3E5	BEAM PENTODE	1.4 2.8	0.05 0.025	FIL.	CLASS A AMPLIFIER	110 110	90 7	8.1 7.0	1.5 1.3	1550 1450	110 120			11,000 11,000	0.33 0.30			Signal: 7 V. RMS Signal: 7 V. RMS		T-5½	4	MIN. 7 PIN	6BX		3E5
3E6	PENTODE	1.4 2.8	0.1 0.05	FIL.	SHARP CUT OFF AMPLIFIER	110 90	90 0	4.2 2.9	1.7 1.2	2000 1700	250 325				Cut-off: 10 μ a @ -5.5 V. Cut-off: 10 μ a @ -4.0 V.				T-9	26	8 PIN LOC.	7CJ		3E6	
3LF4	BEAM PENTODE	1.4 2.8	0.1 0.05	FIL.	CLASS A AMPLIFIER	110 110	110 110	6.6 6.6	8.5 8.5	1.1 1.1	2200 2200	100 110		8000 8000	0.4 0.33					T-9	26	7 PIN OCTAL	6BB		3LF4
3Q5GT	BEAM PENTODE	1.4 2.8	0.1 0.05	FIL.	CLASS A AMPLIFIER	110 110	110 110	6.6 6.6	8.5 8.5	1.1 1.1	2000 110			8000 8000	0.4 0.33			Signal: 3.2 V. RMS		T-9	35	7 PIN OCTAL	7AQ		3Q5GT
4BA6	PENTODE	4.2	0.45*	HEATER	CLASS A AMPLIFIER	100 250	100 100	4.4 4.2	4.300 4.400	250 1000				Cut-off: 40 μ amhos @ -20 V. Cut-off: 40 μ amhos @ -20 V.					T-5½	4	MIN. 7 PIN	7BK		4BA6	
4BE6	HEPTODE	4.2	0.45*	HEATER	CONVERTER	100 250	100 100	1.5 1.5	2.6 2.9	4.5 6.8	450 1000								T-5½	4	MIN. 7 PIN	7CH		4BE6	
4BX8	TWIN DIODE	4.5	0.6*	HEATER	CASCODE AMPLIFIER	65	1.0	9		6700				Cut-off: 10 μ amp. @ -7 V.					T-6½	8	MIN. 9 PIN	9AJ		4BX8	
4BZ8	TWIN DIODE	4.2	0.6*	HEATER	CLASS A AMPLIFIER	125	D	10		8000	5.6			Cut-off: 50 μ amhos @ -13 V.					T-6½	8	MIN. 9 PIN	9AJ		4BZ8	
4CE5	PENTODE	4.2	0.45*	HEATER	CLASS A AMPLIFIER	200	150	A	9.5	2.8	6200	600		Cut-off: 35 μ amp. @ -6.5 V.					T-5½	4	MIN. 7 PIN	7BD		4CE5	
4DK6	PENTODE	4.2	0.45*	HEATER	CLASS A AMPLIFIER	125	125	H	12	3.8	9800			Cut-off: 20 μ a @ -6.5 V.					T-5½	4	MIN. 7 PIN	7CM		4DK6	
5A58	DIODE PENTODE	4.7	0.6*	HEATER	CLASS A AMPLIFIER	200	150	A	9.5	3	6200	300		Cut-off: 10 μ a @ -8 V.					T-6½	8	MIN. 9 PIN	9DS		5A58	

* Heater warm-up time: 11 seconds.
 † Values for parallel filament.
 ‡ Bias obtained thru 100 ohm cathode resistor.
 § Bias obtained thru 68 ohm cathode resistor.
 ¶ Bias obtained thru 180 ohm cathode resistor.
 †† Values for series filament.

PRINTED IN U. S. A.

5AV8-5Y4G

TYPE	DESCRIPTION	VOLTS	FILAMENT	FLAMMENT		TYPE OF CATHODE	APPLICATION	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB	BASE	TYPE				
				AMBERS	AMBERS			SCREEN GRID VOLTS (NEG)	CONTROL GRID VOLTS (NEG)	PLATE CURRENT MA	SCREEN CURRENT MA	TRANS CONDUCTANCE	PLATE RESISTANCE OHMS	AMPLIFICATION FACTOR	LOAD MATCHING	POWER OUTPUT WATTS	MAX AC INPUT MA				MAX AC OUTPUT MA	RECIPER CONDENSER PAIR	STYLE	OUTLINE NO.
5AV8	TRIODE PENTODE	4.7 0.6*	HEATER	200	150	6	13	9.5	2.8	6200	300	5.75	19	19	450	550	250	250	8	T-6½	8	MIN. 9 PIN	9DZ	5AV8
5AW4	DIODE	5.0 4.0	FIL.	200	150	6	13	9.5	2.8	6200	300	5.75	19	19	450	550	250	250	8	T-12	68	OCTAL 5 PIN	5T	5AW4
5AX4GT	DOUBLE DIODE	5	FIL.	200	150	6	13	9.5	2.8	6200	300	5.75	19	19	350	1400	175	175	8	T-9	37	OCTAL	5T	5AX4GT
5BE8	TRIODE PENTODE	4.7 0.6*	HEATER	250	150	6	18	10	3.5	5200	400	5	40	40	350	1400	175	175	8	T-6½	8	MIN. 9 PIN	9EG	5BE8
5BS8	TWIN DIODE	5.6 0.45*	HEATER	250	150	6	18	10	3.5	5200	400	5	40	40	350	1400	175	175	8	T-5½	8	MIN. 9 PIN	9AJ	5BS8
5BT8	TWIN DIODE PENTODE	4.7 0.6*	HEATER	200	150	6	10	9.5	2.8	6200	300	5.6	38	38	350	1400	175	175	8	T-6½	8	MIN. 9 PIN	9FE	5BT8
5BZ7	TWIN TRIODE	5.6 0.45*	HEATER	200	150	6	10	9.5	2.8	6200	300	5.6	38	38	350	1400	175	175	8	T-6½	8	MIN. 9 PIN	9AJ	5BZ7
5CM6	PENTODE	4.7 0.6*	HEATER	250	250	12.5	45	12.5	49.5	5000	19.6	9.8	9.8	9.8	450	1550	250	250	8	T-6½	9	MIN. 9 PIN	9CK	5CM6
5CM8	TRIODE PENTODE	4.7 0.6*	HEATER	250	250	12.5	45	12.5	49.5	5000	19.6	9.8	9.8	9.8	450	1550	250	250	8	T-6½	8	MIN. 9 PIN	9FZ	5CM8
5T4	DOUBLE DIODE	5 2	FIL.	200	150	6	18	9.5	2.8	6200	300	5.6	38	38	350	1400	175	175	8	T-6½	8	MIN. 9 PIN	9FZ	5CM8
5U4GA	DOUBLE DIODE	5.0 3.0	FIL.	200	150	6	18	9.5	2.8	6200	300	5.6	38	38	350	1400	175	175	8	MT-10	21	5 PIN OCTAL	5T*	5T4
5W4	DOUBLE DIODE	5 1.5	FIL.	200	150	6	18	9.5	2.8	6200	300	5.6	38	38	350	1400	175	175	8	T-11	58	OCTAL 8 PIN	5T	5U4GA
5W4GT	DOUBLE DIODE	5 1.5	FIL.	200	150	6	18	9.5	2.8	6200	300	5.6	38	38	350	1400	175	175	8	MT-88	20	OCTAL	5T	5W4
5X3	DOUBLE DIODE	5 2	FIL.	200	150	6	18	9.5	2.8	6200	300	5.6	38	38	350	1400	175	175	8	T-9	37	OCTAL	5T	5W4GT
5X4G	DOUBLE DIODE	5 3	FIL.	200	150	6	18	9.5	2.8	6200	300	5.6	38	38	350	1400	175	175	8	ST-14	78	MED. 4 PIN	4C	5X3
5Y4G	DOUBLE DIODE	5 2	FIL.	200	150	6	18	9.5	2.8	6200	300	5.6	38	38	350	1400	175	175	8	ST-16	82	OCTAL	5Q	5X4G
															350	1400	125	125	8	ST-14	77	OCTAL	5Q	5Y4G

* Heater warm-up time: 11 seconds. † Triode section. ‡ Bias obtained thru 220 ohm cathode resistor. § Pin #1 has no connection.
 ‡ Bias obtained thru 180 ohm cathode resistor. † Full-wave rectifier. § Bias obtained thru 56 ohm cathode resistor. † Pentode section.
 ‡ Bias obtained thru 180 ohm cathode resistor. † Full-wave rectifier. § Bias obtained thru 68 ohm cathode resistor.

TUNG-SOL

5Y4GA-6AD6G

TYPE	DESCRIPTION	VOLTS	FILAMENT	TYPE OF CATHODE	APPLICATION	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS												BULB	BASE		
						RATE VOLTS	SCREEN GRID VOLTS (NEG)	CONTROL GRID VOLTS (NEG)	RATE CURRENT MA	SCREEN CURRENT MA	TRANS CONDUCTANCE MMHO	RESONANCE KOHM	AMPLIFICATION FACTOR	LOAD RESISTANCE OHMS	POWER OUTPUT WATTS	MAX. VOLTAGE RE-PLATE VOLTS	MAX. VOLTAGE MESHES VOLTS			RECTIFIER CONDUCTANCE INPUT	STYLE
5Y4GA	DOUBLE DIODE	5.0	2.0	FIL.	FULL-WAVE RECTIFIER											350 1400 350	125 1400 125	T-12	64 8 PIN OCTAL	5Q	5Y4GA
5Z4	DOUBLE DIODE	5	2	HEATER	FULL-WAVE RECTIFIER											350 1400 350	125 1400 125	MT-8B	20 5 PIN OCTAL	5L	5Z4
6A3	TRIODE	6.3	1	FIL.	CLASS A AMPLIFIER	250	45	60	5250	0.8	4.2	2500	3.2			350 1400 350	125 1400 125	ST-16	84 4 PIN MED.	4D	6A3
6A4/LA	PENTODE	6.3	0.3	FIL.	CLASS A AMPLIFIER	180	180	12	3.9	2200	45.5	8000	1.4			350 1400 350	125 1400 125	ST-14	78 5 PIN MED.	5B	6A4/LA
6A6	DOUBLE TRIODE	6.3	0.8	HEATER	CLASS B AMPLIFIER CLASS A AMPLIFIER	300 294	0	35F	Current for both sections	8000	8	Load is plate-to-plate				350 1400 350	125 1400 125	ST-14	78 7 PIN MED.	7B	6A6
6A7	HEPTODE	6.3	0.3	HEATER	CONVERTER	250 100	250 100	3 1.5	4.0 2.0	550 360	360 600	Both sections in parallel				350 1400 350	125 1400 125	ST-12	72 7 PIN SMALL	7C	6A7
6A8	HEPTODE	6.3	0.3	HEATER	CONVERTER	250 100	250 100	3 1.5	4.0 2.0	550 360	360 600	Both sections in parallel				350 1400 350	125 1400 125	MT-8A	18 8 PIN OCTAL	8A	6A8
6A8G	HEPTODE	6.3	0.3	HEATER	CONVERTER	250 100	250 100	3 1.5	4.0 2.0	550 360	360 600	Both sections in parallel				350 1400 350	125 1400 125	ST-12	71 8 PIN OCTAL	8A*	6A8G
6A8GT	HEPTODE	6.3	0.3	HEATER	CONVERTER	250 100	250 100	3 1.5	4.0 2.0	550 360	360 600	Both sections in parallel				350 1400 350	125 1400 125	T-9	34 8 PIN OCTAL	8A	6A8GT
6AB5	TRIODE INDICATOR	6.3	0.15	HEATER	TUNING INDICATOR													T-9	51 6 PIN SMALL	6R	6AB5
6AB6G	TRIODE PENTODE	6.3	0.5	HEATER	DIRECT-LED AMPLIFIER	250	0	34	1800	40	72	8000	3.5					T-9	51 6 PIN SMALL	6R	6AB6G
6AB7	PENTODE	6.3	0.45	HEATER	CLASS A V AMPLIFIER W	300 300	200 300	3 3	12.5 3.2	5000 700	3500 3500							ST-12	73 8 PIN OCTAL	7AU	6AB7
6AC3GT	TRIODE	6.3	0.4	HEATER	CLASS B AMPLIFIER	250	0	5F	Current and Output for 2 Tubes	10,000	8	Plate-to-Plate						T-9	35 6 PIN OCTAL	6Q	6AC3GT
6AC6GT	DOUBLE TRIODE	6.3	1.1	HEATER	DIRECT-LED AMPLIFIER	180 180	0 0	7 45	3000	18	54	4000	3.8					T-9	35 7 PIN OCTAL	7AU	6AC6GT
6AD5G	TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	2	0.9	1500	66	100							ST-12	69 6 PIN OCTAL	6Q	6AD5G
6AD6G	TRIODE INDICATOR	6.3	0.15	HEATER	TUNING INDICATOR													T-9	27 7 PIN OCTAL	7AG	6AD6G

v With fixed screen supply.

w With series screen resistor.

f Zero signal.

TUN-80L

6AE5GT-6AU4GT

TYPE	DESCRIPTION	VOLTS	FILAMENT	TYPE OF CATHODE	APPLICATION	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB	BASE						
						SCREEN GRID VOLTS	CONTROL GRID VOLTS (NEG)	PLATE CURRENT MA	SCREEN CURRENT MA	COND. ANGLE DEGREES	RESISTANCE OHMS	AMPLIFICATION	LOAD RESISTANCE OHMS	POWER OUTPUT WATTS	MAX. A.C. R.M.S. PER PLATE			MAX. R.F. PEAK TO PLATE	RECIFIER CONDENSER INPUT	STYLE	OUTLINE NO.	STYLE	TYPE
						PLATE VOLTS	CONTROL GRID VOLTS (NEG)	SCREEN CURRENT MA	SCREEN CURRENT MA	COND. ANGLE DEGREES	RESISTANCE OHMS	AMPLIFICATION	LOAD RESISTANCE OHMS	POWER OUTPUT WATTS	MAX. A.C. R.M.S. PER PLATE			MAX. R.F. PEAK TO PLATE	RECIFIER CONDENSER INPUT	STYLE	OUTLINE NO.	STYLE	TYPE
6AE5GT	TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	95	1.5	7	1200	3.5	4.2					T-9	35	6 PIN OCTAL	6AE5GT				
6AE6G	DOUBLE TRIODE	6.3	0.15	HEATER	CONTROL TUBE	250	1.5	6.5	1000	35	35	Remote Cutoff Sharp Cutoff				ST-12	69	7AH	6AE6G				
						250	1.5	4.5	950	55	55												
6AE7GT	DOUBLE TRIODE	6.3	0.5	HEATER	CLASS A AMPLIFIER	250	13.5	5	1500	9.3	14					T-9	35	8 PIN OCTAL	6AE7GT				
6AF5G	TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	180	18	7	1500	4.9	7.4					ST-12	69	6 PIN OCTAL	6AF5G				
6AH5G	BEAM PENTODE	6.3	0.9	HEATER	CLASS A AMPLIFIER	350	250	18	54	2.5	5200	33	4200	10.8		ST-16	86	6AP	6AH5G				
						125		16	10,000	4.2	42												
6AJ4	TRIODE	6.3	0.225	HEATER	GROUNDING AMPLIFIER	125									T-6½	7	MIN. 9 PIN	6AJ4					
6AJ7	PENTODE	6.3	0.45	HEATER	CLASS A AMPLIFIER	300		10	2.5	9000	1000				MT-8G	17	8 PIN OCTAL	6AJ7					
6AK7	PENTODE	6.3	0.65	HEATER	CLASS A AMPLIFIER	300	150	3	7	11,000	130		10,000	3		MT-8B	20	8Y	6AK7				
						350	250	18	54*	2.5F	5200	33	4200	10.8									
6AL6G	BEAM PENTODE	6.3	0.9	HEATER	CLASS A AMPLIFIER	250	250	14	7.2F	6000	22.5		2500	6.5		ST-16	86	6AM	6AL6G				
						365																	
6AL7GT	TRIODE INDICATOR	6.3	0.15	HEATER	TUNING INDICATOR	365 Max.									T-9	29	8 PIN OCTAL	6AL7GT					
6AM8	DIODE PENTODE	6.3	0.45*	HEATER	VIDEO DETECTOR	125	12.5	BD	3.2	7800	300				T-6½	8	MIN. 9 PIN	6AM8					
6AN6	QUADRIPOLE DIODE	6.3	0.2	HEATER	HALF-WAVE RECTIFIER										T-5½	4	MIN. 7 PIN	6AN6					
6AQ7GT	DOUBLE-DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	2	2.3	1600	44	70				T-9	35	8 PIN OCTAL	6AQ7GT					
6AU4GT	DIODE	6.3	1.8	HEATER	DAMPER SERVICE										T-9	46	6 PIN OCTAL	6AU4GT					

* Bias obtained thru 56 ohm cathode resistor.

F Zero signal.

* Heater warm-up time: 11 seconds.

Peak Plate Current per Plate: 15 Ma.
Tube Voltage Drop per Plate @ 6.0 Ma.: 9 V.

Peak Plate Current per Plate: 25 V.
Tube Voltage Drop at 350 Ma. Each Plate: 25 V.
Maximum Steady State Peak Current: 1050 Ma.

TUNG-SOL

6AV5GT-6BA5

TYPE	DESCRIPTION	VOLTS	FILAMENT	FLAMMENT		TYPE OF CATHODE		APPLICATION		TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB	BASE	TYPE
				AMBERS	AMBERS	SCREEN GRID	CONTROL GRID	PLATE CURRENT	CONV. CURR.	RES. CURR.	PLATE RES.	AMPL. FACTOR	LOAD RES.	POWER OUTPUT	M.A. I. INVERT. YOLTS	M.A. I. F. YOLTS	M.A. I. C. YOLTS	RECTIFIER COMPOSITE INPUT	STYLE			
6AV5GT	BEAM PENTODE	6.3	1.2	HEATER	200	125	BI	66	12	45	21.5	45	5500	4.5BH	Peak Plate Current: 155 ma. Peak Neg. Surge Grid 1 Voltage: -100 V. Grid 1 Current: 58 μ a. High Voltage Developed: 7 kv. Sweep Angle: 54 Degrees	T-9	31	6 PIN OCTAL	6AV5GT			
																				CLASS A AMP.	250	150
6AW7GT	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	100	0	1.4	1200	80	1200	80	1200	80	80	80	T-9	53	8 PIN OCTAL	6AW7GT			
																				CLASS A AMPLIFIER	200	150
6AW8	TRIODE PENTODE	6.3	0.6*	HEATER	200	150	A	13	3.5	4000	400	400	400	400	400	T-6½	9	MIN. 9 PIN	6AW8			
																				CLASS A AMPLIFIER	200	150
6AX6G	DOUBLE DIODE	6.3	2.5	HEATER	350	Steady State Peak Plate Current Each Plate: 600 Ma. Max. Steady State DC Output Current Each Plate: 125 Ma.	21 V.	350	1250	350	2000	350	1250	350	2000	ST-14	77	7 PIN OCTAL	6AX6G			
																				CLASS A AMPLIFIER	200	150
6AX8	TRIODE PENTODE	6.3	0.45	HEATER	150	110	K	18	3.5	4800	400	400	400	400	400	T-6½	8	MIN. 9 PIN	6AX8			
																				CLASS A AMPLIFIER	200	150
6B4G	TRIODE	6.3	1	FIL.	250	45	60	5250	0.8	4.2	2500	3.2	2500	3.2	Grid bias measured from filament center Load is plate-to-plate	ST-16	82	8 PIN OCTAL	6B4G			
																				CLASS A AMPLIFIER	200	150
6B5	DIRECT COUPLED TRIODE	6.3	0.8	HEATER	300	300	AB	0	45	8A ^b	2400	24	7000	4	Signal: 15 V. RMS	ST-14	78	MED. 0 PIN	6B5			
																				CLASS A AMPLIFIER	200	150
6B6G	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	250	2	0.9	1100	91	100	100	100	100	100	100	ST-12	71	7 PIN OCTAL	6B6G			
																				CLASS A AMPLIFIER	200	150
6B8	DOUBLE-DIODE PENTODE	6.3	0.3	HEATER	250	125	3	9	2.3	1125	600	600	600	600	Cut-off: 1000 μ mhos @ -17 V.	MT-8A	18	8 PIN OCTAL	6B8			
																				CLASS A AMPLIFIER	200	150
6B8G	DOUBLE-DIODE PENTODE	6.3	0.3	HEATER	250	125	3	10	2.3	1325	600	600	600	600	Cut-off: 1325 μ mhos @ -21 V.	ST-12	71	8 PIN OCTAL	6B8G			
																				CLASS A AMPLIFIER	200	150
6B8GT	DOUBLE-DIODE PENTODE	6.3	0.3	HEATER	250	125	3	10	2.3	1325	600	600	600	600	Cut-off: 1325 μ mhos @ -21 V.	T-9	39	8 PIN OCTAL	6B8GT			
																				CLASS A AMPLIFIER	200	150
6BA5	PENTODE	6.3	0.15	HEATER	100	100	4.8	1.25	3300	150	150	150	150	150	Cutoff: 10 μ a @ -90 V.	T-3	1	SUB. MIN. 5 PIN	6BA5			
																				CLASS A AMPLIFIER	200	150

SAME CHARACTERISTICS AS TYPE 6B8GT

* Heater warm-up time: 11 seconds. ^b Triode unit. ^k Bias obtained thru 120 ohm cathode resistor.
^e Pentode unit. ^a Grid #1 resistor = 0.22 meg. ^x Bias obtained thru 180 ohm cathode resistor.

6BD5GT-6C5GT

TYPE	DESCRIPTION	VOLTS	FLAMMENT	APPLICATION		CONTROL GRID (VOLTS NEG)		SCREEN GRID (VOLTS NEG)		SCREEN CURRENT		TRANSFORMER COEFFICIENT		RESISTANCE FACTOR		AMPLIFICATION FACTOR		LOAD RESISTANCE		POWER OUTPUT		RECTIFIER CHARACTERISTICS		BULB		BASE
				TYPE OF CATHODE	ANODES	PLATE POS. SURG.	PLATE CURR. MA	CONTROL GRID (VOLTS NEG)	SCREEN GRID (VOLTS NEG)	PLATE CURR. MA	SCREEN CURR. MA	TRANSFORMER COEFFICIENT	RESISTANCE FACTOR	AMPLIFICATION FACTOR	LOAD RESISTANCE	POWER OUTPUT	MAX. PEAK-TO-PEAK VOLTAGE	MAX. DC OUTPUT MA	RECYCLING	CONSIDER TRUOT	STYLE	OUTLINE NO.	STYLE			
6BD5GT	BEAM PENTODE	6.3	0.9	HEATER	HORIZONTAL DEFLECTION AMPLIFIER	200	200	12	5000	Peak Neg. Surge Grid 1 Voltage: -200 V. Plate and Grid 2 Supply Voltage DC: 310 V. DC Cathode Current: 90 ma. DC Cathode Voltage (approx): 2500 V.	18	18	5000	5.0	40	40	10 amp. @ -12 V. Cut-off: 10 amp. @ -10 V.	8	MIN. 9 PIN	9EG	8	MIN. 9 PIN	9EG	6 PIN OCTAL	6CK	6BD5GT
6BE8	TRIODE	6.3	0.45	HEATER	CLASS A AMPLIFIER	150	110	1	8500	3.0	400	5.0	40	40	40	10 amp. @ -12 V. Cut-off: 10 amp. @ -10 V.	8	MIN. 9 PIN	9EG	8	MIN. 9 PIN	9EG	6 PIN OCTAL	6BE8		
6BE8A	TRIODE	6.3	0.45*	HEATER	CLASS A AMPLIFIER	150	110	1	8500	3.5	5200	5.0	40	40	40	10 amp. @ -12 V. Cut-off: 10 amp. @ -10 V.	8	MIN. 9 PIN	9EG	8	MIN. 9 PIN	9EG	6 PIN OCTAL	6BE8A		
6BK7	TWIN TRIODE	6.3	0.45	HEATER	CLASS A AMPLIFIER	150	110	1	8500	3.5	5200	5.0	40	40	40	10 amp. @ -12 V. Cut-off: 10 amp. @ -10 V.	8	MIN. 9 PIN	9AJ	8	MIN. 9 PIN	9AJ	6 PIN OCTAL	6BK7		
6BL4	DIODE	6.3	3.0	HEATER	HALF WAVE RECTIFIER	250	250	1	2000	14	28	12	12	12	12	100 amp. @ -7 V. Cut-off: 100 amp. @ -35 V.	9	MIN. 9 PIN	9AJ	9	MIN. 9 PIN	9AJ	6 PIN OCTAL	6BL4		
6BL7GT	DOUBLE TRIODE	6.3	1.5	HEATER	CLASS A AMPLIFIER	250	250	1	7000	2.15	15	15	15	15	15	50 amp. @ -25 V.	9	MIN. 9 PIN	9BD	9	MIN. 9 PIN	9BD	6 PIN OCTAL	6BL7GT		
6BN7	DOUBLE TRIODE	6.3	0.75	HEATER	CLASS A AMPLIFIER	120	250	1	2000	14	28	12	12	12	12	100 amp. @ -7 V. Cut-off: 100 amp. @ -35 V.	9	MIN. 9 PIN	9AJ	9	MIN. 9 PIN	9AJ	6 PIN OCTAL	6BN7		
6BQ6GA	PENTODE	6.3	1.2	HEATER	HORIZONTAL DEFLECTION AMPLIFIER	250	150	22.5	5500	2.1	5500	20	20	20	20	1.0 Ma. @ -46 V.	11	MIN. 9 PIN	6AM	11	MIN. 9 PIN	6AM	6 PIN OCTAL	6BQ6GA		
6BT8	TWIN DIODE PENTODE	6.3	0.45	HEATER	CLASS A AMPLIFIER	200	150	1	6200	3.00	300	300	300	300	10 amp. @ -8 V.	8	MIN. 9 PIN	9FE	8	MIN. 9 PIN	9FE	6 PIN OCTAL	6BT8			
6BY5G	DOUBLE DIODE	6.3	1.6	HEATER	FULL WAVE RECTIFIER	380	1400	175	380	1400	175	175	175	175	32 V.	14	MIN. 9 PIN	6CN	14	MIN. 9 PIN	6CN	6 PIN OCTAL	6BY5G			
6BY5GA	DOUBLE DIODE	6.3	1.6	HEATER	FULL WAVE RECTIFIER	380	1400	175	380	1400	175	175	175	175	32 V.	12	MIN. 9 PIN	6CN	12	MIN. 9 PIN	6CN	6 PIN OCTAL	6BY5GA			
6C5	TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	8	8	2000	10	20	20	20	20	1.0 Ma. @ -46 V.	16	MIN. 9 PIN	6Q	16	MIN. 9 PIN	6Q	6 PIN OCTAL	6C5			
6C5G	TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	8	8	2000	10	20	20	20	20	1.0 Ma. @ -46 V.	12	MIN. 9 PIN	6Q	12	MIN. 9 PIN	6Q	6 PIN OCTAL	6C5G			
6C5GT	TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	8	8	2000	10	20	20	20	20	1.0 Ma. @ -46 V.	32	MIN. 9 PIN	6Q	32	MIN. 9 PIN	6Q	6 PIN OCTAL	6C5GT			

* Heater warm-up time: 11 seconds. M Triode section. AU Bias obtained thru 68 ohm cathode resistor.
 † Bias obtained thru 56 ohm cathode resistor. A - 8 volts @ I_b = 10 μA.

SAME CHARACTERISTICS AS TYPE 6C5

SAME CHARACTERISTICS AS TYPE 6C5

TUNG-SOL

6C6-6D8G

TYPE	DESCRIPTION	VOLTS	AMPERES	FILAMENT	TYPE OF CATHODE	APPLICATION	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB	BASE			
							PLATE SUPPLY (V)	SCREEN SUPPLY (V)	CONTROL GRID (V)	PLATE CURRENT (mA)	SCREEN CURRENT (mA)	CONTROL GRID CURRENT (mA)	TRANSFORMER TAP (V)	RESISTANCE (Ω)	AMPLIFICATION FACTOR	LOAD RESISTANCE (Ω)			POWER OUTPUT (W)	MAX. A.C. VOLTAGE (V)	MAX. R.F. VOLTAGE (V)
6C6	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	3	2	0.5	1200	1000	1000	1000	MIN.	Cut-off: at -7 V.	ST-12C	76	SMALL 6 PIN	6F	6C6
						100	100	3	2	0.5	1185	1000	1000	MIN.	Cathode res. 10,000 ohms Cathode res. 25,000 ohms.						
6C7	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250		9	4.5		1250	16	20			ST-12C	75	SMALL 7 PIN	7G	6C7	
6C8G	DOUBLE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250		4.5	3.2		1600	22.5	36		Single section	ST-12	71	8 PIN OCTAL	8G	6C8G	
6CA5	PENTODE	6.3	1.2	HEATER	CLASS A AMPLIFIER	125	125	4.5	37*	4.0*	9200	15	4500	1.5			T-5½	9	MIN. 7 PIN	7CV	6CA5
						110	110	4.0	32*	3.5*	8100	16	3500	1.1							
6CD6G	BEAM PENTODE	6.3	2.5	HEATER	HORIZONTAL DEFLECTION COIL DRIVER FOR TV RECEIVERS	DC Plate Supply Voltage: 350 V. From DC Power Supply: 6W4CCT. From DC Power Supply: 6X4CCT. 150 V. Total Supply Voltage: 500 V. Grid 2 Voltage: 170 V. Cathode Bias Resistor: 300 ohms Peak Positive-Pulse Plate Output Voltage approx. for Kinescope Anode Current of 0 μa: 5500 V. Grid 1 Input Voltage: 75 V. Peak-to-Peak Smooth Component: 75 V. Neg. Peak Component: 55 V. Max. Grid 1 Circuit Resistance: 1 Meg. DC Plate Current: 92 ma. DC Grid 2 Current: 15 ma.															
6CG8	TRIODE PENTODE	6.3	0.45	HEATER	CONVERTER	100	150	P	8.5	5800	6.0	40	40	40	40	40	T-6½	8	MIN. 9 PIN	9FA	6CG8
						250	250		7.1	4600	7.50										
6CL5	PENTODE	6.3	2.5	HEATER	HORIZONTAL DEFLECTION AMPLIFIER	Pentode Operation With E _b = 175 V., E _{c2} = -40 V., E _{c1} = -40 V.															
						100	100	3	7.0	6500	6.0									T-12	62
6CR8	TRIODE PENTODE	6.3	0.45*	HEATER	CLASS A AMPLIFIER	125	125	2	12	4000	5.5	22	22	22	22	22	T-6½	8	MIN. 9 PIN	9GJ	6CR8
						100	100	3	8.2	2	1600	800									
6D6	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	3	8.2	2	1600	800					ST-12C	76	SMALL 6 PIN	6F	6D6
						100	100	3	8	2.2	1500	250									
6D7	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	3	2	0.5	1225					ST-12C	75	SMALL 7 PIN	7H	6D7	
						100	100	3	3.5	2.6	550	400									
6D8G	HEPTODE	6.3	0.15	HEATER	CONVERTER	250	100	3	3.5	2.6	550	400			ST-12	71	8 PIN OCTAL	8A	6D8G		

* Heater warm-up time: 11 seconds.

† Zero signal.

‡ Triode unit.

§ Pentode unit.

¶ Bias obtained thru 100 ohm cathode resistor.

TUNG-SOL

6DB5-6G6G

TYPE	DESCRIPTION	VOLTS	FILAMENT AMPERES	TYPE OF CATHODE	APPLICATION	SCREEN GRID VOLTS	CONTROL GRID VOLTS (NEG)	PLATE CURRENT MA	SCREEN CURRENT MA	TUBE CONDUCTANCE MHO	RESISTANCE PLATE TO SCREEN OHMS	AMPLIFICATION FACTOR	LOAD RESISTANCE OHMS	POWER OUTPUT WATTS	MAX. DC PLATE VOLTAGE V	MAX. DC CONTROL GRID VOLTAGE V	RECTIFIER COMPRESSOR INPUT	STYLE	OUTLINE NO.	STYLE	BASE	
																						TYPE
6DB5	BEAM PENTODE	6.3	1.2	HEATER	CLASS A AMPLIFIER	110 125	7.5 46F	4F 8000	4F 2.2F	13 8000	28							T-6½	10B	9CR	6DB5	
6DB6	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	150	150	5.8	6.6	2050	50								T-5½	4	7CM	6DB6
6DN6	BEAM PENTODE	6.3	2.5	HEATER	HORIZONTAL DEFLECTION AMPLIFIER	Pentode-Operation With Es = 125 V. Ea = -18 V.	70	6.3	9000	4.0									T-12	62	5BT	6DN6
6DQ6	BEAM PENTODE	6.3	1.2	HEATER	HORIZONTAL DEFLECTION AMPLIFIER														T-12	56	6AM	6DQ6
6E6	DOUBLE TRIODE	6.3	0.6	HEATER	CLASS A AMPLIFIER	250	27.5	18	2	1700	35	6	14,000	1.6					ST-14	77	7B	6E6
6E7	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	3	2	1600	800	1280							ST-12C	75	7H	6E7
6EF6	PENTODE	6.3	0.9	HEATER	VERTICAL DEFLECTION AMPLIFIER	250	250	18	2	5000									T-9	37	7S	6EF6
6F5G	TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	2	0.9		1500	66	100							ST-12	71	5M	6F5G
6F5GT	TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	100	1	0.4		1150	85	100							T-9	33	5M	6F5GT
6F7	TRIODE PENTODE	6.3	0.3	HEATER	TRIODE UNIT AS CLASS A AMPLIFIER	100	3F	3.5		500	16	8							ST-12	72	7E	6F7
6F8G	DOUBLE TRIODE	6.3	0.6	HEATER	CLASS A AMPLIFIER	250	100	3	1.5	1100	850	900							ST-12	71	8G	6F8G
6G6G	PENTODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	180	180	9	2.5F	2300	175	400	10,000	1.1					ST-12	69	7S	6G6G

F Zero signal.

TUNG-SOL

6G6GT-6N4

TYPE	DESCRIPTION	VOLTS	FILAMENT	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BASE								
				AMMERS	TYPE OF CATHODE	APPLICATION	PLATE VOLTS	SCREEN AND CONTROL GRID VOLTS (NEG)	PLATE CURRENT	SCREEN CURRENT	TRANSFORMER CONDUCTANCE	PLATE RESISTANCE	AMPLIFICATION		LOAD RESISTANCE	POWER OUTPUT	RECTIFIER CONDENSER INPUT	STYLE	OUTLINE NO.	STYLE	BASING	TYPE
6G6GT	PENTODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	180	180	9	15 ^f	2.5 ^f	2300	175	400	10,000	1.1	Signal: 6.4 V. RMS	T-9	35	7 PIN OCTAL	7S	6G6GT	
6J7	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER BIAS DETECTOR																	6J7
6J7G	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER																	6J7G
6J7GT	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER BIAS DETECTOR	250	100	3	2	0.5	1225	1000 ^z				Cutoff: at -7 V.						6J7GT
6J8G	TRIODE HEPTODE	6.3	0.3	HEATER	CONVERTER	250	100	3	1.3	3.5	290	2500										6J8G
6K5G	TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	3	1.1	1400	50	70										6K5G
6K7	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	125	3	10.5	2.6	1650	600				Cutoff: 2 μ hos @ -52 V. Cutoff: 2 μ hos @ -38 V.						6K7
6K7G	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	125	3	10.5	2.6	1650	600				Cutoff: 2 μ hos @ -52 V. Cutoff: 2 μ hos @ -38 V.						6K7G
6K8	TRIODE HEPTODE	6.3	0.3	HEATER	CONVERTER	100	100	1	9.5	2.7	1650	150										6K8
6K8G	TRIODE HEPTODE	6.3	0.3	HEATER	CONVERTER																	6K8G
6K8GT	TRIODE HEPTODE	6.3	0.3	HEATER	CONVERTER	250	100	3	2.5	6	350	600				Triode plate: 100 V. 3.8 ma. Triode grid: 50 000 ohms, 0.15 ma.						6K8GT
6L5G	TRIODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	250	100	3	2.3	6.2	325	400										6L5G
6L7G	HEPTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	3	5.3	6.5	1100	600	670									6L7G
6N4	TRIODE	6.3	0.2	HEATER	UHF AMPLIFIER	180		3.5	12		6000	5.4	32									6N4

f Zero signal. z Minimum value.

TUNG-SOL

6P5GT-6S7

TYPE	DESCRIPTION	FILAMENT		APPLICATION		TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS												BULB		BASE				
		VOLTS	AMPERES	TYPE OF CATHODE		RATE VOLTAGE	CONTROL GRID VOLTAGE (VDC)	SCREEN CURR. MA	PLATE CURR. MA	SCREEN CURR. MA	CONDUCTANCE (MHMS)	TRANSFORMER RESISTANCE (OHMS)	AMPLIFICATION FACTOR	LOAD RESISTANCE (OHMS)	POWER OUTPUT (WATT)	MAX. CATHODE VOLTAGE	MAX. PEAK TO-PK. VOLTAGE	RECTIFIER, CONDENSER INPUT	MAX. DC CURRENT (MA)		STYLE	OUTLINE NO.	STYLE	
				TYPE	TYPE																			
6P5GT	TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	13.5	5	1450	9.5	13.8									T-9	35	6 PIN OCTAL	6Q	6P5GT
6P7G	TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	3	6.5	1.5	1100	900									ST-12	71	8 PIN OCTAL	7U	6P7G
	PENTODE					100	3	3.5	450	8														
6Q6G	DIODE TRIODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	250	3	1.2	1050	65										ST-12	71	8 PIN OCTAL	6Y	6Q6G
	TRIODE					135	1.5	0.9	1000	65														
6Q7	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER														MT-8A	18	7 PIN OCTAL	7V	6Q7	
6Q7G	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER														ST-12	71	7 PIN OCTAL	7V	6Q7G	
6Q7GT	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	3	1.0	1200	58	70									T-9	34	7 PIN OCTAL	7V	6Q7GT
	TRIODE					100	1.5	0.8	1200	58	70													
6R6G	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	3	1.7	1450	1160								ST-12	71	7 PIN OCTAL	6AW	6R6G	
6R7	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER														MT-8A	18	7 PIN OCTAL	7V	6R7	
6R7G	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	9	9.5	1900	8.5	16									ST-12	71	7 PIN OCTAL	7V	6R7G
	TRIODE																							
6R7GT	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	9	9.5	1900	8.5	16									T-9	33	7 PIN OCTAL	7V	6R7GT
	TRIODE																							
6R8	TRIPLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	9	9.5	1900	8.5	16	10 000	0.3						T-6½	8	MIN. 9 PIN	9E	6R8	
6S4	TRIODE	6.3	0.6	HEATER	VERTICAL TUNING IN-TUNING AMPLIFIER IN TV RECEIVERS														T-6½	9	MIN. 9 PIN	9AC	6S4	
6S7	PENTODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	250	100	3	8.5	2	1750	1000								MT-8G	19	7 PIN OCTAL	7R	6S7

SAME CHARACTERISTICS AS TYPE 6Q7GT

SAME CHARACTERISTICS AS TYPE 6Q7GT

SAME CHARACTERISTICS AS TYPE 6R7GT

DC Plate Voltage: 500 Max.
 Cathode-Bias Resistor: 820 ohms
 Grid Input Voltage (approx.):
 Peak-to-Peak Sawtooth Component: 60 V.
 Negative Peak Component: 48 V.
 DC Plate Current: 18 ma.

Plate Output (approx.):
 Peak-to-Peak Sawtooth Component: 350 V.
 Peak Positive-Pulse Component: 800 V.
 Min. Cathode-Bias Resistance: 270 ohms
 Max. Grid Circuit Resistance: 2.2 meg.

Cutoff: 10 μmhos @ -38.5 V.

TUNG-SOL

6S7G-6SN7GTA

TYPE	DESCRIPTION	VOLTS	FILAMENT	AMPS	TYPE OF CATHODE	APPLICATION	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB	BASE	TYPE									
							SCREEN GRID (VOLTS NEG)	CONTROL GRID (VOLTS NEG)	PLATE CURRENT	SCREEN CURRENT	TRANS CONDUCTANCE (MHO)	RESONANT FREQUENCY (MC)	AMPLIFICATION FACTOR	LOAD RESISTANCE (OHMS)	POWER OUTPUT (WATTS)	MAX. DC. VOLTAGE (VOLTS)				MAX. PEAK-TO-PEAK CURRENT (MA)	RECTIFIER CONDENSER INPUT (MICROFARADS)	STYLE	OUTLINE NO.	STYLE				
6S7G	PENTODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	250	100	3	8.5	2	1750	1000						7R	7R	7R	7R	7R	7R	7R	6S7G			
6S8GT	TRIPLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	2	0.9	100	1100	91	100												8R	8R	6S8GT	
6SA7GT	HEPTODE	6.3	0.3	HEATER	CONVERTER AD	250	100	2	3.5	8.5	450	1000														8R	8R	6SA7GT
6SB7Y	HEPTODE	6.3	0.3	HEATER	CONVERTER AD	250	100	1	3.8	10	950															8R	8R	6SB7Y
6SC7GT	DOUBLE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	2	2		1325	53	70													8R	8R	6SC7GT
6SD7GT	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	125	2	9.5	3	4250	700														8R	8R	6SD7GT
6SE7GT	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	2	5.7	2	3350	250														8R	8R	6SE7GT
6SF7	DIODE PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	4.5	0.9		1500															8R	8R	6SF7
6SG7GT	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	1	12.4	3.3	2050	0.7														8R	8R	6SG7GT
6SH7GT	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	150	2.5	9.2	3.4	4000	1000														8R	8R	6SH7GT
6SH7L	PENTODE	6.3	0.3	HEATER	RF AMPLIFIER	250	150	1	10.8	4.1	4900	900														8R	8R	6SH7GT
6SJ7	PENTODE	6.3	0.3	HEATER	RF AMPLIFIER	250	150	1	10.8	4.1	4900	900														8R	8R	6SJ7
6SJ7GT	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	3	0.8	1450	1000 ^z															8R	8R	6SJ7GT
6SN7GT	DOUBLE TRIODE	6.3	0.6	HEATER	CLASS A AMPLIFIER	250	100	3	2.9	0.9	1575	700														8R	8R	6SN7GT
6SN7GTA	DOUBLE TRIODE	6.3	0.6	HEATER	CLASS A AMPLIFIER	250	100	0	10	3000	6.7	20														8R	8R	6SN7GTA

SAME CHARACTERISTICS AS TYPE 6SJ7GT

Cutoff: at -9 V.

Each Section

Each Section

Each Section

^z Minimum value.

^{AD} Separate excitation.

6SR7-6W5G

TYPE	DESCRIPTION	FILAMENT		TYPE OF CATHODE	APPLICATION	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB	BASE				
		AMPERES	VOLTS			SCREEN GRID VOLTS (NEG.)	CONTROL GRID VOLTS (NEG.)	PLATE CURRENT MA	SCREEN CURRENT MA	TRANS CONDUCTANCE	RESISTANCE MEGS	AMPLIFICATION FACTOR	LOAD RESISTANCE	POWER OUTPUT	MAX. C. VOLT. MR. MAX. MR. MAX. AVERAGE VOLTS			RECTIFIER CONVERTER INPUT	STYLE	OUTLINE NO.	STYLE
6SR7	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	9	9.5	1900	8.5	16						MT-8	17	8 PIN OCTAL	8Q	6SR7
6SR7GT	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	9	9.5	1900	8.5	16						T-9	35	8 PIN OCTAL	8Q	6SR7GT
6T4	TRIODE	6.3	0.225	HEATER	REF. TV. OSCILLATOR	80		18	7000	13							T-5½	3	MIN. 7 PIN	7DK	6T4
6T8	TRIPLE DIODE TRIODE	6.3	0.45	HEATER	CLASS A AMPLIFIER	250 100	3 1	0.8	1200 1300	58 54	70 70	Average Diode Current with 5 V. DC Applied = 20 Ma.					T-6½	8	MIN. 9 PIN	9E	6T8
6U6GT	BEAM PENTODE	6.3	0.75	HEATER	CLASS A AMPLIFIER	200	135	14	55	3	6200	20	3000	5.5			T-9	35	7 PIN OCTAL	7AC	6U6GT
6SV7	DIODE PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	150	1	7.5	2.8	3600	1500					MT-8	17	8 PIN OCTAL	7AZ	6SV7
6SZ7	DOUBLE DIODE TRIODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	250	3	1	1200	58	70						MT-8G	17	8 PIN OCTAL	8Q	6SZ7
6T5	TRIODE INDICATOR	6.3	0.3	HEATER	TUNING INDICATOR												T-9	51	SMALL 9 PIN	6R	6T5
6T7G	DOUBLE DIODE TRIODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	250 135	3 1.5	1.2 0.9	1050 1000	62 65	65						ST-12	71	7 PIN OCTAL	7V	6T7G
6U4GT	DIODE	6.3	1.2	HEATER	HALF WAVE RECTIFIER												T-9	37	5 PIN OCTAL	4CG	6U4GT
6U7G	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	3	8.2	2	1600	800					ST-12C	75	7 PIN OCTAL	7R	6U7G
6V7G	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250 180 135	20 13.5 10.5	8 6 3.7	1100 975 750	7.5 8.5 11	8.3 8.3 8.3	20,000 20,000 25,000	0.35 0.16 0.075				ST-12	71	7 PIN OCTAL	7V	6V7G
6V8	TRIPLE DIODE TRIODE	6.3	0.45	HEATER	CLASS A AMPLIFIER	250	3	1.0	1200	58	70						T-6½	8	MIN. 9 PIN	9AH	6V8
6W5G	DIODE	6.3	0.9	HEATER	FULL WAVE RECTIFIER												ST-12	69	6 PIN OCTAL	6S	6W5G

SAME CHARACTERISTICS AS TYPE 6SR7

Target: 250 V. Max. Eg: 22 for Max. Illumination

Plate: 250 V. thru 1 Meg. 3 Ma. Eg: 0 for Min. Illumination

Tube Voltage Drop @ 250 Ma.: 21 V. DC Output Potential: 335 V.

Cutoff: 2 μmhos @ -50 V.

TUNG-SOL

6W7G-7AJ7

TYPE	DESCRIPTION	VOLTS	FILAMENT	APPLICATION				TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB	BASE	TYPE			
				AMPS	TYPE OF CATHODE	SCREEN GRID	CONTROL GRID	PLATE CURRENT	SCREEN CURRENT	TRANS. CONDUCTANCE	PLATE RESISTANCE	APPROX. FACTOR	LOAD RESONANCE	POWER OUTPUT	MAX. PEAK ANGLE	MAX. DC OUTPUT MA.	RECTIFIER CONVERSION INPUT				STYLE	OUTLINE NO.	STYLE
6W7G	PENTODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	250	100	3	2	0.5	1225	1500						ST-12	71	7 PIN OCTAL	7R	6W7G	
6Y3G	DIODE	6.3	0.7	HEATER	HALF-WAVE RECTIFIER										5000			7.5	ST-12	71	8 PIN OCTAL	4AC	6Y3G
6Y5	DOUBLE DIODE	6.3	0.8	HEATER	FULL WAVE RECTIFIER										350	1250	50		ST-12	70	SMALL 6 PIN	6J	6Y5
6Y7G	DOUBLE TRIODE	6.3	0.6	HEATER	CLASS B AMPLIFIER	250	0	0	10.6F 7.6F	Current and Output for Both Sections			14,000	8.0					ST-12	69	8 PIN OCTAL	8B	6Y7G
6Z7G	DOUBLE TRIODE	6.3	0.3	HEATER	CLASS B AMPLIFIER	180	0	0	8.4F 6F	Current and Output for Both Sections			12,000	4.2					ST-12	69	8 PIN OCTAL	8B	6Z7G
6ZY5G	DOUBLE DIODE	6.3	0.3	HEATER	FULL WAVE RECTIFIER					Peak Plate Current per Tube: 120 Ma.					450	1250	40		ST-12	69	6 PIN OCTAL	6S	6ZY5G
7A4	TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	8	9	20	2600	7.7	20							T-9	26	8 PIN LOC.	5AC	7A4
7A5	BEAM PENTODE	6.3	0.75	HEATER	CLASS A AMPLIFIER	90	10	10	20	3000	6.7	20							T-9	30	8 PIN LOC.	6AA	7A5
7A6	DOUBLE DIODE	6.3	0.15	HEATER	RECTIFIER	110	110	7.5	41*	3.0F	5800	16			2500	1.5			T-9	26	8 PIN LOC.	7AJ	7A6
7A7	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	3	9.2	2.6	2000	800							T-9	26	8 PIN LOC.	8V	7A7
7AB7	PENTODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	100	100	1	1.3	4	2350	120							T-9	26	8 PIN LOC.	8V	7A7
7AD7	PENTODE	6.3	0.6	HEATER	CLASS A AMPLIFIER	250	100	2	4	1.3	1800	500							T-9	26	7 PIN LOC.	8B0	7AB7
7AF7	DOUBLE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	300	150	0	28	7	9500	300							T-9	37	8 PIN LOC.	8V	7AD7
7AF7	DOUBLE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	10	9			2100	7.6	16						T-9	26	8 PIN LOC.	8AC	7AF7
7AG7	PENTODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	250	250	0	6	2	4200	750							T-9	26	8 PIN LOC.	8V	7AG7
7AH7	PENTODE	6.3	0.15	HEATER	REMOTE CUTOFF AMPLIFIER	250	250	0	6.8	1.9	3300	1000							T-9	26	8 PIN LOC.	8V	7AH7
7AJ7	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	150	100	1	5.7	1.8	2275	400							T-9	32	8 PIN LOC.	8V	7AH7
7AJ7	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	3	2.2	0.7	1575	1000							T-9	26	8 PIN LOC.	8V	7AJ7

* Fixed bias not recommended, cathode bias: 250 ohms.

† Zero signal.

7B4-7Q7

TYPE	DESCRIPTION	FILAMENT		TYPE OF CATHODE			APPLICATION	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS							BULB		BASE								
		AMPERES	VOLTS	AMPS	TYPE	OF		GRID	SCREEN GRID	CONTROL GRID	PLATE CURRENT	SCREEN CURRENT	CONDUCTANCE	RESISTANCE	AMPLIFICATION FACTOR	LOAD RESONANT FREQUENCY		POWER OUTPUT	MAX. PEAK TO-PEAK VOLTAGE	RECTIFIER CONDENSER INPUT	MAX. D.C. OUTPUT (MA)	STYLE	OUTLINE NO.	STYLE	
7B4	TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	2	0.9	1500	66	100									T-9	26	8 PIN LOC.	SAC	7B4	
7B5	PENTODE	6.3	0.4	HEATER	CLASS A AMPLIFIER	250	21	28.5	4.0	2100	110										T-9	30	8 PIN LOC.	6AE	7B5
						100	7	9	1.6	1500	104	9000	4.5	12,000	0.35										
7B6	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250		0.9	1100	91	100										T-9	26	8 PIN LOC.	8W	7B6
						100	1	0.4	900	110	100														
7B7	PENTODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	250	3	8.5	1.7	1750	750										T-9	26	8 PIN LOC.	8V	7B7
						100	3	8.2	1.8	1675	300	Cut-off: 10 μ hos at -40 V.													
7B8	HEPTODE	6.3	0.3	HEATER	CONVERTER	250	3	3.5	2.7	550	360										T-9	26	8 PIN LOC.	8X	7B8
						100	50	1.5	1.1	1.3	360	600	Egs: 250 V, thru 20,000 ohms Egs: 100 V.												
7C6	DOUBLE DIODE TRIODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	250	1	1.3	1000	100	100									T-9	26	8 PIN LOC.	8W	7C6	
7E5	TRIODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	180	3	5.5	3000	12	36									T-9	30	8 PIN LOC.	8BN.	7E5	
7E6	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	9	9.5	1900	8.5	16									T-9	26	8 PIN LOC.	8W	7E6	
7E7	DOUBLE DIODE PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	3	7.5	1.6	1300	700								T-9	26	8 PIN LOC.	8AE	7E7	
7G7	PENTODE	6.3	0.45	HEATER	CLASS A AMPLIFIER	250	100	2	6	2	4500	800								T-9	26	8 PIN LOC.	8V	7G7	
7G8	DOUBLE TETRODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	2.5	4.5	0.8	2100	225									T-9	24	8 PIN LOC.	8BV	7G8
						Cutoff: 2 μ hos at -42.5 V.																			
7H7	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	150	A	10	3.2	4000	800									T-9	26	8 PIN LOC.	8V	7H7
						100	0	7	2.6	4000	350	Cut-off: 35 μ hos at -19 V. Cut-off: 35 μ hos at -12 V.													
7J7	TRIODE HEXODE	6.3	0.3	HEATER	CONVERTER	250	100	3	1.4	2.8	290	1500								T-9	26	8 PIN LOC.	8BL	7J7	
7K7	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	2	2.3	1600	44	70									T-9	26	8 PIN LOC.	8BF	7K7	
7L7	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	1.5	4.5	1.5	3100	1000									T-9	26	8 PIN LOC.	8V	7L7
						100	2	3.5	8.5	550	1000														
7Q7	HEPTODE	6.3	0.3	HEATER	CONVERTER	250	100	2	3.3	8.3	523	500								T-9	26	8 PIN LOC.	8AL	7Q7	

* Bias obtained thru 180 ohm cathode resistor.

TUNG-SOL

7R7-10C8

TYPE	DESCRIPTION	VOLTS	FILAMENT	TYPE OF CATHODE	APPLICATION	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB	BASE							
						AMBERS	SCREEN GRID VOLTS (NEG)	CONTROL GRID VOLTS (NEG)	PLATE CURRENT MA	SCREEN CURRENT MA	CONDUCTANCE OHMS	TRANS CONDUCTANCE OHMS	RESISTANCE OHMS	AMPLIFICATION	FACTORIZATION			LOAD RESISTANCE OHMS	POWER OUTPUT WATTS	MAX. FREQ. VOLTS	MAX. FREQ. VOLTS	MAX. FREQ. VOLTS	RECTIFIER CATHODE UNIT	STYLE
7R7	DOUBLE DIODE PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	1	5.7	2.1	3200	1000								T-9	26	8 PIN LOC.	8AE	7R7
7S7	TRIODE- HEXODE	6.3	0.3	HEATER	CONVERTER TRIODE UNIT	250	100	2	1.8	3	525	1250	Triode Plate: 250 V. thru 20,000 ohms 5 Ma. Triode Grid: 50,000 ohms 0.5 Ma.							T-9	26	8 PIN LOC.	8BL	7S7
7T7	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	150	1	10.8	4.1	4900	900								T-9	26	8 PIN LOC.	8V	7T7
7W7	PENTODE	6.3	0.45	HEATER	CLASS A AMPLIFIER	300	150	AV	10	3.9	5800	300								T-9	26	8 PIN LOC.	8BJ	7W7
7X6	DOUBLE DIODE	6.3	1.2	HEATER	HALF-WAVE RECTIFIER								Max. Steady State Peak Plate Current: 450 Ma.							T-9	30	8 PIN LOC.	7AJ	7X6
7Y4	DOUBLE DIODE	6.3	0.5	HEATER	FULL-WAVE RECTIFIER								Peak Plate Current per plate: 210 Ma.							T-9	26	8 PIN LOC.	5AB	7Y4
7Z4	DOUBLE DIODE	6.3	0.5	HEATER	FULL-WAVE RECTIFIER								Peak Plate Current: 300 Ma.							T-9	30	8 PIN LOC.	5AB	7Z4
8BH8	TRIODE PENTODE	8.4	0.45*	HEATER	CLASS A AMPLIFIER	200	125	R	15	3.4	7000	150								T-6½	9	9 PIN	9DX	8BH8
8BN8	DOUBLE DIODE TRIODE	8.4	0.45*	HEATER	CLASS A AMPLIFIER	250	100	3	1.5	1.6	3500	21	Cut-off: 100 μ amp. @ -8 V. Cut-off: 100 μ amp. @ -14 V.	17					T-6½	9	MIN. 9 PIN	9ER	8BN8	
8SN7GTB	DOUBLE TRIODE	8.4	0.45*	HEATER	CLASS A AMPLIFIER	250	90	8	9	10	2600	7.7	Cut-off: 10 μ amp. @ -2.5 V. Cut-off: 10 μ amp. @ -5.5 V.	20					T-9	35	8 PIN OCTAL	8BD	8SN7GTB	
9CL8	TRIODE TETRODE	9.5	0.3	HEATER	CLASS A AMPLIFIER	125	125	K	15	12	8000	5								T-6½	8	MIN. 9 PIN	9FX	9CL8
9UBA	TRIODE PENTODE	9.45	0.3	HEATER	CLASS A AMPLIFIER	150	110	H	10	3.5	5200	400								T-6½	8	MIN. 9 PIN	9AE	9UBA
9X8	TRIODE PENTODE	9.5	0.3*	HEATER	OSCILLATOR MIXER	150	150	D	8.5	7.7	5800	6.9	Cut-off: 10 μ amp. @ -10 V. Cut-off: 10 μ amp. @ -10 V.	40						T-6½	8	MIN. 9 PIN	9AK	9X8
10	TRIODE	7.5	1.25	FIL.	CLASS A AMPLIFIER	425		40	18		1600	5								ST-16	85	RED. 4 PIN	4D	10
10C8	TRIODE PENTODE	10.5	0.3*	HEATER	CLASS A AMPLIFIER	250	135	E	11.5	3.2	8000	100	Cut-off: 50 μ amp. @ -6 V. Cut-off: 10 μ amp. @ -10 V.	53						T-6½	8	MIN. 9 PIN	9DA	10C8

* Heater warm-up time: 11 seconds.
 H Pentode unit.
 G Triode unit.
 K Bias obtained thru 390 ohm cathode resistor.
 H Bias obtained thru 100 ohm cathode resistor.
 R Bias obtained thru 82 ohm cathode resistor.
 E Bias obtained thru 56 ohm cathode resistor.
 B Bias obtained thru 68 ohm cathode resistor.
 D Bias obtained thru 200 ohm cathode resistor.

PRINTED IN U. S. A.

11C5-12B8GT

TYPE	FILAMENT		APPLICATION	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS							BULB	BASE											
	DESCRIPTION	VOLTS		AMPERES	TYPE OF CATHODE	SCREEN GRID VOLTS	CONTROL GRID VOLTS (MESH)	PLATE CURRENT MA	SCREEN CURRENT MA	CONDUCTANCE MA			RESISTANCE MΩ	AMPLIFICATION FACTOR	LOAD RESISTANCE Ω	POWER OUTPUT WATTS	MAX. A.C. VOLTS RMS	MAX. A.C. VOLTS PEAK-TO-PEAK	MAX. D.C. CURRENT MA	RECTIFIER COMPONENTS	STYLE	OUTLINE NO.	STYLE
11C5	BEAM PENTODE	11.6	0.45	HEATER	CLASS A AMPLIFIER	110	110	7.5	40F	3F	5800	2.5		1.5				T-5½	5	MIN. 7 PIN	7CV		11C5
12A	TRIODE	5	0.25	DC FIL.	CLASS A AMPLIFIER	180		13.5	7.7	1800	4.7	8.5	10,650	0.285				ST-14	78	MED. 4 PIN	4D		12A
12A4	TRIODE	12.6	0.3	HEATER	VERTICAL POSITIONING AMPLIFIER	250		9	23	8000		20	Cutoff: 50 μs at Eb = 500 V.; -33 V.					T-6½	9	MIN. 9 PIN	9AG		12A4
						180	180	25	45	8	2400	35	3300	3.4							ST-12	70	SMALL 7 PIN
12A6GT	BEAM PENTODE	12.6	0.15	HEATER	CLASS A AMPLIFIER	250	250	12.5	30	3.5	3000		7500	3				T-9	35	7 PIN OCTAL	7S		12A6GT
12A7	DIODE PENTODE	12.6	0.3	HEATER	HALF-WAVE RECTIFIER													ST-12	72	SMALL 7 PIN	7K		12A7
12A8GT	HEPTODE	12.6	0.15	HEATER	CLASS A AMPLIFIER	100	50	1.5	1.1	1.3	360	600						T-9	34	8 PIN OCTAL	8A		12A8GT
12AD7	TWIN TRIODE	6.3	.45	HEATER	CLASS A AMPLIFIER	250		2	1.25	1600	62.5	100						T-6½	8	MIN. 9 PIN	9A		12AD7
12AH7GT	DOUBLE TRIODE	12.6	0.15	HEATER	CLASS A AMPLIFIER	180		6.5	7.6	1900	8.4	16						T-9	29	8 PIN OCTAL	8BE		12AH7GT
12AX4GT	DIODE	12.6	0.6	HEATER	TV DAMPER SERVICE													T-9	36	6 PIN OCTAL	4CC		12AX4GT
12B4	TRIODE	12.6	0.3	HEATER	CLASS A AMPLIFIER	150		17.5	35		6500		6.5					T-6½	9	MIN. 9 PIN	9AG		12B4
12B7	PENTODE	12.6	0.15	HEATER	CLASS A AMPLIFIER	250	100	3	9.2	2.4	2000	800						T-9	26	8 PIN LOC.	8V		12B7
12B8GT	TRIODE PENTODE	12.6	0.3	HEATER	TRIODE UNIT AS CLASS A AMPLIFIER	90		0	2.8	2400	37	90						T-9	42	8 PIN OCTAL	8A		12B8GT

* Zero signal.

TUNG-SOL

12BH7-12CT8

TYPE	DESCRIPTION	VOLTS	FILAMENT	APPLICATION		CONTROL GRID (VOLT NEG)				SCREEN CURRENT				PLATE CURRENT				TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS				BULB	BASE	
				TYPE OF CATHODE	AMBIERS	PLATE VOLTS	SCREEN VOLTS	CONTROL GRID VOLTS (NEG)	SCREEN CURRENT MA	PLATE CURRENT MA	TRANSFORMER CONDENSERS	RESISTANCE PLATE RESISTOR	AMPLIFICATION FACTOR	LOAD RESISTANCE	POWER OUTPUT WATTS	MAX. C. VOLTAGE	MAX. PEAK CURRENT MA	RECTIFIER CONNECTION	MAX. DC CATHODE INPUT	STYLE	OUTLINE NO.			STYLE
12BH7	DOUBLE TRIODE	12.6	HEATER	CLASS A AMPLIFIER	85	10.5	11.5	3100	17	Cut-off: 50 μ amp. @ Eb = 500 V. and -45 V.	T-6½	9	MIN. 9 PIN	9A	12BH7	9A	MIN. 9 PIN	9A	12BH7	9A	12BH7	9A		
		6.3			0	20	6200	21	3.5														MAX. PEAK CURRENT MA	MAX. DC CATHODE INPUT
12BK5	PENTODE	12.6	HEATER	CLASS A AMPLIFIER	250	5	35F	8500	100	Cut-off: 1 μ a @ -46 V.	T-9	52	7 PIN OCTAL	6AM	12BK5	9BQ	MIN. 9 PIN	9BQ	12BK5	9BQ	12BK5	9BQ	12BK5	9BQ
		0.6*			150	22.5	55	2.1	5500															
12BQ6GA	DOUBLE DIODE TRIODE	12.6	HEATER	CLASS A AMPLIFIER	250	3	1	1200	58	Cut-off: 50 μ amp. @ Eb = 500 V. and -45 V.	T-6½	9	MIN. 9 PIN	9A	12BQ6GA	9A	MIN. 9 PIN	9A	12BQ6GA	9A	12BQ6GA	9A	12BQ6GA	9A
		0.6			250	3	1	1200	58															
12BU6	DOUBLE DIODE TRIODE	12.6	HEATER	CLASS A AMPLIFIER	250	9	9.5	1900	8.5	Cut-off: 50 μ amp. @ Eb = 500 V. and -45 V.	T-5½	5	MIN. 7 PIN	7BT	12BU6	7BT	MIN. 7 PIN	7BT	12BU6	7BT	12BU6	7BT	12BU6	7BT
		0.6			250	9	9.5	1900	8.5															
12BV7	PENTODE	12.6	HEATER	VIDEO AMPLIFIER	250	150	A	25	6.0	Cut-off: 50 μ amp. @ Eb = 500 V. and -45 V.	T-6½	9	MIN. 9 PIN	9BF	12BV7	9BF	MIN. 9 PIN	9BF	12BV7	9BF	12BV7	9BF	12BV7	9BF
		0.3			250	150	A	25	6.0															
12BY7	PENTODE	12.6	HEATER	CLASS A AMPLIFIER	250	150	A	25	6	Cut-off: 50 μ amp. @ Eb = 500 V. and -45 V.	T-6½	9	MIN. 9 PIN	9BF	12BY7	9BF	MIN. 9 PIN	9BF	12BY7	9BF	12BY7	9BF	12BY7	9BF
		0.60			250	150	A	25	6															
12BZ7	TWIN TRIODE	12.6	HEATER	CLASS A AMPLIFIER	250	2	2.5	3200	31.8	Cut-off: 50 μ amp. @ Eb = 500 V. and -45 V.	T-6½	9	MIN. 9 PIN	9A	12BZ7	9A	MIN. 9 PIN	9A	12BZ7	9A	12BZ7	9A	12BZ7	9A
		0.6			250	2	2.5	3200	31.8															
12C8	DOUBLE DIODE PENTODE	12.6	HEATER	CLASS A AMPLIFIER	250	125	3	10	2.3	Cut-off: 50 μ amp. @ Eb = 500 V. and -45 V.	MT-8	19	SMALL WAFER 8 PIN	8E	12C8	8E	MIN. 8 PIN	8E	12C8	8E	12C8	8E	12C8	8E
		0.15			250	125	3	10	2.3															
12CM6	BEAM PENTODE	12.6	HEATER	CLASS A AMPLIFIER	315	225	13.0	34F	2.2F	Cut-off: 50 μ amp. @ Eb = 500 V. and -45 V.	T-6½	9	MIN. 9 PIN	9CK	12CM6	9CK	MIN. 9 PIN	9CK	12CM6	9CK	12CM6	9CK	12CM6	9CK
		0.225			250	125	3	10	2.3															
12CN5	PENTODE	12.6	HEATER	IF AMPLIFIER	12.6	12.6	4.5	3.5	3800	Cut-off: 50 μ amp. @ Eb = 500 V. and -45 V.	T-5½	5	MIN. 7 PIN	7CV	12CN5	7CV	MIN. 7 PIN	7CV	12CN5	7CV	12CN5	7CV	12CN5	7CV
		0.45			12.6	12.6	4.5	3.5	3800															
12CS5	BEAM PENTODE	12.6	HEATER	CLASS A AMPLIFIER	110	110	7.5	49F	4F	Cut-off: 50 μ amp. @ Eb = 500 V. and -45 V.	T-6½	10A	MIN. 9 PIN	9C1K	12CS5	9C1K	MIN. 9 PIN	9C1K	12CS5	9C1K	12CS5	9C1K	12CS5	9C1K
		0.6			200	200	125	46F	2.2F															
12CS6	HEPTODE	12.6	HEATER	CLASS A AMPLIFIER	100	30	1	0.75	1.1	Cut-off: 50 μ amp. @ Eb = 500 V. and -45 V.	T-5½	4	MIN. 7 PIN	7CH	12CS6	7CH	MIN. 7 PIN	7CH	12CS6	7CH	12CS6	7CH	12CS6	7CH
		0.15			100	30	1	0.75	1.1															
12CT8	TWIN PENTODE	12.6	HEATER	CLASS A AMPLIFIER	200	125	D	15	3.4	Cut-off: 100 μ amp. @ -8 V. Cut-off: 100 μ amp. @ -0.5 V.	T-6½	8	MIN. 9 PIN	9DA	12CT8	9DA	MIN. 9 PIN	9DA	12CT8	9DA	12CT8	9DA	12CT8	9DA
		0.3*			150	150	E	9.0	4000															

F Zero signal. * Heater warm-up time: 11 seconds. A Bias obtained thru 68 ohm cathode resistor. B Bias obtained thru 150 ohm cathode resistor. C Triode section. P Bias obtained thru 82 ohm cathode resistor. E Bias obtained thru 150 ohm cathode resistor.

12CU6-12J5GT

TYPE	DESCRIPTION	FILAMENT		APPLICATION	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS				RECIPIER CONNECTION		BULB	BASE									
		AMBERS	VOLTS		TYPE OF CATHODE	SCREEN GRID	CONTROL GRID	PLATE CURRENT	SCREEN CURRENT	CONDUCTANCE		RESISTANCE	AMPLIFICATION	LOAD RESISTANCE	POWER OUTPUT	MAX. VOLTAGE	MAX. CURRENT	MAX. DC OUTPUT	STYLE	OUTLINE NO.	STYLE
12CU6	PENTODE	12.6	0.6	HEATER	310	140	79	11.2	Average Plate Voltage: 540 V. Peak Positive Plate Voltage: 4.0 Kv. Peak Plate Current: 270 mA.				T-12	59	INT. OCTAL 6AM 7 PIN	12CU6					
		12.6	0.15	HEATER	12.6	12.6	3.0	1.4	3.100	40	Cut-off: 10 μ amp. @ -4.5 V.				T-5½		4	MIN. 7 PIN	12CX6		
12D4	DIODE	12.6	0.6	HEATER	Tube Voltage Drop With $I_b = 250$ mA. = 22 V. Max. DC Plate Current = 155 mA Max. Peak Plate Current = 900 mA. Max. Plate Dissipation = 5.5 Watts								T-9	32	6 PIN OCTAL 4CG	12D4					
12DB5	PENTODE	12.6	0.6	HEATER	110 200	110 125	7.5 4.6 ^F 4.6 ^G	4 ^F 8000 2.2 ^F 8000	13 28	DC Plate Current: 83 mA DC Grid #2 Current: 12.3 mA Plate Dissipation: 5.1 Watts				T-6½	10B	MIN. 9 PIN	12DB5				
		12.6	0.6	HEATER	250 100	250 100	13.5 5	5 2.5	1450 1150	9.5 12	13.8 13.8	DC Grid #1 Voltage: -28 V. DC Grid #2 Voltage: 140 V. Peak Positive Plate Voltage: 3440 V. Grid #1 Input Voltage: Peak To Peak Sawtooth: 74 V. Negative Peaking: 18 V.				T-9		35	6 PIN OCTAL 6Q	12E5GT	
12EF6	BEAM PENTODE	12.6	0.45	HEATER	250	250	18	50	2	5000	Cut-off: 1 mA. at -40 V.				T-9	37	INT. OCTAL 8 PIN	12EF6			
		12.6	0.15	HEATER	250	250	2	0.9	1500	66	100					T-9	33		5 PIN OCTAL 5M	12F5GT	
12G8	DOUBLE TRIODE	12.6	0.4	HEATER	12.6	12.6	0 ^A	3.0 ^{FP} 7.2 ^{FN}	2600	8.5	2.2	2000	25					T-6½	9	MIN. 9 PIN	12G8
		12.6	0.15	HEATER	250 90	250 90	8 0	9 10	2600 3000	7.7 6.7	20 20					MT-8	17	6 PIN OCTAL 6Q	12J5		
12J5GT	TRIODE	12.6	0.15	HEATER	250 90	250 90	8 0	9 10	2600 3000	7.7 6.7	20 20	Cut-off: 10 μ amp. @ -18 V. Cut-off: 10 μ amp. @ -7.0 V.				T-9	35	6 PIN OCTAL 6Q	12J5GT		

^G With cathode of input section connected to grid of output section.
^{FN} Zero signal (input section).
^F Zero signal.
^{FS} Zero signal (output section).

^F Heater warm-up time: 11 seconds.
^{FP} Input section.

TUNG-SOL

12SJ7GT-14C7

TYPE	DESCRIPTION	FILAMENT		TYPE OF CATHODE		APPLICATION	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB		BASE						
		AMPS	VOLTS	AMPLIFIER	CLASS A		SCREEN GRID VOLTS (NEG.)	CONTROL GRID VOLTS (NEG.)	PLATE CURRENT MA	SCREEN CURRENT MA	CONDUCTANCE TRANS	RESISTANCE KΩ	AMPLIFICATION FACTOR	LOAD RESISTANCE Ω	POWER OUTPUT WATTS	MAX. AC RMS VOLTS	MAX. PEAK-TO-PEAK INTR. VOLTS	MAX. DC OUTPUT MA		RECIPIER CONSIDERATION	STYLE	OUTLINE NO.	STYLE		
																								HEATER	HEATER
12SJ7GT	PENTODE	12.6	0.15	HEATER	CLASS A AMPLIFIER	250 100	100 100	3 3	2.9 0.9	0.8 1.650 1575	1000 700									8 PIN OCTAL	32	T-9	8 PIN OCTAL	8N	12SJ7GT
12SK7GT	PENTODE	12.6	0.15	HEATER	CLASS A AMPLIFIER	250 100	100 100	3 13	9.2 4	2.6 2000	800 120									8 PIN OCTAL	32	T-9	8 PIN OCTAL	8N	12SK7GT
12SQ7GT	DOUBLE DIODE TRIODE	12.6	0.15	HEATER	CLASS A AMPLIFIER	250 100		2 1	1.1 0.5	1175 925	85 110	100 100								8 PIN OCTAL	40	T-9	8 PIN OCTAL	8Q	12SQ7GT
12SR7GT	DOUBLE DIODE TRIODE	12.6	0.15	HEATER	CLASS A AMPLIFIER	250		9	9.5	1900	8.5	16								8 PIN OCTAL	35	T-9	8 PIN OCTAL	8Q	12SR7GT
12SW7	DOUBLE DIODE TRIODE	12.6	0.15	HEATER	CLASS A AMPLIFIER	250		9	9.5	1900	8.5	16								8 PIN OCTAL	17	MT-8G	8Q	12SW7	
12SX7GT	TRIODE	12.6	0.3	HEATER	CLASS A AMPLIFIER	250	0 8	10 9	3000 2000	6.7 7.7	20 20									8 PIN OCTAL	33	T-9	8 PIN OCTAL	8BD	12SX7GT
12SY7	HEPTODE	12.6	0.15	HEATER	CONVERTER	250	100	2	3.5	8.5	450	1000								8 PIN OCTAL	17	MT-8G	8R	12SY7	
12SY7GT	HEPTODE	12.6	0.15	HEATER	CONVERTER	250	100	2	3.5	8.5	450	1000								8 PIN OCTAL	33	T-9	8 PIN OCTAL	8R	12SY7GT
12Z3	DIODE	12.6	0.3	HEATER	HALF-WAVE RECTIFIER															SMALL 4 PIN	70	ST-12	4C	12Z3	
14A4	TRIODE	12.6	0.15	HEATER	CLASS A AMPLIFIER	250	0 8	10 9		3000 2600	6.7 7.7	70 20								8 PIN LOC.	19	T-9	8 PIN LOC.	5AC	14A4
14A5	BEAM PENTODE	12.6	0.15	HEATER	CLASS A AMPLIFIER	125	125	9	44	3.3	6000	17								8 PIN LOC.	26	T-9	8 PIN LOC.	6AA	14A5
14B6	DOUBLE DIODE TRIODE	12.6	0.15	HEATER	CLASS A AMPLIFIER	250 100		2 1	0.9 0.4	1100 900	91 110	100 100								8 PIN LOC.	19	T-9	8 PIN LOC.	8W	14B6
14C5	BEAM PENTODE	12.6	0.15	HEATER	CLASS A AMPLIFIER	315	225	13	34	2.2	3750	58								8 PIN LOC.	26	T-9	8 PIN LOC.	6AA	14C5
14C7	PENTODE	12.6	0.15	HEATER	CLASS A AMPLIFIER	250	100	3	2.2	0.7	1575	1000								8 PIN LOC.	26	T-9	8 PIN LOC.	8V	14C7

Cutoff: at -8 V.

Cutoff: 10 μmhos at -35 V.

Cutoff: at -7 V.

TUNG-SOL

17L6GT-24S

TYPE	DESCRIPTION	VOLTS	AMPERES	FILAMENT	TYPE OF CATHODE		TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS												BULB	BASE	TYPE
					APPLICATION	RATE VOLTS	SCREEN GRID VOLTS (AC)	CONTROL GRID VOLTS (DC)	PLATE CURRENT MA.	SCREEN CURRENT MA.	TRANS. COND. Mhos	INTERNAL RES. OHMS	AMPLIFICATION FACTOR	LOAD RESISTANCE OHMS	POWER OUTPUT WATTS	MAX. VOLTAGE VAC. PER PLATE	MAX. VOLTAGE VAC. W/RECT. CONSIDER INPUT	RECTIFIER CONSIDER INPUT			
17L6GT	BEAM PENTODE	16.8	0.45*	HEATER	CLASS A AMPLIFIER	110 125	110 125	7.5 0	4.9 ^a 4.6 ^a	8.8 ^a 2.2 ^a	8000 8000	13 28	2000 4000	2.1 3.8				T-9	36 7 PIN	7S	17L6GT
17R5	PENTODE	16.8	0.45*	HEATER	VERTICAL DEFLECTION AMPLIFIER	110	110	8.5	40	3.3	7000	13	Cut-off: 0.3 mA. @ -22 V.					T-5½	5 7 PIN	7CV	17R5
18A5	BEAM PENTODE	18.5	0.3*	HEATER	HORIZONTAL DEFLECTION AMPLIFIER	60 200	125 17	1.65 1.1	15 4.8	1.1	4800	27						T-9	41 6 PIN	6CK	18A5
19	DOUBLE TRIODE	2	0.26	DC FIL.	CLASS B AMPLIFIER	135	0	10					10,000	2.1				ST-17	70 SMALL 6 PIN	6C	19
19B6G	BEAM PENTODE	18.9	0.3	HEATER	HORIZONTAL DEFLECTION AMPLIFIER	250	250	15	75	4	6000	25	Cut-off: 1 ma. @ -45 V.					ST-16	83 6 PIN	5BT	19B6G
19B6GA	BEAM PENTODE	18.9	0.3	HEATER	HORIZONTAL DEFLECTION AMPLIFIER	60 250	250	15	180 75	18 4.0	6000	25	Cut-off: 1 ma. @ -45 V.					T-12	62 5 PIN	5BT	19B6GA
19C8	TRIPLE DIODE TRIODE	18.9	0.15	HEATER	CLASS A AMPLIFIER	100	100	1	0.5		1250	80	100					T-6½	8 9 PIN	9AE	19C8
19J6	DOUBLE TRIODE	18.9	0.15	HEATER	CLASS A AMP. L MIXER SERVICE	100 150		c d	8.5 4.8	5300	7.1	38	Oscillator Peak Voltage: 3 V. Short Circuit Input conductance at 100 mc.: 96 μmhos.					T-5½	4 7 PIN	7BF	19J6
19X8	TRIODE PENTODE	19.8	0.15	HEATER	OSCILLATOR MIXER	100 250 150	150		8.5 7.7 7.8	5900 1.6 4600 4000	6.9 7.50 7.9	40					T-6½	8 9 PIN	9AK	19X8	
20	TRIODE	3.3	0.13	DC FIL.	CLASS A AMPLIFIER	135		22.5	6.5	525	6.3	3.3	6500	0.11				T-8	14 SMALL 4 PIN	4D	20
24A	TETRODE	2.5	1.75	HEATER	CLASS A AMPLIFIER	250	90	3	4	1.7	1050	600	630					ST-14	79 MED. 5 PIN	5E	24A
24S	TETRODE	2.5	1.75	HEATER	CLASS A AMPLIFIER	250	90	3	4	1.7	1050	600	630					ST-14	79 MED. 5 PIN	5E	24S

* Heater warm-up time: 11 seconds.
 a Fixed bias not recommended, cathode bias: 810 ohms for both units.
 b Fixed bias not recommended, cathode bias: 50 ohms for both units.
 c For each section.
 d Zero signal.

TUNG-SOL

25A6-25D8GT

TYPE	DESCRIPTION	FILAMENT		TYPE OF CATHODE		APPLICATION		TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB	BASE	TYPE
		AMPERES	VOLTS	SCREEN GRID	CONTROL GRID	PLATE CURRENT	SCREEN CURRENT	COND. CURRENT	TRANS. COND. MUMPS	NEARBY GRID	AMPLIFICATION	LOAD RESISTANCE OHMS	POWER OUTPUT	MAX. AC RMS VOLT. RM. MALE	MAX. PEAK RMS VOLT. RM. MALE	MAX. DC RMS VOLT. MALE	RECTIFIER CONDENSER INPUT			
25A6	PENTODE	25	0.3	HEATER	CLASS A AMPLIFIER	160	120	18	33	6.5	2375	42	5000	2.2	Signal: 12.7 V. RMS	MT-8B	20	7 PIN OCTAL	7S	25A6
25A6GT	PENTODE	2.5	0.3	HEATER	CLASS A AMPLIFIER	160	120	18	33	6.5	2375	42	5000	2.2		T-9	35	7 PIN OCTAL	7S	25A6GT
25A7GT	DIODE PENTODE	25	0.3	HEATER	PENTODE UNIT AS CLASS A AMPLIFIER	100	100	15	20.5	4	1800	50	4500	0.77		T-9	35	8 PIN OCTAL	8F	25A7GT
25AC5GT	TRIODE	25	0.3	HEATER	POSITIVE BIAS AMPLIFIER	110		+15	45		3800	15.2	58		Grid Current: 7 Ma.	T-9	35	6 PIN OCTAL	6Q	25AC5GT
25B5	DOUBLE TRIODE	25	0.3	HEATER	CLASS A AMPLIFIER	110	110	0	45	7	2200	11.5	2000	2	Signal: 21 V. RMS	ST-12C	74	SMALL 6 PIN	6D	25B5
25B6G	PENTODE	25	0.3	HEATER	CLASS A AMPLIFIER	200	135	23	62	1.8	5000	18	2500	7.1		ST-14	77	7 PIN OCTAL	7S	25B6G
25B8GT	TRIODE PENTODE	25	0.15	HEATER	CLASS A AMPLIFIER	100	100	3	0.6	2	1500	75	112			T-9	33	8 PIN OCTAL	8T	25B8GT
25BK5	PENTODE	25	0.3	HEATER	CLASS A AMPLIFIER	250	250	5	37	10	8500	100	6500	3.5		T-6½	9	MIN. 9 PIN	9BQ	25BK5
25BQ6GA	PENTODE	25	0.3	HEATER	HORIZONTAL DEFLECTION AMPLIFIER	250	150	22.5	55	2.1	5500	20				T-11	56	MED. 7 PIN	6AM	25BQ6GA
25C6G	BEAM PENTODE	25	0.3	HEATER	CLASS A AMPLIFIER	135	135	13.5	58	3.5	7000	9.3	2000	3.6	Signal: 9.9 V. RMS	ST-14	77	7 PIN OCTAL	7S	25C6G
25CD6GA	BEAM PENTODE	25	0.6*	HEATER	HORIZONTAL DEFLECTION AMPLIFIER	170		A	92	15.5	7500		3.8	DC Power Supply Volt.: 350 V. Total Power Supply Volt.: 500 V.	ST-16	83	INT. 6 PIN	5BT	25CD6GA	
25CU6	PENTODE	25	0.3	HEATER	HORIZONTAL DEFLECTION AMPLIFIER	310	140		79	11.2				Plate Dissipation: 7 W. Grid #2 Dissipation: 1.57 W. Peak Plate Current: 270 mA.	T-12	59	INT. 7 PIN	6AM	25CU6	
25D8GT	DIODE TRIODE PENTODE	25	0.15	HEATER	CLASS A AMPLIFIER	100	100	1	0.5	2.7	1100	91	100		Cutoff: 2 μmhos @ -35 V.	T-9	43	8 PIN OCTAL	8AF	25D8GT

* Bias obtained thru 300 ohm cathode resistor.

* Heater warm-up time: 11 seconds.

25DQ6-27

TYPE	DESCRIPTION	VOLTS		FILAMENT AMPERES	TYPE OF CATHODE	APPLICATION	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB	BASE	TYPE		
		CONTROL GRID (VOLTS NEG)	SCREEN GRID (VOLTS NEG)				PLATE CURRENT (MA)	SCREEN CURRENT (MA)	TRANSFORMER CONDUCTANCE (OHMS)	PLATE RESONANCE FREQUENCY (MC)	AMPLIFICATION FACTOR	LOAD RESISTANCE (OHMS)	POWER OUTPUT (WATTS)	MAX. A.C. VOLTAGE (VOLTS)	MAX. D.C. VOLTAGE (VOLTS)	RECTIFIER CONDENSER INPUT (MMF)				STYLE	OUTLINE NO.
25DQ6	BEAM PENTODE	25.0	0.3	HEATER	HORIZONTAL POSITION AMPLIFIER	Grid #1 Voltage: -28 V. DC Grid #2 Voltage: 140 V. Peak Positive Plate Voltage: 3440 V. Grid #1 Input Voltage: 2500 V. Peak To Peak Sawtooth: 7.0 V. Negative Peaking: 18 V.										T-12	59	SHORT PIN OCTAL	6AM	25DQ6	
						DC Plate Current: 83 mA DC Grid #2 Current: 12.3 mA Plate Dissipation: 5.1 Watts															
25F5	BEAM PENTODE	25.0	0.15	HEATER	CLASS A AMPLIFIER	110	110	7.5	37	7.0	5800	16.0	2500	1.2	T-5½	5	MIN. 7 PIN	7CV	25F5		
						110	110	8.0	78	13.6	4500	2.9									
25N6G	DOUBLE TRIODE	25	0.3	HEATER	CLASS A AMPLIFIER	110	110	0	45	7	2200	11.5	25	2000	2	ST-12C	73	7 PIN OCTAL	7W	25N6G	
						Peak I _b : 600 mA, max. Hot-Switching Transient I _b for 0.2 sec. max.: 3.5 amp. max.															
25W4GT	DIODE	25	0.3	HEATER	HALF-WAVE RECTIFIER	DC Current for Each Section										T-9	35	6 PIN OCTAL	4CG	25W4GT	
						125															
25X6GT	DOUBLE DIODE	25	0.15	HEATER	HALF-WAVE RECTIFIER	DC Current for Each Section										T-9	35	7 PIN OCTAL	7Q	25X6GT	
						125															
25Y4GT	DIODE	25	0.15	HEATER	HALF-WAVE RECTIFIER	Tube Voltage Drop at 125 Ma.: 18 V. Max. Peak Plate Current: 250 Ma.										T-9	32	6 PIN OCTAL	5AA	25Y4GT	
						125															
25Z4	DIODE	25	0.3	HEATER	HALF-WAVE RECTIFIER	Max. Peak Plate Current: 250 Ma. Tube Voltage Drop at 125 mA.: 12 V.										T-9	32	6 PIN OCTAL	5AA	25Z4	
						235															
25Z5	DOUBLE DIODE	25	0.3	HEATER	HALF-WAVE RECTIFIER	DC Current for Each Section										ST-12	70	SMALL 6 PIN	6E	25Z5	
						235															
25Z6	DOUBLE DIODE	25	0.3	HEATER	HALF-WAVE RECTIFIER	DC Current for Each Section										MT-8B	20	7 PIN OCTAL	7Q	25Z6	
						235															
26	TRIODE	1.5	1.05	FIL.	CLASS A AMPLIFIER	180	14.5	6.2	1150	7.3	8.3					ST-14	78	MED. 4 PIN	4D	26	
						26.5															
26A7GT	DOUBLE PENTODE	26.5	0.6	HEATER	CLASS A AMPLIFIER	250	26.5	4.5	20	1.9	5700	1500	0.18	T-9	46	8 PIN OCTAL	8BU	26A7GT			
						250															
26BK6	DOUBLE TRIODE	26.5	0.07	HEATER	CLASS A AMPLIFIER	250	2	1.2	1600	62.5	100					T-5½	5	MIN. 7 PIN	7BT	26BK6	
						250															
26CG6	PENTODE	26.5	0.07	HEATER	CLASS A AMPLIFIER	250	150	8	9	2.3	2000	720	Cutoff: 40 μmhos @ -24 V.				T-5½	4	MIN. 7 PIN	7BK	26CG6
						250															
27	TRIODE	2.5	1.75	HEATER	CLASS A AMPLIFIER	90	21	5.2	975	9.25	9					ST-12	70	SMALL 5 PIN	5A	27	
						90															

a. Single tube. c. Two tubes in push-pull.

TUNG-SOL

2875-36

TYPE	DESCRIPTION	VOLTS	FILAMENT	FILAMENT		APPLICATION	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB	BASE						
				AMPERES	TYPE OF CATHODE		SCREEN GRID VOLTS (V _{SG})	CONTROL GRID VOLTS (V _{CG})	PLATE CURRENT mA	SCREEN CURRENT mA	TRANS CONDUCTANCE MHO	REAR PLATE RESISTANCE K OHM	AMPLIFICATION FACTOR	LOAD RESISTANCE K OHM	POWER OUTPUT WATTS	MAX. A.C. RMS VOLTAGE PER ANODE			MAX. D.C. OUTPUT MA	RECIFIER CONNECTION	STYLE	OUTLINE NO.	STYLE	TYPE
28Z5	DOUBLE DIODE	28	0.24	HEATER	FULL WAVE RECTIFIER												450	1250	100	T-9	30	8 PIN LOC.	6BJ	28Z5
30	TRIODE	2	0.06	DC FIL.	CLASS A AMPLIFIER	180	13.5	3.1	900	10.3	9.3									ST-12	70	SMALL 4 PIN	4D	30
31	TRIODE	2	0.13	DC FIL.	CLASS A AMPLIFIER	180 135	30 22.5	12.3 8	1050 925	3.6 4.1	3.8 3.8	5700 7000	0.375 0.185							ST-12	70	SMALL 4 PIN	4D	31
32	TETRODE	2	0.06	FIL.	CLASS A AMPLIFIER	180	67.5	3	1.7	0.4	650	1200	780							ST-14	79	MED. 4 PIN	4K	32
32L7GT	DIODE BEAM PENTODE	32.5	0.3	HEATER	CLASS A AMPLIFIER	90	90	5	38	3	6000	15	90	2600	0.8					T-9	35	8 PIN OCTAL	8Z	32L7GT
33	PENTODE	2	0.26	DC FIL.	CLASS A AMPLIFIER	180 135	180 135	18 13.5	22 14.5	5 3	1700 1450	50 70	6000 7000	1.4 0.7						ST-14	78	MED. 5 PIN	5K	33
34	PENTODE	2	0.06	DC FIL.	CLASS A AMPLIFIER	180 135	67.5 67.5	3 3	2.8 2.8	1 1	620 600	1000 600	620 360							ST-14	79	MED. 4 PIN	4M	34
35	TETRODE	2.5	1.75	HEATER	CLASS A AMPLIFIER	250	90	3 min.	6.5	2.5	1050	400	420							ST-14	79	MED. 5 PIN	5E	35
35A5	BEAM PENTODE	35	0.15	HEATER	CLASS A AMPLIFIER	200 110	125 110	0 43P 7.5	6100 5800	34 14										T-9	30	8 PIN LOC.	6AA	35A5
35Y4	DIODE	35	0.15	HEATER	HALF WAVE RECTIFIER															T-9	25	8 PIN LOC.	5AL	35Y4
35Z3	DIODE	35	0.15	HEATER	HALF WAVE RECTIFIER															T-9	30	8 PIN LOC.	4Z	35Z3
35Z4GT	DIODE	35	0.15	HEATER	HALF WAVE RECTIFIER															T-9	35	6 PIN OCTAL	5AA	35Z4GT
35Z6G	DOUBLE DIODE	35	0.3	HEATER	HALF WAVE RECTIFIER															T-9	77	7 PIN OCTAL	7Q	35Z6G
36	TETRODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	90	3	3.2	1.7	1080	550	595							ST-12	72	SMALL 5 PIN	5E	36

P Zero signal.

TUNG-SOL

37-48

TYPE	DESCRIPTION	FILAMENT		TYPE OF CATHODE	APPLICATION		TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB	BASE							
		VOLTS	AMPERES		TYPE OF CATHODE	AMPLIFICATION	SCREEN GRID VOLTS	CONTROL GRID VOLTS (NEG)	PLATE CURRENT MA	SCREEN CURRENT MA	CONDUCTANCE OHMS	RESISTANCE OHMS	AMPLIFICATION FACTOR	RESISTANCE OHMS	LOAD RESISTANCE OHMS	POWER OUTPUT WATTS			MAX. A.C. RMS VOLTS	MAX. P.A.K. INVERTER VOLTS	MAX. D.C. CATHODE VOLTS	RECTIFIER CONNECTION	STYLE	OUTLINE NO.	STYLE
37	TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	18	7.5	1100	8.4	9.2									ST-12	70	SMALL 5 PIN	5A	37	
38	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	25	22	3.8	1200	100	120	10,000	2.5						ST-12	72	SMALL 5 PIN	5F	38	
39/44	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	90	3	5.8	1.4	1050									ST-12	72	SMALL 5 PIN	5F	39/44	
40	TRIODE	5	0.25	DC FIL.	CLASS A AMPLIFIER	180	3	0.2	200	150	30									ST-14	78	MED. 4 PIN	4D	40	
41	PENTODE	6.3	0.4	HEATER	CLASS A AMPLIFIER	315	250	21	25.5 ^F	4.0 ^F	2100	110	9000	4.5						ST-12	70	SMALL 6 PIN	6B	41	
42	PENTODE	6.3	0.7	HEATER	CLASS A AMPLIFIER	285 250 250	20 16.5 34	38 34	7 6.5	2550 2500	78 80	7000 7000	4.8 3.2							ST-14	78	MED. 6 PIN	6B	42	
43	PENTODE	25	0.3	HEATER	CLASS A AMPLIFIER	160	120	18	33	6.5	2375	42	5000	2.2						ST-14	78	MED. 6 PIN	6B	43	
45	TRIODE	2.5	1.5	FIL.	CLASS A AMPLIFIER	275	180	56	36	2050	1.70	3.5	4600	2.0						ST-14	78	MED. 4 PIN	4D	45	
45Z3	DIODE	45	0.075	HEATER	HALF-WAVE RECTIFIER	180	31.5	31	2125	1.65	3.5	2700	8.25							T-5½	4	MIN. 7 PIN	5AAM	45Z3	
45Z5GT	DIODE	45	0.15	HEATER	HALF-WAVE RECTIFIER															T-9	35	6 PIN OCTAL	6AD	45Z5GT	
46	TETRODE	2.5	1.75	FIL.	CLASS A AMPLIFIER ^D CLASS B AMPLIFIER ^E	250 400	33 0	22	2350	2.38	5.6	6400	1.25								ST-16	84	MED. 5 PIN	5C	46
47	PENTODE	2.5	1.75	FIL.	CLASS A AMPLIFIER	250	250	16.5	31	6	2500	60	150	7000	2.7					ST-16	84	MED. 5 PIN	5B	47	
48	TETRODE	30	0.4	DC HEATER	CLASS A AMPLIFIER	125	100	20 ^F	56	9.5	3900		1500	2.5						ST-16	84	MED. 6 PIN	6A	48	

^F Two grids tied together.

^F Zero signal.

^D Grid tied to plate.

TUNG-SOL

49-56S

TYPE	DESCRIPTION	FILAMENT		APPLICATION		TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB		BASE			
		VOLTS	AMPERES	TYPE OF CATHODE	SCREEN GRID	CONTROL GRID	SCREEN CURRENT	PLATE CURRENT	SCREEN CURRENT	TRANS. COND. FACTOR	RESISTANCE	AMPLIFICATION FACTOR	LOAD RESISTANCE	POWER OUTPUT	MAX. PEAK INVERSE VOLTAGE	MAX. D.C. RECTIFIER OUTPUT	STYLE		OUTLINE NO.		
49	TETRODE	2	0.12	FIL.	CLASS A AMPLIFIER	135	20	6	1125	4.175	4.7	11,000	0.17			ST-14	78	5 PIN	SC	49	
50	TRIODE	7.5	1.25	FIL.	CLASS A AMPLIFIER	450	84	55	2100	1.8	3.8	4350	4.6			ST-16	89	4 PIN	4D	50	
50A5	BEAM PENTODE	50	0.15	HEATER	CLASS A AMPLIFIER	200	125	0	8.5	8000	28	4000	3.8			T-9	30	8 PIN LOC.	6AA	50A5	
50AX6G	DOUBLE DIODE	50	0.3	HEATER	FULL-WAVE RECTIFIER	110	110	7.5	49*	8500	100	6500	3.5			ST-14	77	7 PIN OCTAL	7Q	50AX6G	
50BK5	BEAM PENTODE	50	0.15	HEATER	CLASS A AMPLIFIER	200	135	14	61	2.2	7100	18.3	2600	6	Signal: 10 V. RMS	T-6½	9	MIN. 9 PIN	9BQ	50BK5	
50C6G	BEAM PENTODE	50	0.15	HEATER	CLASS A AMPLIFIER	200	135	14	61	2.2	7100	18.3	2600	6	Signal: 10 V. RMS	ST-14	77	7 PIN OCTAL	7S	50C6G	
50X6	DOUBLE DIODE	50	0.15	HEATER	HALF-WAVE RECTIFIER										235	T-9	30	8 PIN LOC.	7AJ	50X6	
50Y7GT	DOUBLE DIODE	50	0.15	HEATER	VOLTAGE DOUBLER H-W RECTIFIER HEATER SECTION										117 235	T-9	35	8 PIN OCTAL	8AN	50Y7GT	
50Z7G	DOUBLE DIODE	50	0.15	HEATER	HALF-WAVE RECTIFIER										235	ST-12	69	8 PIN OCTAL	8AN	50Z7G	
53	DOUBLE TRIODE	2.5	2	HEATER	CLASS A AMPLIFIER	300	0	35*	Current and output for both sections		8000	10	Load is plate-to-plate			ST-14	78	7 PIN	7B	53	
55	DOUBLE DIODE TRIODE	2.5	1.0	HEATER	CLASS A AMPLIFIER	250	20	8	1100	7.5	8.3	20,000	0.35	Both sections in parallel			ST-12	72	SMALL 6 PIN	6G	55
55S	DOUBLE DIODE TRIODE	2.5	1.0	HEATER	CLASS A AMPLIFIER	250	20	8	1100	7.5	8.3	20,000	0.35				ST-12	72	SMALL 6 PIN	6G	55S
56	TRIODE	2.5	1.0	HEATER	CLASS A AMPLIFIER	250	13.5	5	1450	9.5	13.8						ST-12	70	SMALL 5 PIN	5A	56
56S	TRIODE	2.5	1.0	HEATER	CLASS A AMPLIFIER	250	13.5	5	1450	9.5	13.8						ST-12	70	SMALL 5 PIN	5A	56S

* Zero signal.

TUNG-SOL

57-84/6Z4

TYPE	DESCRIPTION	VOLTS		FILAMENT	FLAME		TYPE OF CATHODE		APPLICATION	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB	BASE		
		AMPS	AMPS		SCREEN GRID VOLTS (NEG.)	CONTROL GRID VOLTS (NEG.)	PLATE CURRENT MA	SCREEN CURRENT MA		CONDUCTANCE TRANS AMHOS	RATING FACTOR	APPLICATION FACTOR	LOAD RESISTANCE OHMS	POWER OUTPUT WATTS	MAX. AC VOLTAGE			RECIPIER CONSIDER INPUT					
															MAX. VOLTAGE	MAX. R.F. VOLTAGE	MAX. D.C. OUTPUT MA						
57	PENTODE	2.5	1.0	HEATER	CLASS A AMPLIFIER	250	100	3	2	0.5	1225	1000						ST-12C	76	SMALL 6 PIN	6F	57	BASING
58	PENTODE	2.5	1.0	HEATER	CLASS A AMPLIFIER	250	100	3	8.2	2	1600	800	1280				Cutoff: 2 amhos @ -50 V.	ST-12C	76	SMALL 6 PIN	6F	58	
59	PENTODE	2.5	2.0	HEATER	CLASS A AMPLIFIER	250	250	18	35	9	2500	40	100	6000	3			ST-16	84	MED. 7 PIN	7A	59	
70A7GT	DIODE PENTODE	70	0.15	HEATER	PENTODE CLASS A AMPLIFIER	110	110	7.5	40	3	5800		80	2500	1.5			T-9	35	8 PIN OCTAL	8AB	70A7GT	
71A	TRIODE	5	0.25	FIL.	CLASS A AMPLIFIER	180		40.5	20		1700	1.75	3	4800	0.79			ST-14	78	MED. 4 PIN	4D	71A	
75	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250		2	0.9		1100	91	100					ST-12	72	SMALL 6 PIN	6G	75	
75S	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250		2	0.9		1100	91	100					ST-12	72	SMALL 6 PIN	6G	75S	
76	TRIODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	13.5	5	1450	9.5	13.8						ST-12	70	SMALL 5 PIN	5A	76	
77	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	100	3	2.3	0.5	1250	1000						ST-12	72	SMALL 6 PIN	6F	77	
78	PENTODE	6.3	0.3	HEATER	CLASS A AMPLIFIER	250	125	3	10.5	2.6	1650	600					Cutoff: 2 amhos @ -42.5 V. Cutoff: 2 amhos @ -38.5 V.	ST-12	72	SMALL 6 PIN	6F	78	
79	DOUBLE TRIODE	6.3	0.6	HEATER	CLASS B AMPLIFIER	250		0	10.6						14,000	8		ST-12	72	SMALL 6 PIN	6H	79	
80	DOUBLE DIODE	5	2	FIL.	FULL-WAVE RECTIFIER													ST-14	78	MED. 4 PIN	4C	80	
81	DIODE	7.5	1.25	FIL.	HALF-WAVE RECTIFIER													ST-16	89	MED. 4 PIN	4B	81	
82	MERCURY VAPOR FULL-WAVE RECTIFIER DIODE	2.5	3	FIL.	FULL-WAVE RECTIFIER													ST-14	78	MED. 4 PIN	4C	82	
83V	DOUBLE DIODE	5	2	HEATER	FULL-WAVE RECTIFIER													ST-14	78	MED. 4 PIN	4AD	83V	
84/6Z4	DOUBLE DIODE	6.3	0.5	HEATER	FULL-WAVE RECTIFIER													ST-12	70	SMALL 5 PIN	5D	84/6Z4	

TUNG-SOL

85-713A

TYPE	FILAMENT		APPLICATION				TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS										BULB		BASE	TYPE	
	DESCRIPTION	VOLTS	AMPERES	TYPE OF CATHODE	PLATE VOLTS	SCREEN GRID VOLTS (NEG.)	CONTROL GRID VOLTS (NEG.)	PLATE CURRENT MA	SCREEN CURRENT MA	TRANS CONDUCTANCE MHO	RESISTANCE OHMS	AMPLIFICATION FACTOR	LOAD RESISTANCE OHMS	POWER OUTPUT WATT	MAX. A.C. VOLTS PER PLATE	MAX. PEAK INVERSE VOLTS	RECTIFIER CONDENSER INPUT CAPACITANCE MICROFARADS	STYLE			OUTLINE NO.
85	DOUBLE DIODE TRIODE	6.3	0.3	HEATER	250	20	8	1100	7.5	8.3	20,000	0.35					ST-12	72	SMALL 6 PIN	6C	85
89	PENTODE	6.3	0.4	HEATER	250	25	32	5.5	1800	70	125	6750	3.4				ST-12	72	SMALL 6 PIN	6F	89
117L7/M7GT	DIODE BEAM PENTODE	117	0.09	HEATER	105	105	5.2	43	4	5300	17	4000	0.85				T-9	41	8 PIN OCTAL	8AO	117L7/M7GT
117N7GT	DIODE BEAM PENTODE	117	0.09	HEATER	100	100	6	51	5	7000	16	3000	1.2				T-9	41	8 PIN OCTAL	8AV	117N7GT
117P7GT	DIODE BEAM PENTODE	117	0.09	HEATER	105	105	5.2	43	4	5300	17	4000	0.85				T-9	41	8 PIN OCTAL	8AV	117P7GT
117Z4GT	DIODE	117	0.04	HEATER	105	105	5.2	43	4	5300	17	4000	0.85				T-9	28	6 PIN OCTAL	5AA	117Z4GT
117Z6GT	DOUBLE DIODE	117	0.075	HEATER	105	105	5.2	43	4	5300	17	4000	0.85				T-9	35	7 PIN OCTAL	7Q	117Z6GT
183	TRIODE	5	1.25	FIL.	250	60	25	1800	1.8	3.2	4500	2					ST-14	78	VED. 4 PIN	4D	183
316A	TRIODE	2.0	3.65	FIL.	450	250	80						7.5			T-4½		ACORN		316A	
485	TRIODE	3	1.3	HEATER	180	9	6	1350	9.3	12.5						ST-12	70	SMALL 5 PIN	5A	485	
703A	TRIODE	1.15	4.5	FIL.	350			2075								T-4½		ACORN		703A	
705A	DIODE	5.0	5	FIL.												T-4½		ACORN		705A	
713A	PENTODE	6.3	.175	HEATER	120	120	2	7.5	2.5	4000	250					T-4½		ACORN		713A	

DC current for each section
 Max. Peak Inverse Plate Voltage: 500 Ma.
 Max. Avg. Rectified Plate Current: 100 Ma. Voltage Drop ($I_b = 365$ Ma.): 300 V.

TUNG-SOL

717A-XXL

TYPE	DESCRIPTION	FILAMENT		TYPE OF CATHODE	APPLICATION	TYPICAL OPERATING CONDITIONS AND CHARACTERISTICS				BULB		BASE											
		VOLTS	AMPERES			SCREEN GRID VOLTS (NEG)	CONTROL GRID VOLTS (NEG)	PLATE CURRENT	SCREEN CURRENT	CONDUCTANCE MHMS	RESISTANCE OHMS		AMPLIFICATION FACTOR	LOAD RES. OHMS	POWER OUTPUT WATTS	MAX. A.C. PLATE VOLTS	MAX. A.C. GRID VOLTS	MAX. P.E.A.C. CURRENT MA.	RECTIFIER CONNECTION	STYLE	OUTLINE NO.	STYLE	BASING
717A	PENTODE	6.3	.175	HEATER	CLASS A AMPLIFIER	120	120	2	7.5	2.5	4000	250						T-4½	ACORN				717A
950	PENTODE	2	0.12	DC FIL.	CLASS A AMPLIFIER	135	135	16.5	7	2	950	105	100	13,500	0.45			ST-14	MED. 5 PIN	78	5K		950
954	PENTODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	90	90	3	1.2	0.5	1100	1000						T-4½	ACORN				954
955	TRIODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	180	180	5	4.5	2000	12.5	25	25					T-4½	ACORN				955
956	PENTODE	6.3	0.15	HEATER	CLASS A AMPLIFIER	250	250	7	6.3	2200	11.4	25						T-4½	ACORN				956
1625	BEAM PENTODE	12.6	0.45	HEATER	CLASS C AMPLIFIER	750	250	45	100	6					50			ST-16	MED. 7 PIN BAY	89	5AZ		1625
1626	TRIODE	12.6	0.25	HEATER	CLASS C AMPLIFIER	250		32	25	2500	2.5							ST-12	8 PIN OCTAL	70	6Q		1626
1629	TRIODE INDICATOR	12.6	0.15	HEATER	TUNING INDICATOR													T-9	7 PIN OCTAL	50	7AL		1629
1654	DIODE	1.4	0.05	FIL.	HALF-WAVE RECTIFIER										2500	6	1	T-5½	MIN. 7 PIN				1654
9004	DIODE	6.3	0.15	HEATER	VHF DETECTOR													T-4½	ACORN		4BJ		9004
9005	DIODE	3.6	0.165	HEATER	VHF DETECTOR													T-4½	ACORN		5BG		9005
9006	DIODE	6.3	0.15	HEATER	DETECTOR RECTIFIER										270	750	5	T-5½	MIN. 7 PIN	3	6BH		9006
XXD	TWIN TRIODE	14.0	0.16	HEATER	CLASS A AMPLIFIER	250		10	9.0	2100	7.6	16						T-9	8 PIN LOC	26	8AC		XXD
XXL	TRIODE	7.0	0.32	HEATER	CLASS A AMPLIFIER	100		0	10.0	3600	7.0	25						T-9	8 PIN LOC	26	8AC		XXL

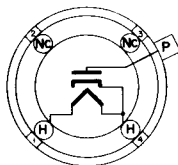
Shadow Angle: 90° at Zero Bias
0° at -8 V. Bias

Plate: 250 V. thru 1 Meg. 0.24 Ma.
Target: 250 V. 4 Ma.

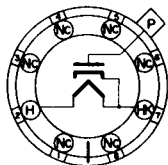
Max. AC Plate Voltage: 117 V. RMS
Max. DC Output Current: 5 mA.

Max. AC Plate Voltage: 117 V. RMS
Max. DC Output Current: 1.0 mA.

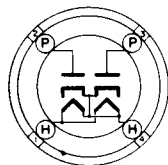
TUNG-SOL



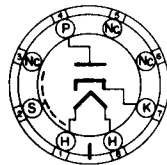
4AB



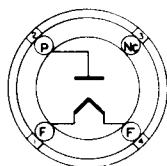
4AC



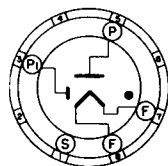
4AD



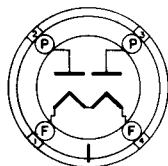
4AH



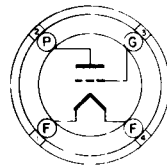
4B



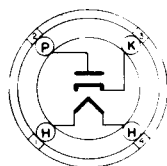
4BU



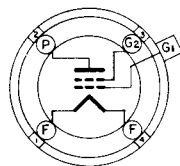
4C



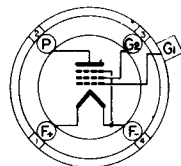
4D



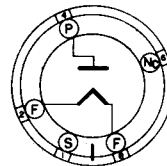
4G



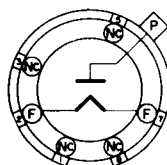
4K



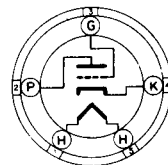
4M



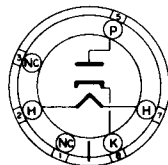
4X



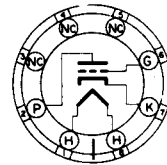
4Y



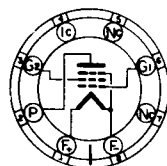
5A



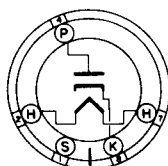
5AA



5AC



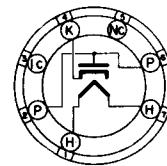
5AD



5AF



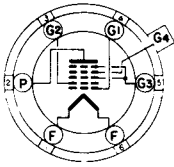
5AG



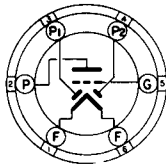
5AM

PRINTED IN U. S. A.

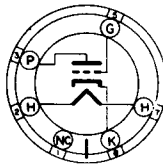
TUNG-SOL



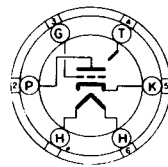
6L



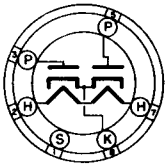
6M



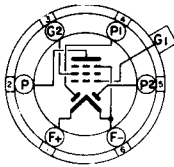
6Q



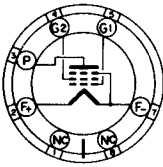
6R



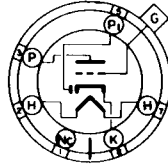
6S



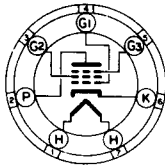
6W



6X



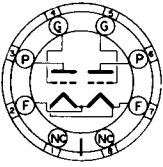
6Y



7A



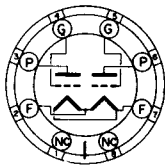
7AA



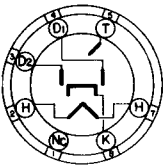
7AB



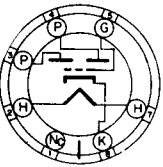
7AD



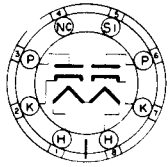
7AF



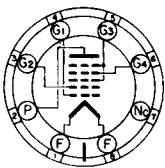
7AG



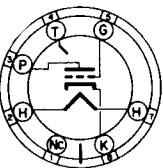
7AH



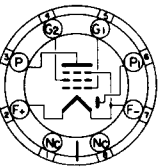
7AJ



7AK



7AL

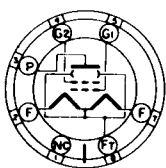


7AM

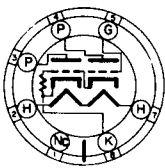


7AO

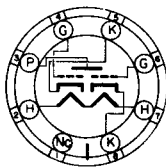
TUNG-SOL



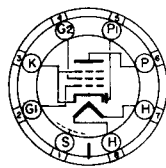
7AP



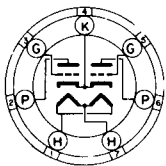
7AU



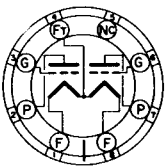
7AX



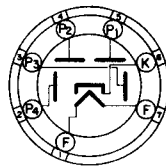
7AZ



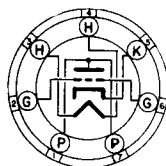
7B



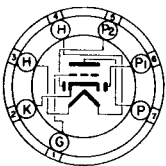
7BE



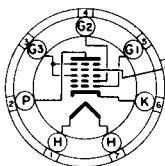
7BJ



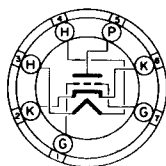
7BK



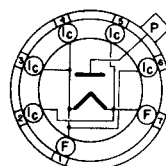
7BT



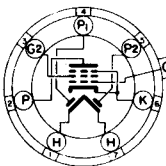
7C



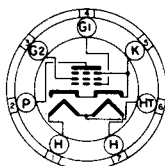
7CA



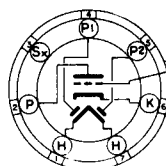
7CB



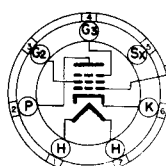
7D



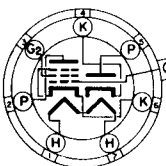
7F



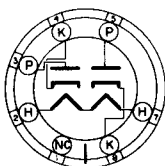
7G



7H



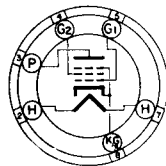
7K



7Q



7R



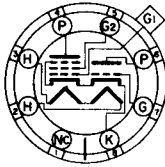
7S

PRINTED IN U. S. A.

TUNG-SOL



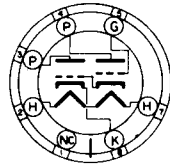
7T



7U



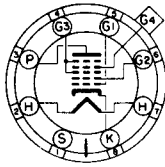
7V



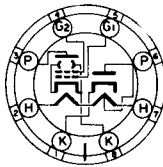
7W



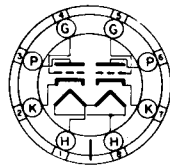
7Z



8A



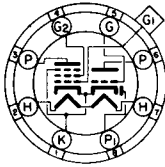
8AB



8AC



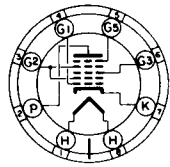
8AE



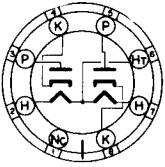
8AF



8AJ



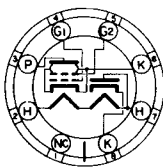
8AL



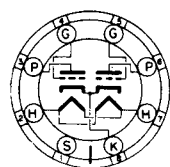
8AN



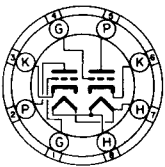
8AS



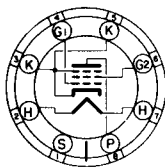
8AV



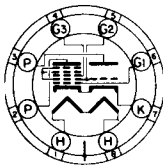
8B



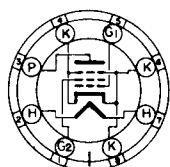
8BD



8BK



8BL

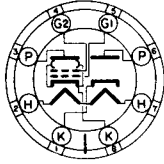


8BO

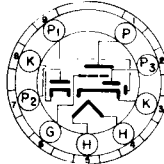
TUNG-SOL



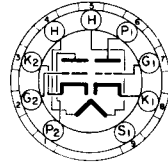
8Y



8Z



9AH



9AJ