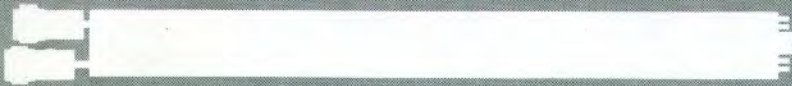
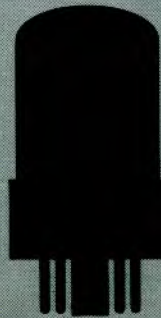


# RCA

## RECEIVING-TYPE TUBES FOR **INDUSTRY** AND **COMMUNICATIONS**



- "Premium" Tubes
- "Special Red" Tubes
- "Pencil" Tubes
- Computer Tubes
- Glow Discharge Tubes
- Small Thyratrons
- Low-Microphonic Amplifier Tubes
- Nuvistor Tubes
- Traveling-Wave Tubes
- and other Special Types



### RADIO CORPORATION OF AMERICA

ELECTRON TUBE DIVISION

HARRISON, N. J.

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Form No. RIT-104B

# PREMIUM TUBES

Designed to Meet Military Specifications and Critical Industrial Applications

RCA Type	Proto- type	Name	Description and/or Difference Between Type and Prototype	Special Tests and Controls											
				Shock	Fatigue	Vibration	Glass Strain	AF Noise, Microphonics	Stability	Inoperatives	High-Altitude	Life Test			
												Heater-Cycling	Room Temp.	Elevated Bulb Temp.	
Rating or Characteristic	Premium Type	Proto- Type													
<b>0A2-WA</b>	0A2	Voltage Regulator*	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	—	—	✓	✓	—	—	—	—
<b>0B2-WA</b>	0B2	Voltage Regulator*	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	—	—	✓	✓	—	—	—	✓
<b>2D21-W</b>	2D21	Thyratron Tetrode*	This type is designed to meet the indicated military specification.	✓	✓	✓	—	✓	—	—	—	—	—	—	—
<b>6AC7-W</b>	6AC7	Sharp-Cutoff Pentode* ■	This type is designed to meet the indicated military specification.	✓	✓	✓	—	✓	—	—	—	—	—	—	—
<b>6AU6-WA</b>	6AU6	Sharp-Cutoff Pentode*	This type is designed to meet the indicated military specification.	✓	✓	✓	—	✓	✓	✓	✓	—	—	—	✓
<b>6J4-WA</b>	6J4	High-Mu Triode*	This type is designed to meet the indicated military specification.	✓	✓	—	✓	—	✓	✓	✓	✓	✓	—	—
<b>6J6-WA</b>	6J6	Medium-Mu Twin Triode*	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓
<b>12AT7-WA</b>	12AT7	High-Mu Twin Triode §	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—
<b>5636</b>	—	Sharp-Cutoff Pentode*	Heater-Cathode Type. For gated amplifier, delay and mixer circuits up to 400 Mc, and gain-controlled amplifier circuits.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	✓
<b>5639</b>	—	Sharp-Cutoff Pentode*	Heater-Cathode Type. For use in high-gain wide-band circuits.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	✓
<b>5651</b>	—	Voltage Regulator*	For use in equipment where extreme voltage stability is required.	—	—	✓	—	✓	—	✓	—	—	—	—	—
<b>5651-WA</b>	—	Voltage Regulator*	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	✓	✓	✓	✓	—	—	—	✓
<b>5654</b>	6AK5	Sharp-Cutoff Pentode*	None	—	—	—	—	—	—	—	—	—	—	—	—
<b>5654 / 6AK5-W</b>	6AK5	Sharp-Cutoff Pentode*	For use as an rf or if amplifier in high-frequency broad-band communications receivers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	✓
<b>5654 / 6AK5-W / 6096</b>	6AK5	Sharp-Cutoff Pentode*	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	✓
<b>5670</b>	2C51	Medium-Mu Twin Triode §	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	✓
<b>5670-WA</b>	2C51	Medium-Mu Twin Triode §	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	✓
<b>5686</b>	—	Beam Power Tube §	Heater-Cathode Type. For renewal use only.	✓	✓	✓	✓	—	✓	✓	✓	✓	—	—	—
<b>5718</b>	—	Medium-Mu Triode*	Heater-Cathode Type. Uhf amplifier and oscillator. Useful power output at 500 Mc., nearly one watt.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	✓
<b>5719</b>	—	High-Mu Triode*	Heater-Cathode Type. Useful as an audio amplifier in mobile receivers.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	—	✓
<b>5725</b>	6AS6	Sharp-Cutoff Pentode*	Bulb Temperature, Max. °C (at hottest point)												
<b>5726</b>	6AL5	Twin Diode*	Controlled Plate-Current Balance												
<b>5726 / 6AL5-W</b>	6AL5	Twin Diode*	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	—	✓	✓	✓	✓	—	—	✓

For key to terminal connections see page 30.  
 \* 7-pin miniature type.    § 9-pin miniature type.  
 ■ Small wafer octal 8-pin type.



0A2-WA 0B2-WA  
5651 5651-WA



2D21-W



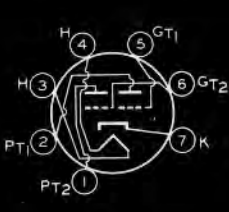
6AC7-W



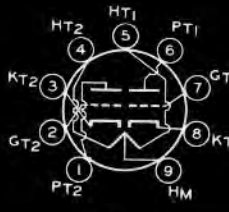
6AU6-WA



6J4-WA



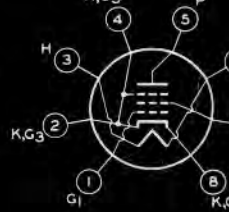
6J6-WA



12AT7-WA



5636



5639

# PREMIUM TUBES

Designed to Meet Military Specifications and Critical Industrial Applications

Cathode		Maximum Dimensions Inches		Class of Service	Maximum Ratings				Operating Conditions and Characteristics							Type		
					Plate Volts	Plate Dissipation Watts	Cathode Current Ma.	Grid-No. 2 Input Watts	Plate Supply Volts	Grid-No. 1 Volts(v) or Cathode Resistance Ohms	Grid-No. 2 Supply Volts	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance Micro-mhos	Amplification Factor		Power Output Watts	
Volts	Amps.	Length	Diam.															
Cold Cathode		2 5/8	3/4	Voltage Regulator	For data refer to MIL-E-1/290B specification <sup>▲</sup>												OA2-WA	
Cold Cathode		2 5/8	3/4	Voltage Regulator	For data refer to MIL-E-1/291 specification <sup>▲</sup>												OB2-WA	
6.3	0.6	2 1/8	3/4	High-Sensitivity Control Service	For data refer to MIL-E-1/756B specification <sup>▲</sup>												2D21-W	
6.3	0.45	2 5/8	—	Class A <sub>1</sub> Amplifier	For data refer to MIL-E-1/354 specification <sup>▲</sup>												6AC7-W	
6.3	0.3	2 1/8	3/4	Class A <sub>1</sub> Amplifier	For data refer to MIL-E-1/1 specification <sup>▲</sup>												6AU6-WA	
6.3	0.4	2 1/8	3/4	Class A <sub>1</sub> Amplifier for UHF Service	For data refer to MIL-E-1/619D specification <sup>▲</sup>												6J4-WA	
6.3	0.45	2 1/8	3/4	Class A <sub>1</sub> Amplifier Each Unit	For data refer to MIL-E-243B specification <sup>▲</sup>												6J6-WA	
6.3 12.6	0.3 0.15	2 3/16	7/8	Class A <sub>1</sub> Amplifier Each Unit	For data refer to MIL-E-1/3A specification <sup>▲</sup>												12AT7-WA	
6.3	0.15	1 3/8 †	0.383	Class A <sub>1</sub> Amplifier	165	1.1	—	0.7	100 100	150 150	100 100	5.6 4	110000 50000	3200 1950	Grid-No. 3 Volts, 0 Grid-No. 3 Volts, -1	—	—	5636
6.3	0.45	1 3/4 †	0.4	Class A <sub>1</sub> Amplifier	165	4.0	40	1.0	150	100	100	21	50000	9000	—	—	—	5639
Cold Cathode		2 1/8	3/4	Voltage-Reference Tube	Ambient Temp., -55° to +90°C Approx. DC Starting Volts, 107 Max. Starting Ma., 100 Min. DC Anode-Supply Volts, 115 Approx. DC Operating Volts, 87 Regulation Range, 1.5 to 3.5 Ma. Regulation Volts, 115												5651	
Cold Cathode		2 1/8	3/4	Voltage-Reference Tube	For data refer to MIL-E-1/825A specification <sup>▲</sup>												5651-WA	
6.3	0.175	1 3/4	3/4	Voltage-Reference Tube	200	1.65	—	0.55	180	180	120	2.4	500000	5100	—	—	—	5654
6.3	0.175	1 3/4	3/4	Voltage-Reference Tube	For data refer to MIL-E-1/4A specification <sup>▲</sup>												5654/ 6AK5-W	
6.3	0.175	1 3/4	3/4	Voltage-Reference Tube	For data refer to MIL-E-1/236 specification <sup>▲</sup>												5654/ 6AK5-W/ 6096	
6.3	0.35	1 3/4	7/8	Class A <sub>1</sub> Amplifier Each Unit	For data refer to MIL-E-1/5C specification <sup>▲</sup>												5670	
6.3	0.35	1 3/4	7/8	Class A <sub>1</sub> Amplifier Each Unit	For data refer to MIL-E-1/247 specification <sup>▲</sup>												5670-WA	
6.3	0.35	2 3/16	7/8	Class A <sub>1</sub> Amplifier	250	7.5	—	3.0	250	-12.5v	250	27	45000	3100	—	2.7	—	5686
6.3	0.15	1 3/8 †	0.4	Class C Amplifier and Oscillator	Maximum Ratings, Absolute Values: DC Plate Volts, 165 DC Grid Ma., 5.5 DC Grid Volts, -55 DC Plate Ma., 22 Plate Dissipation, 3.3 Watts												5718	
6.3	0.15	1 3/8 †	0.4	Class A <sub>1</sub> Amplifier	165	0.55	—	—	150	680	—	1.85	30500	2300	70	—	—	5719
6.3	0.175	1 3/4	3/4	Class A <sub>1</sub> Amplifier	200	1.65	20	0.55	120	-2v	120	5.2	—	3200	—	—	—	5725
6.3	0.3	1 3/4	3/4	Half-Wave Rectifier	Maximum Ratings, Absolute Values: Peak Inverse Plate Volts, 360 Peak Plate Ma. per Plate, 60 DC Output Ma. per Plate, 10 Peak Heater-Cathode Volts, ±360												5726	
6.3	0.3	1 3/4	3/4	Half-Wave Rectifier	For data refer to MIL-E-1/7B specification <sup>▲</sup>												5726/ 6AL5-W	

▲ A copy of this specification may be obtained from the Director of the Armed Services Electro-Standards Agency (ASESA) at Fort Monmouth, New Jersey.

† Excluding flexible leads.



# PREMIUM TUBES — Cont'd

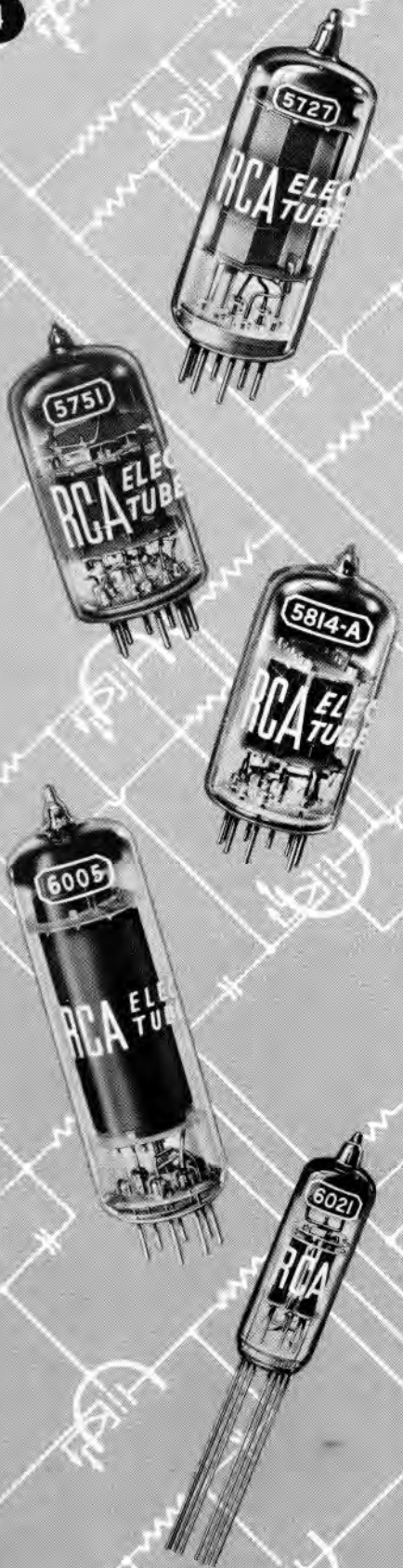
Designed to Meet Military Specifications and Critical Industrial Applications

RCA Type	Proto- type	Name	Description and/or Difference Between Type and Prototype	Special Tests and Controls										
				Shock	Fatigue	Vibration	Glass Strain	AF Noise, Microphonics	Stability	Inoperatives	High-Altitude	Heater-Cycling	Life Test	
													Room Temp.	Elevated Bulb Temp.
Rating or Characteristic	Premium Type	Proto- Type												
<b>5726 / 6AL5-W / 6097</b>	6AL5	Twin Diode*	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	—	✓	✓	✓	✓	—	✓
<b>5727</b>	2D21	Thyratron Tetrode*	Heater-Cathode Type. Relay, grid-controlled rectifier, and pulse-modulator service. Operates in a high-sensitivity circuit directly from a vacuum photo-tube.	✓	✓	✓	✓	—	✓	✓	✓	✓	—	✓
<b>5727 / 2D21-W</b>	2D21	Thyratron Tetrode*	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	—	✓	✓	✓	✓	—	✓
<b>5749</b>	6BA6	Remote-Cutoff Pentode*	Heater-Cathode Type. For high-grain rf or if amplifier service, and automatic-gain-control circuits.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓
<b>5749 / 6BA6-W</b>	6BA6	Remote-Cutoff Pentode*	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓
<b>5750</b>	6BE6	Pentagrid Converter*	Heater-Cathode Type. For renewal use only.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓
<b>5751</b>	12AX7	High-Mu Twin Triode§	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓
<b>5751-WA</b>	12AX7	High-Mu Twin Triode§	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓
<b>5814-A</b>	12AU7	Medium-Mu Twin Triode§	Heater Current Amp./Sect. Peak H-K Volts Controlled Plate-Current Balance	0.175 ± 100 Yes	0.15 ± 200 No	✓	✓	✓	✓	✓	✓	✓	—	✓
<b>5814-WA</b>	12AU7	Medium-Mu Twin Triode§	This type is designed to meet the indicated military specifications.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓
<b>5840</b>	—	Sharp-Cutoff Pentode*	Heater-Cathode Type. Useful as an rf or if amplifier tube in broadband circuits of mobile and aircraft equipment. Can be used up to 400 Mc. as an rf amplifier.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓
<b>5896</b>	—	Twin Diode*	Heater-Cathode Type. A low-current rectifier and detector at frequencies through the uhf regions.	✓	✓	✓	✓	—	✓	✓	✓	✓	—	✓
<b>5899</b>	—	Semiremote-Cutoff Pentode*	Heater-Cathode Type. For use in agc rf and if amplifier circuits up to 400 Mc.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓
<b>5902</b>	—	Beam-Power Tube*	Heater-Cathode Type. For use as an audio-amplifier and series-regulator tube in power supplies.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓
<b>6005</b>	6AQ5	Beam-Power Tube*	Max. Bulb Temperature, °C	225	250	✓	✓	✓	✓	✓	✓	✓	—	✓
<b>6005 / 6AQ5-W</b>	6AQ5	Beam-Power Tube*	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓
<b>6005 / 6AQ5-W / 6095</b>	6AQ5	Beam-Power Tube*	This type is designed to meet the indicated military specification.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓
<b>6021</b>	—	Medium-Mu Twin Triode*	For general-purpose oscillator and amplifier applications. Each unit has a separate cathode.	✓	✓	✓	✓	✓	✓	✓	✓	✓	—	✓

For key to terminal connections see page 30.

\* 7-pin miniature type.  
§ 9-pin miniature type.

• Subminiature type with flexible leads.  
■ DC component must not exceed 100 volts.



5726/6AL5-W/6097



5727  
5727/2D21-W



5749 5749/6BA6-W



5750



5751 5751-WA  
5814-A 5814-WA

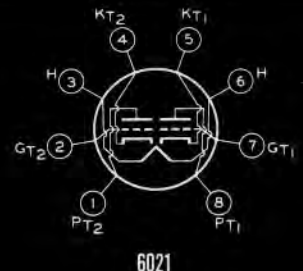
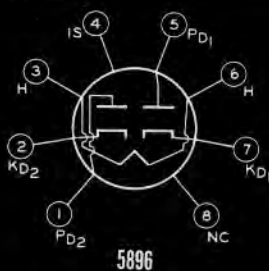
**PREMIUM TUBES - Cont'd**

Designed to Meet Military Specifications and Critical Industrial Applications

Cathode		Maximum Dimensions Inches		Class of Service	Maximum Ratings				Operating Conditions and Characteristics							RCA Type	
					Plate Volts	Plate Dissipation Watts	Cathode Current Ma.	Grid-No. 2 Input Watts	Plate Supply Volts	Grid-No. 1 Volts(v) or Cathode Resistance Ohms	Grid-No. 2 Supply Volts	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance Micro-mhos	Amplification Factor		Power Output Watts
6.3	0.3	1 3/4	3/4	Half-Wave Rectifier	For data refer to MIL-E-1/235A specification <sup>▲</sup>											5726/ 6AL5-W/ 6097	
6.3	0.6	2 1/8	3/4	Relay and Grid-Controlled Rectifier Service	Maximum Ratings: Peak Forward Anode Volts, 650      Peak Cathode Amp., 0.5 Peak Inverse Anode Volts, 1300      Av. Cathode Amp., 0.1 Fault Cathode Amp., 10											5727	
6.3	0.6	2 1/8	3/4	Control Service	For data refer to MIL-E-1/83B specification <sup>▲</sup>											5727/ 2D21-W	
6.3	0.3	2 1/8	3/4	Class A <sub>1</sub> Amplifier	300	3.0	—	0.6	100 250	68 68	100 100	10.8 11	250000 1000000	4300 4400	—	—	5749
6.3	0.3	2 1/8	3/4	Class A <sub>1</sub> Amplifier	For data refer to MIL-E-1/8 specification <sup>▲</sup>											5749/ 6BA6-W	
6.3	0.3	2 3/16	7/8	Converter Service Separate Excitation	300	1.0	14	1.0	100	—	100	2.6	400000	Osc. Grid Volts (rms.), 10		5750	
6.3 12.6	0.35 0.175	2 3/16	7/8	Class A <sub>1</sub> Amplifier Each Unit	For data refer to MIL-E-1/10A specification <sup>▲</sup>											5751	
6.3 12.6	0.35 0.175	2 3/16	7/8	Class A <sub>1</sub> Amplifier Each Unit	For data refer to MIL-E-1/237 specification <sup>▲</sup>											5751-WA	
6.3 12.6	0.35 0.175	2 3/16	7/8	Class A <sub>1</sub> Amplifier Each Unit	For data refer to MIL-E-1/12A specification <sup>▲</sup>											5814-A	
6.3 12.6	0.35 0.175	2 3/16	7/8	Class A <sub>1</sub> Amplifier Each Unit	For data refer to MIL-E-1/238A specification <sup>▲</sup>											5814-WA	
6.3	0.15	1 3/8 †	0.4	Class A <sub>1</sub> Amplifier	165	1.1	16.5	0.55	100	150	100	7.5	260000	5000	—	—	5840
6.3	0.3	1 3/8 †	0.4	Full-Wave Rectifier	For data refer to MIL-E-1/174C specification <sup>▲</sup>											5896	
6.3	0.15	1 3/8 †	0.4	Class A <sub>1</sub> Amplifier	165	1.1	16.5	0.55	100	120	100	7.2	260000	4500	Grid-No. 1 Volts for Cutoff, -14		5899
6.3	0.45	1 3/4 †	0.4	Class A <sub>1</sub> Amplifier	165	4.0	50	1.0	110	270	110	30	15000	4200	Grid-No. 1 Volts for Cutoff, -40		5902
6.3	0.45	2 5/8	3/4	Class A <sub>1</sub> Amplifier	275	11	—	2.2	180 250	— 8.5v -12.5v	180 250	29 45	58000 52000	3700 4100	—	2 4.5	6005
6.3	0.45	2 5/8	3/4	Class A <sub>1</sub> Amplifier	For data refer to MIL-E-1/13B specification <sup>▲</sup>											6005/ 6AQ5-W	
6.3	0.45	2 5/8	3/4	Class A <sub>1</sub> Amplifier	For data refer to MIL-E-1/239 specification <sup>▲</sup>											6005/ 6AQ5-W/ 6095	
6.3	0.3	1 3/8 †	0.4	Class A <sub>1</sub> Amplifier Each Unit	165	1.1	—	—	100	150	—	6.5	6500	5400	35	Grid Volts for Cutoff, -6.5	6021

<sup>▲</sup> A copy of this specification may be obtained from the Director of the Armed Services Electro-Standards Agency (ASESA) at Fort Monmouth, New Jersey.

† Excluding flexible leads.



# PREMIUM TUBES — Cont'd

Designed to Meet Military Specifications and Critical Industrial Applications

RCA Type	Proto-type	Name	Description and/or Difference Between Type and Prototype			Special Tests and Controls														
						Shock	Fatigue	Vibration	Glass Strain	AF Noise, Microphonics	Stability	Inoperatives	High-Altitude	Life Test						
			Rating or Characteristic	Premium Type	Proto-Type									Heater-Cycling	Room Temp.	Elevated Bulb Temp.				
<b>6072</b>	12AY7	Medium-Mu Twin Triode §	Heater Current, Amperes, for Heater Volts = 6.3	0.35	0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			For renewal use only.																	
			None																	
<b>6073</b>	0A2	Voltage Regulator*	Like 0A2, but intended for voltage-regulator applications critical as to shock and vibration.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			None																	
<b>6073/OA2</b>	0A2	Voltage Regulator*	Like 0A2, but intended for voltage-regulator applications critical as to shock and vibration.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			None																	
<b>6074</b>	0B2	Voltage Regulator*	Like 0B2 but intended for voltage-regulator applications critical as to shock and vibration.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			None																	
<b>6074/OB2</b>	0B2	Voltage Regulator*	Like 0B2 but intended for voltage-regulator applications critical as to shock and vibration.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			None																	
<b>6080-WA</b>	6AS7-G	Low-Mu Twin Power Triode <sup>§</sup>	This type is designed to meet the indicated military specification.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>6099</b>	6J6	Medium-Mu Twin Triode*	Special Air Force application only. For other military uses, the 6101/6J6-WA is recommended.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Plate Dissip., Watts	0.85	1.5															
			Plate Res., Ohms	6300	7100															
			Transcon., μmhos	6000	5300															
			Peak H-K Volts	±180	±100															
<b>6101</b>	6J6	Medium-Mu Twin Triode*	This type is designed to meet the indicated military specification.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>6101/6J6-WA</b>	6J6	Medium-Mu Twin Triode*	This type is designed to meet the indicated military specification.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>6111</b>	—	Medium-Mu Twin Triode*	General-purpose amplifier. Also used as a combined oscillator and mixer tube in vhf applications.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>6112</b>	—	High-Mu Twin Triode*	Heater-Cathode Type. Low-level audio amplifier. Designed to meet indicated military specification.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Input Capacitance (μμf)	6.0	5.5															
<b>6136</b>	6AU6	Sharp-Cutoff Pentode*	For high-frequency broad-band applications.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			None																	
<b>6186</b>	6AG5	Sharp-Cutoff Pentode*	RF Amplifier.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>6186/6AG5-WA</b>	6AG5	Sharp-Cutoff Pentode*	This type is designed to meet the indicated military specification.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>6189/12AU7-WA</b>	12AU7	Medium-Mu Twin Triode §	This type is designed to meet the indicated military specification.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			None																	
<b>6201</b>	12AT7	High-Mu Twin Triode §	Mixer, oscillator and amplifier at frequencies up to 300 Mc.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>6205</b>	5840	Sharp-Cutoff Pentode*	Grid-No. 3 brought out to separate pin	Yes	No	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Grid-No. 2 Ma.	2.2	2.0															
<b>6206</b>	5899	Semiremote-Cutoff Pentode*	Similar to 5899 but uses a separate terminal for grid No. 3.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>6626/OA2-WA</b>	0A2	Voltage Regulator*	This type is designed to meet the indicated military specification.			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

For key to terminal connections see page 30.  
 \* 7-pin miniature type.  
 § 9-pin miniature type.

△ Large wafer octal 8-pin type with metal sleeve.  
 • Subminiature type with flexible leads.



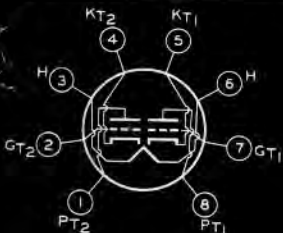
# PREMIUM TUBES — Cont'd

Designed to Meet Military Specifications and Critical Industrial Applications

Cathode		Maximum Dimensions Inches		Class of Service	Maximum Ratings				Operating Conditions and Characteristics							Type	
					Plate Volts	Plate Dissipation Watts	Cathode Current Ma.	Grid-No. 2 Input Watts	Plate Supply Volts	Grid-No. 1 Volts(v) or Cathode Resistance Ohms	Grid-No. 2 Supply Volts	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance Micro-mhos	Amplification Factor		Power Output Watts
Volts	Amps.	Length	Diam.														
6.3 12.6	0.35 0.175	2 <sup>3</sup> / <sub>16</sub>	7/8	Class A <sub>1</sub> Amplifier Each Unit	300	1.5	—	—	250	-4v	—	3.0	25000	1750	44	Grid Volts for Cut-off, -8	<b>6072</b>
Cold Cathode	2 <sup>5</sup> / <sub>8</sub>	3/4	Voltage Regulator	Ambient Temp., -55 to +90°C Approx. DC Starting Volts, 156 Min. DC Anode-Supply Volts, 185							Approx. DC Operating Volts, 151 Regulation Range, 5 to 30 Ma. Regulation Volts, 2				<b>6073</b>		
Cold Cathode	2 <sup>5</sup> / <sub>8</sub>	3/4	Voltage Regulator	Ambient Temp., -55 to +90°C Approx. DC Starting Volts, 156 Min. DC Anode-Supply Volts, 185							Approx. DC Operating Volts, 151 Regulation Range, 5 to 30 Ma. Regulation Volts, 2				<b>6073/ OA2</b>		
Cold Cathode	2 <sup>5</sup> / <sub>8</sub>	3/4	Voltage Regulator	Ambient Temp., -55 to +90°C Approx. DC Starting Volts, 115 Min. DC Anode-Supply Volts, 133							Approx. DC Operating Volts, 108 Regulation Range, 5 to 30 Ma. Regulation Volts, 1				<b>6074</b>		
Cold Cathode	2 <sup>5</sup> / <sub>8</sub>	3/4	Voltage Regulator	Ambient Temp., -55 to +90°C Approx. DC Starting Volts, 115 Min. DC Anode-Supply Volts, 133							Approx. DC Operating Volts, 108 Regulation Range, 5 to 30 Ma. Regulation Volts, 1				<b>6074/ OB2</b>		
6.3	2.5	4 <sup>1</sup> / <sub>4</sub>	1.72	DC Amplifier	For data refer to MIL-E-1/510B specification <sup>▲</sup>											<b>6080-WA</b>	
6.3	0.45	2 <sup>1</sup> / <sub>8</sub>	3/4	Class A <sub>1</sub> Amplifier Each Unit	For government end use only											<b>6099</b>	
6.3	0.45	2 <sup>1</sup> / <sub>8</sub>	3/4	Class A <sub>1</sub> Amplifier Each Unit	330	0.85	—	—	100	Cath. Res., 50 Ohms Common to Both Units		3.5	6300	6000	38	—	<b>6101</b>
6.3	0.45	2 <sup>1</sup> / <sub>8</sub>	3/4	Class A <sub>1</sub> Amplifier Each Unit	For data refer to MIL-E-1/243A specification <sup>▲</sup>											<b>6101/ 6J6-WA</b>	
6.3	0.3	1 <sup>3</sup> / <sub>8</sub> †	0.4	Class A <sub>1</sub> Amplifier Each Unit	165	1.1	Neg. DC Grid Volts, 55		100	220	—	8.5	4000	5000	20	Grid Volts for Cut-off, -9	<b>6111</b>
6.3	0.3	1 <sup>3</sup> / <sub>8</sub> †	0.4	Class A <sub>1</sub> Amplifier Each Unit	For data refer to MIL-E-1/190C specification <sup>▲</sup>											<b>6112</b>	
6.3	0.3	2 <sup>1</sup> / <sub>8</sub>	3/4	Class A <sub>1</sub> Amplifier	300	3.0	—	0.65	100 250	150 68	100 150	5 10.6	500000 1000000	3900 5200	Cutoff Volts, -4.2 Cutoff Volts, -6.5		<b>6136</b>
6.3	0.3	2 <sup>1</sup> / <sub>8</sub>	3/4	Class A <sub>1</sub> Amplifier	330	2.5	—	0.55	250	200	150	7.0	—	5000	—	—	<b>6186</b>
6.3	0.3	2 <sup>1</sup> / <sub>8</sub>	3/4	Class A <sub>1</sub> Amplifier	For data refer to MIL-E-1/244A specification <sup>▲</sup>											<b>6186/ 6AG5-WA</b>	
6.3 12.6	0.3 0.15	2 <sup>3</sup> / <sub>16</sub>	7/8	Class A <sub>1</sub> Amplifier Each Unit	For data refer to MIL-E-1/246A specification <sup>▲</sup>											<b>6189/ 12AU7-WA</b>	
6.3 12.6	0.3 0.15	2 <sup>3</sup> / <sub>16</sub>	7/8	Class A <sub>1</sub> Amplifier Each Unit	300	2.5	Neg. DC Grid Volts, 50		100 250	270 200	— —	3.3 10	14300 10900	4000 5500	57 60	—	<b>6201</b>
6.3	0.15	1 <sup>3</sup> / <sub>8</sub> †	0.4	Class A <sub>1</sub> Amplifier	165	1.1	16.5	0.55	100	150	100	7.5	260000	5000	Cutoff Volts, -9		<b>6205</b>
6.3	0.15	1 <sup>3</sup> / <sub>8</sub> †	0.4	Class A <sub>1</sub> Amplifier	165	1.1	16.5	0.55	100	120	100	7.2	260000	4500	—	—	<b>6206</b>
Cold Cathode	2 <sup>5</sup> / <sub>8</sub>	3/4	Voltage Regulator	For data refer to MIL-E-1/939B specification <sup>◆</sup>											<b>6626/ OA2-WA</b>		

<sup>▲</sup> A copy of this specification may be obtained from the Director of the Armed Services Electro-Standards Agency (ASESA) at Fort Monmouth, New Jersey.  
<sup>◆</sup> A copy of this specification may be obtained from the Bureau of Ships, Department of the Navy, Washington 25, D. C.

† Excluding flexible leads.



6111 6112



6136



6186  
6186/6AG5-WA



6205 6206



6626/OA2-WA

# NUVISTOR TRIODE

General-Purpose Type for Critical Industrial Applications

Type	Name	Description	Special Tests and Controls										
			Shock	Fatigue	Variable-Frequency Vibration	High Altitude	Heater Cycling	Intermittent Shorts	Inter-electrode Leakage	Life Tests			
										Early-Hour Stability	100-Hour Performance	1000-Hour Performance	
<b>7586</b>	Medium-Mu Triode	Heater-cathode type; metal shell with indexing lugs; weight approximately 1/15 ounce (1.9 grams).	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

# SPECIAL RED TUBES

For Critical Industrial Applications Where 10000-Hour Life, Extreme Dependability, and Exceptional Stability are Paramount

Type	Proto-type	Name	Description and/or Difference Between Type and Prototype			Special Tests and Controls										
						Shock	Fatigue	Vibration	Base Torsion	AF Noise, Microphonics	Stability	Inoperatives	High-Altitude	Heater-Cycling	Life Test	
			Rating or Characteristic	Premium Type	Proto-Type										500-Hour	1000-Hour
<b>5690</b>	—	Full-Wave Vacuum Rectifier $\phi$	Heater-Cathode Type. Each unit has its own heater and cathode with individual base-pin connections. Full ratings up to 40000 feet.			✓	✓	✓	✓	—	✓	✓	✓	✓	✓	✓
<b>5691</b>	6SL7-GT	High-Mu Twin Triode $\phi$	Heater Current	0.6	0.3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Max. Plate Volts	275	300											
			Peak H-K Volts	$\pm 100$	$\pm 90$											
			Heaters in series for fail-safe operation	Yes	No											
<b>5692</b>	6SN7-GT	Medium-Mu Twin Triode $\phi$	Max. Plate Volts	275	300	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Plate Dissip., Watts	1.75	2.5											
			Peak H-K Volts	$\pm 100$	$\pm 200$											
			Heaters in series for fail-safe operation	Yes	No											
<b>5693</b>	6SJ7	Sharp-Cutoff Pentode $\ddagger$	Plate Dissip., Watts	2	2.5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
			Grid-No. 2 Input Watts	0.3	0.7											
			Peak H-K Volts	$\pm 100$	$\pm 90$											

For key to terminal connections see page 30.

$\phi$  Glass-octal 8-pin type.

$\ddagger$  Metal-octal 8-pin type.



INDEX=LARGE LUG  
●=PIN CUT OFF

7586



5690



# ← NUVISTOR TRIODE

General-Purpose Type for Critical Industrial Applications

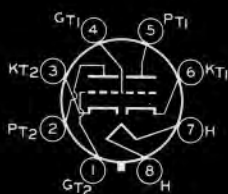
Cathode		Maximum Dimensions Inches		Maximum Ratings					Characteristics — Class A <sub>1</sub> Amplifier										Type
				Plate Supply	Plate	Plate Dissipation	Grid Current	Plate Current	Plate Supply	Plate	Grid Supply	Cathode Resistor	Grid-Circuit Resistance	Amplification Factor	AC Plate Resistance (Approx.)	Trans-conductance Micro-mhos	Plate Current		
Volts	Amps.	Length	Diam.	Volts	Volts	Watts	Ma.	Ma.	Volts	Volts	Volts	Ohms	Ohms		Ohms	Micro-mhos	Ma.		
6.3	0.14	0.800	0.440	330	110	1.0	2.0	20	—	26.5	0	—	500000	31	4400	7000	2.8		
									75	—	0	130	—	33	2900	11500	10.5		

# ← SPECIAL RED TUBES

For Critical Industrial Applications Where 10000-Hour Life,  
Extreme Dependability, and Exceptional Stability are Paramount

Cathode		Maximum Dimensions Inches		Class of Service	Maximum Ratings				Operating Conditions and Characteristics								 Type
					Plate Volts	Plate Dissipation	Cathode Current	Grid-No. 2 Input	Plate Supply	Grid-No. 1 Volts(v) or Cathode Resistance	Grid-No. 2 Supply	Plate Current	AC Plate Resistance	Trans-conductance Micro-mhos	Amplification Factor	Power Output	
Volts	Amps.	Length	Diam.	Watts	Ma.	Watts	Volts	Volts	Ma.	Ohms	Volts	Ma.	Ohms	Micro-mhos		Watts	
12.6 6.3	1.2 2.4	4 1/4	1 23/32	Full-Wave Rectifier with Capacitive Input Filter	AC Volts per Plate (RMS), 350 Filter Input Capacitor, 10 μf DC Output Volts at 110 Ma., 355 DC Output Volts at 55 Ma., 415				Max. Peak Inverse Plate Volts, 1120 Max. Peak Plate Ma. per Plate, 375 Max. Av. Plate Ma. per Plate, 62.5 Total Effect-Supply Imped. per Plate, 350 Ohms								5690
				Full-Wave Rectifier with Inductive Input Filter	AC Volts per Plate (RMS), 350 Filter Input Choke, 10 henries DC Output Volts at 135 Ma., 300 DC Output Volts at 67.5 Ma., 305				Max. Peak Inverse Plate Volts, 1120 Max. Peak Plate Ma. per Plate, 375 Max. Av. Plate Ma. per Plate, 75								
6.3	0.6	2 7/8	1 9/32	Industrial Service (Each Unit)	275	1.0	10	—	250	-2v	—	2.3	44000	1600	70	—	5691
					Max. Plate Current for Grid Volts at -5.5, 15 μa				Max. Reverse Grid Current, 0.2 μa								
6.3	0.6	2 7/8	1 9/32	Industrial Service (Each Unit)	275	1.75	15	—	250	-9v	—	6.5	9100	2200	20	—	5692
					Max. Plate Current for Grid Volts at -24, 15 μa				Max. Reverse Grid μa, 0.2								
6.3	0.3	2 5/8	1 5/16	Industrial Service	300	2.0	10	0.3	250	-3v	100	3.0	1.0**	1650	—	—	5693
					Max. Plate μa 80, at Grid-No. 1 Volts, -7.5				Max. Reverse Grid-No. 1 Current, 0.1 μa								
								Max. Plate μa 750, at Grid-No. 3 Volts, -70									

\*\* Minimum megohms.




5691 5692



5693



 Type	Description
<b>PENCIL TUBES</b>	
<b>5675</b>	Medium-Mu Triode. For use in cathode-drive service as a class C rf power amplifier and oscillator. Useful up to 3000 Mc.
<b>5876</b>	General-Purpose, High-Mu Triode. For use in cathode-drive circuits as an rf amplifier, if amplifier, or mixer tube in receivers operating at frequencies up to 1000 Mc; as a frequency multiplier up to about 1500 Mc, and as an oscillator up to 1700 Mc.
<b>5876-A</b>	High-Mu Triode. Like the 5876 but intended for military and critical industrial applications.
<b>5893</b>	Medium-Mu Triode. For cathode-drive service as a plate-pulsed oscillator up to 3300 Mc. May also be used as an rf power amplifier, cw oscillator, or frequency doubler up to 1000 Mc.
<b>6263</b>	Medium-Mu Triode. Has external plate radiator. For use in cathode-drive service as an rf power amplifier and oscillator at frequencies up to 1700 Mc. Can be used in mobile equipment, and in aircraft transmitters at altitudes up to 60,000 feet without pressurized chambers.
<b>6264-A</b>	Medium-Mu Triode. Like the 6263 but has a mu of 40. Especially useful as a frequency multiplier. Intended for military and critical industrial applications.
<b>6562/ 5794-A</b>	Fixed-Tuned Oscillator Triode. Has two resonators integral with tube. Intended for radiosonde applications at 1680 Mc.
<b>7533</b>	Tunable Oscillator Triode. Has two resonators integral with the tube. Intended for radiosonde applications between 1660 Mc and 1700 Mc.
<b>7552</b>	High-Mu Triode type with ceramic-metal seals. For use in cathode-drive service as a low noise uhf amplifier at frequencies up to 1000 Mc and above. For compact mobile and aircraft equipment at altitudes up to 100,000 feet without pressurization.
<b>7554</b>	High-Mu Triode type with ceramic-metal seals. For use at frequencies up to 3000 Mc in cathode-drive service as an uhf power amplifier, oscillator and frequency multiplier in compact mobile and aircraft equipment at altitudes up to 100,000 feet without pressurization.

The heater leads for the Pencil tubes with the exceptions of types 6562, 7533, 7552, and 7554 fit the Cinch Socket, No. 54A1635, or equivalent. Connections to the plate, grid, and cathode terminals require flexible spring contacts. The cathode of the 6562 is externally connected to one of the heater leads.

G terminals nearer filament leads; P terminals nearer bulb tip.

G caps nearer base; P caps nearer bulb tip.



5675 5876 5876-A 5893  
6263 6264-A 7552 7554

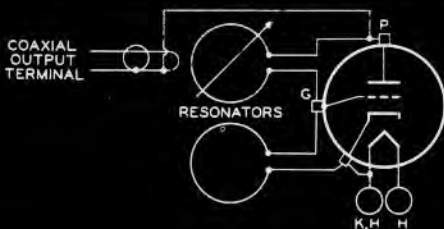
# ← TUBES FOR UHF APPLICATIONS

Heater (H) or Filament		Max. Dimensions Inches		Amplification Factor	Class of Service	Max. Frequency for Full Input Mc	Max. Plate Ratings† Absolute Values			Typical Operating Conditions†						RCA Type	
							Volts	DC Input Watts	Dissipation Watts	Plate Volts	Grid Volts	Peak AF Grid-to-Grid Volts	Plate Amperes	Plate-to-Plate Load Ohms	Approx. Driving Power Watts		Approx. Power Output Watts
<b>PENCIL TUBES</b>																	
6.3	0.135	2.252	0.816 <sup>aa</sup>	20	C-T	—	300	9	9	120	-8	—	0.025	—	—	0.475	<b>5675</b>
										Oscillator at 1700 Mc →							
6.3	0.135	2.252	0.816 <sup>aa</sup>	56	C-T	—	360	9	6.25	250	-2	—	0.023	—	—	0.75	<b>5876</b>
										Oscillator at 1700 Mc →							
				C-M	—	330	7.5	6.25	300	-70	—	0.017	—	2	2		
										Doubler to 960 Mc →							
For data refer to MIL-E-1/1043 (USAF) specification <sup>xx</sup>																	
6	0.28	2.297	0.816 <sup>aa</sup>	27	Maximum Ratings for Plate-Pulsed Oscillator Service—Class C: Maximum "On" Time, 5 μsec in Any 5000 μsec Interval Peak Positive-Pulse Plate Supply Volts, 1750 Peak Plate Amperes, 3 Plate Dissipation, 6 watts Pulse Duration, 1.5 μsec										<b>5893</b>		
6	0.28	2.63	1.01 <sup>bb</sup>	27	• C-P	500	330	15	9	320	-52	—	0.035	—	2.4 <sup>m</sup>	8 <sup>p</sup>	<b>6263</b>
					• C-T	500	400	22	13	350	-35	—	0.04	—	—	7 <sup>p</sup>	
										Oscillator at 500 Mc →							
										Rf Power Amp. at 500 Mc →							
For data refer to MIL-E-1/1045 (USAF) specification <sup>xx</sup>																	
5.2 to 6.6	0.16 at 6.0 volts	3.256 <sup>c</sup>	0.865 <sup>a</sup>	—	C-T	Frequency (approx.), 1680 Mc. Frequency Adjustment Range, ±12 Mc Max. Frequency Drift, +4 to -1 Mc Plate-Voltage Range, 117 to 95 Volts Ambient Temp. Range +22 to -40°C Power Output (approx.), 600 mw										<b>6562 / 5794-A</b>	
5.2 to 6.6	0.16 at 6.0 volts	3.23 <sup>c</sup>	0.865 <sup>a</sup>	—	C-T	Frequency (approx.), 1680 Mc. Frequency Adjustment Range, ±20 Mc Max. Frequency Drift, +4 to -1 Mc Plate-Voltage Range, 117 to 95 Volts Ambient Temp. Range +22 to -40°C Power Output (approx.), 575 mw										<b>7533</b>	
6.3	0.225	1.62	0.557	70	A <sub>1</sub>	1000	250	—	2.5	125	Cathode Resistor 50 ohms	0.014	Power Gain: <sup>zz</sup> 16.5 db. above 70 dbm Noise Factor: 6.5 db		<b>7552</b>		
										Amplifier at 500 Mc →							
6.3	0.225	1.62	0.557	70	C-T	1000	250 <sup>h</sup>	—	2.5	203 <sup>h</sup>	3π	—	0.024 <sup>yy</sup>	—	—	1.3 <sup>p</sup>	<b>7554</b>
															Oscillator at 1000 Mc →		
					C-M	1000	250 <sup>h</sup>	—	2.5	218 <sup>h</sup>	18π	—	0.021 <sup>yy</sup>	—	0.8 <sup>m</sup>	0.9 <sup>p</sup>	
										Doubler to 1000 Mc →							

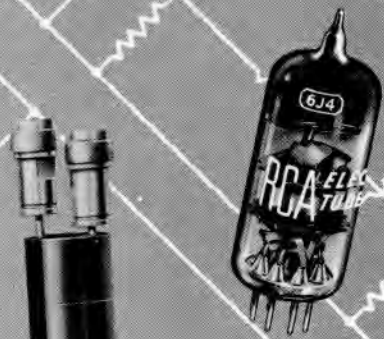
Note: To facilitate comparison between types, all ratings are given on an absolute-maximum basis.  
 † Unless otherwise specified, all values shown are for Continuous Commercial Service.  
 • Intermittent Commercial and Amateur Service.  
<sup>h</sup> Plate-to-grid volts.  
<sup>π</sup> Cathode-to-grid volts.  
<sup>a</sup> Maximum radius.  
<sup>c</sup> Excluding flexible leads.  
<sup>m</sup> Driver power output.  
<sup>p</sup> Useful power output.  
<sup>yy</sup> Cathode current.  
<sup>zz</sup> For bandwidth of 5 Mc.  
<sup>aa</sup> Including grid flange.  
<sup>bb</sup> Including radiator fin.  
<sup>xx</sup> A copy of this specification may be obtained from the Commander, Wright-Patterson AFB, Attn., EWBFER, Wright-Patterson Air Force Base, Ohio.

### EXPLANATION OF CLASS-OF-SERVICE ABBREVIATIONS

A<sub>1</sub> = Class A<sub>1</sub> RF Amplifier Service.  
 C-P = Class C Plate-Modulated Telephone Service.  
 C-M = Class C Frequency-Multiplier Service.  
 C-T = Class C Telegraph Service.  
**NOTE:** In Classes of Service A<sub>1</sub>, C-P, C-M, and C-T, the values shown under Maximum Plate Ratings and Typical Operating Conditions are for one tube.

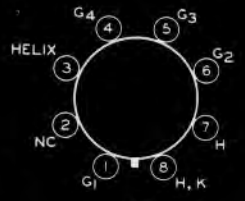


**TUBES FOR UHF APPLICATIONS - Cont'd**

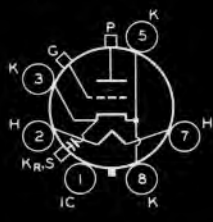


Type	Description
<b>TRAVELING-WAVE TUBES</b>	
<b>4009</b>	Helix-transmission line type with built-in periodic permanent magnet focusing. Frequency range 2000 to 4000 Mc. Low-power amplifier tube for driver applications and for first stage of wide-band microwave receivers not requiring a low-noise figure; also for grid-No. 1 pulsed applications involving negligible driving power.
<b>4010</b>	Helix-transmission line type with built-in periodic permanent magnet focusing. Frequency range 2000 to 4000 Mc. Intermediate power amplifier for use as driver of higher-power traveling-wave tubes; or as output stage in applications requiring power output of 1.5 watts or less.
<b>6861</b>	Low-noise, low-level amplifier tube of the helix-transmission line type. Frequency range, 2700 to 3500 Mc. For use in input stage of radar, scatter propagation and other microwave receivers, and in if amplifier service.
<b>OTHER UHF TYPES</b>	
<b>2C40</b>	Lighthouse Triode. For use as an RF amplifier at frequencies up to 1200 Mc and as a continuous-wave oscillator at frequencies up to 3370 Mc. Octal 6-pin base.
<b>2C43</b>	Lighthouse Triode. Similar to Type 2C40 except for higher dissipation rating. For use as a continuous-wave oscillator at frequencies up to 1500 Mc.
<b>6F4</b>	Oscillator Triode. Acorn type with a heater-cathode. For use at frequencies up to 1200 Mc.
<b>6J4</b>	High-Mu Triode. 7-pin miniature type with a heater-cathode. For use in cathode-drive circuits. Has a mu of 55 and a gm of 12000 micromhos. Useful up to about 500 Mc.
<b>6L4</b>	Oscillator Triode. Similar to 6F4 but operates at a higher plate voltage, has higher amplification factor, and lower grid-to-plate capacitance.
<b>954</b>	Sharp-Cutoff Pentode. Acorn type with a heater-cathode. For use at frequencies up to 430 Mc.
<b>955</b>	Medium-Mu Triode. Acorn type with a heater-cathode. For use at frequencies up to 600 Mc.
<b>956</b>	Remote-Cutoff Pentode. Acorn type with a heater-cathode. For use at frequencies up to 430 Mc.
<b>957</b>	Medium-Mu Triode. Acorn type with a coated filament for operation from a dry-cell supply.
<b>958-A</b>	Medium-Mu Triode. Acorn type with a coated filament. Designed for transmitter service. Useful up to 350 Mc.
<b>959</b>	Sharp-Cutoff Pentode. Acorn type with a coated filament for operation from a dry-cell supply.
<b>5718</b>	Medium-Mu Triode. Subminiature type. For use as an rf power amplifier and oscillator in uhf applications critical as to shock and vibration. Useful power output of nearly 1 watt at 500 Mc. Full input up to 1000 Mc.
<b>6026</b>	Oscillator Triode. Subminiature type. Intended particularly as an oscillator for transmitting service in radiosonde and similar applications at 400 Mc.
<b>9001</b>	Sharp-Cutoff Pentode. 7-pin miniature type with a heater-cathode. Electrically similar to the 954.

**Lead Color Code**  
 Heater (2) Brown  
 Collector Red  
 Helix Orange  
 Grid No. 2 Blue  
 Grid No. 1 Green  
 Cathode Yellow



4009 4010                      6861



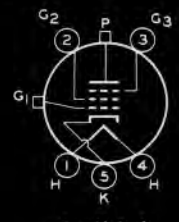
2C40 2C43



6F4 6L4



6J4



See Note 1  
954 956



See Note 2  
955

For key to terminal connections see page 30.  
 Note 1: P is on long part of bulb (top); G is on short part of bulb.  
 Note 2: Long part of bulb is top.

**TUBES FOR UHF APPLICATIONS — Cont'd**

Cathode		Maximum Dimensions Inches		Class of Service	Maximum Ratings			Typical Operation								Type	
					DC Plate Volts	DC Current Plate Ma.	Plate Dissipation Watts	Plate Supply Volts	Grid-No. 1 Volts(v) or Cathode Resistance Ohms	Grid-No. 2 Supply Volts	Grid-No. 2 Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance Micro-mhos	Amplification Factor		Power Output Watts
<b>TRAVELING-WAVE TUBES</b>																	
6.3	1.3	15 <sup>3</sup> / <sub>8</sub> ▲	∅	RF Amplifier	1000*	5.0*	—	Typical Operation at 3000 Mc: DC Collector Volts, 700 Gain at 10 mw. Output, 35 db.				Saturated Power Output, 28 mw.			<b>4009</b>		
6.0	1.3	15 <sup>3</sup> / <sub>8</sub> ▲	∅	RF Amplifier	1300*	25.0*	—	Typical Operation at 3000 Mc: DC Collector Volts, 1150 Gain at 1 Watt Output, 32 db.				Saturated Power Output, 1.8 watts			<b>4010</b>		
5	0.65	19 <sup>3</sup> / <sub>8</sub>	1.38□	RF & IF Amplifier	500*	500†*	—	Typical Operation at 3100 Mc. DC Collector Volts, 400 Noise Figure, 6.5 db.				Saturated Power Output, 1 mw. Gain (low-level), 25 db.			<b>6861</b>		
<b>OTHER UHF TYPES</b>																	
6.3	0.75	2 <sup>9</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>16</sub>	Class A <sub>1</sub> Amplifier	—	—	—	250	200	—	—	17	7452	4850	36	—	<b>2C40</b>
				Class C Amp. & Osc.	500 <sup>Δ</sup>	25 <sup>Δ</sup>	6.5 <sup>Δ</sup>	—	—	—	—	—	—	—	—	—	
6.3	0.9	2 <sup>11</sup> / <sub>16</sub>	1 <sup>5</sup> / <sub>16</sub>	Class A <sub>1</sub> Amplifier	—	—	—	250	100	—	—	21	6000	8000	48	—	<b>2C43</b>
				Class C Amp. & Osc.	500 <sup>Δ</sup>	40 <sup>Δ</sup>	12 <sup>Δ</sup>	—	—	—	—	—	—	—	—	—	
6.3	0.225	1 <sup>3</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>32</sub>	RF Amp. & Osc. Class C Telegraphy	150	20	2	150	-15v	—	—	20	DC Grid Ma., 7.5 Driver Power, 0.2 watt			1.8	<b>6F4</b>
6.3	0.4	2 <sup>1</sup> / <sub>8</sub>	3/4	Class A <sub>1</sub> Amplifier	150	20	2.25	100 150	100 100	— —	— —	10 15	5000 4500	11000 12000	55 55	—	<b>6J4</b>
				Class A <sub>1</sub> Amplifier	150	20	2.25	100 150	100 100	— —	— —	10 15	5000 4500	11000 12000	55 55	—	
6.3	0.225	1 <sup>3</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>32</sub>	Class A <sub>1</sub> Amplifier	500	15	1.7	80	150	—	—	9.5	4400	6400	28	—	<b>6L4</b>
				Class A <sub>1</sub> Amplifier	500	15	1.7	80	150	—	—	9.5	4400	6400	28	—	
6.3	0.15	1 <sup>7</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>32</sub>	Class A <sub>1</sub> Amplifier	250	—	0.5	250	-3v	100	0.7	2.0	1.0 + §	1400	—	—	<b>954</b>
				Bias Detector				250	-6v	100	DC plate ma. adjusted to 0.1 with no input signal. Cath. Res. of 20000 to 50000 ohms.						
6.3	0.15	1 <sup>3</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>32</sub>	RF Amp. & Osc. Class C Telegraphy	180	8.0	1.6	180	-35v	—	—	7	DC Grid Ma., 1.5			0.5 at 60 Mc	<b>955</b>
6.3	0.15	1 <sup>7</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>32</sub>	Class A <sub>1</sub> Amplifier	250	—	1.7	250	-3v	100	2.7	6.7	0.7 §	1800	—	—	<b>956</b>
				Mixer				250	-10v	100	Conversion Transcond., 600 μmhos Osc. Peak Volts, 9						
1.25	0.05	1 <sup>3</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>32</sub>	Class A <sub>1</sub> Amplifier	135	—	—	135	-5v	—	—	2	20800	650	13.5	—	<b>957</b>
1.25	0.1	1 <sup>3</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>32</sub>	RF Amp. & Osc. Class C Telegraphy	135	7	0.6	135	-20v	Grid Res., 20000 Ohms		7	DC Grid Ma., 1 Driving Power, 0.035 watt			0.6	<b>958-A</b>
1.25	0.05	1 <sup>7</sup> / <sub>8</sub>	1 <sup>5</sup> / <sub>32</sub>	Class A <sub>1</sub> Amplifier	145	—	—	135	-3v	67.5	0.4	1.7	0.8 §	600	—	—	<b>959</b>
6.3	0.15	1 <sup>3</sup> / <sub>8</sub> ♦	0.4	RF Amp. & Osc. Class C Telegraphy	Max. DC Grid Volts, -55* Max. DC Plate Volts, 165* Max. Peak Heater-Cathode Volts, ±200*				Max. DC Grid Ma., 5.5* Max. DC Plate Ma., 22* Max. Plate Dissipation, 3.3 watts*							<b>5718</b>	
6.3	0.2	1 <sup>1</sup> / <sub>2</sub> ♦	0.4	Class A <sub>1</sub> Amplifier	—	—	—	120	120	—	—	12	4000	5900	24	—	<b>6026</b>
				400 Mc Oscillator Class C Telegraphy	150*	—	3*	135	Grid Res., 1300 Ohms DC Grid Ma., 9.5		20	—	—	—	1.25		
6.3	0.15	1 <sup>3</sup> / <sub>4</sub>	3/4	Class A <sub>1</sub> Amplifier	250	—	0.5	250	-3v	100	0.7	2	1.0 + §	1400	—	—	<b>9001</b>
				Mixer				250	-5v	100	Conversion Transcond., 550 μmhos Osc. Peak Volts, 4						

‡Microamperes. \*Collector. ▲Excluding flexible leads. ∅Maximum Height 2<sup>5</sup>/<sub>8</sub>", Maximum Width 2<sup>1</sup>/<sub>2</sub>". □Metal shell.  
§ Megohms. ♦ Excluding flexible leads. \* Absolute values. Δ Under conditions as RF Amplifier and Oscillator, Class C Telegraphy.



See Note 2  
957 958-A



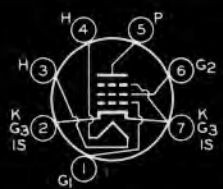
See Note 1  
959



5718




6026




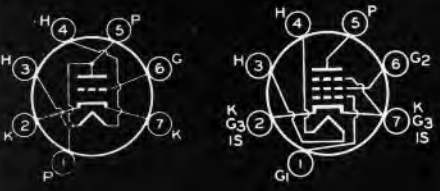
9001



 Type	Description
<b>OTHER UHF TYPES (Cont'd)</b>	
<b>9002</b>	Medium-Mu Triode. 7-pin miniature type with a heater-cathode. Electrically similar to the 955. For frequencies up to 500 Mc.
<b>9003</b>	Remote-Cutoff Pentode. 7-pin miniature type with a heater-cathode. Electrically similar to the 956.
<b>9004</b>	UHF Diode. Acorn type with a heater-cathode. For use as a rectifier, detector, or measuring device. Resonant frequency about 850 Mc.
<b>9005</b>	UHF Diode. Acorn type with a heater-cathode. For use as a rectifier, detector, or measuring device. Resonant frequency about 1500 Mc.
<b>9006</b>	UHF Diode. 7-pin miniature type with a heater-cathode. Resonant frequency about 700 Mc. For uhf service as a rectifier, detector, or measuring device.

**THYRATRONS**

 Type	Description
<b>TRIODES (Gas Types)</b>	
<b>884</b>	Negative-control, heater-cathode type. Small shell, octal 6-pin base.
<b>885</b>	Negative-control, heater-cathode type. Small 5-pin base. For renewal use only.
<b>TETRODES (Gas Types)</b>	
<b>2D21</b>	Miniature heater-cathode type. Can be operated in a high-sensitivity circuit directly from a vacuum phototube. Miniature button 7-pin base.
<b>2D21-W</b>	Like 2D21 but intended to meet indicated military specification.
<b>502-A</b>	Metal, negative-control, heater-cathode type. Octal 8-pin base.
<b>2050</b>	Negative-control, heater-cathode type. Can be operated directly from a vacuum phototube. Octal 8-pin base.
<b>5696</b>	Miniature 7-pin type for relay applications such as counter-circuits where low-heater-current drain and short deionization time are important considerations.
<b>5727</b>	Miniature heater-cathode type, 7-pin base. For use in relay, grid-controlled rectifier and pulse-modulator circuits.
<b>5727 / 2D21-W</b>	Designed to meet the indicated military specification.
<b>6012</b>	Negative-control, heater-cathode type. For grid-controlled rectifier and relay applications, particularly those involving motor-control and low-power inverter service.



9002                      9003

For key to terminal connections see page 30.

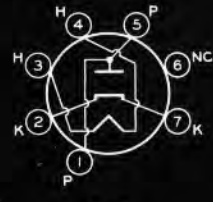
Note: Long part of bulb is top.



See Note 9004



See Note 9005



9006



884



885

Cathode				Maximum Dimensions Inches	Class of Service	Maximum Ratings			Typical Operation								RCA Type			
						DC Plate Volts	DC Current Plate Ma.	Plate Dissipation Watts	Plate Supply Volts	Grid-No. 1 Volts(v) or Cathode Resistance Ohms	Grid-No. 2 Supply Volts	Grid-No. 2 Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance Micro-mhos	Amplification Factor		Power Output Watts		
Volts	Amp.	Length	Diam.																	
<b>OTHER UHF TYPES (Cont'd)</b>																				
6.3	0.15	1 3/4	3/4	Class A <sub>1</sub> Amplifier	250	—	1.6	90 250	-2.5v -7.0v	—	—	2.5 6.3	14700 11400	1700 2200	25 25	—	<b>9002</b>			
6.3	0.15	1 3/4	3/4	Class A <sub>1</sub> Amplifier Mixer	250	—	1.7	250 250	-3v -10v	100 100	2.7	6.7	0.7§	1800	—	—	<b>9003</b>			
																	Conversion Transcond., 600 μmhos Osc. Peak Volts, 9			
6.3	0.15	1 3/8	1 5/16	Detector Rectifier	Max. AC Plate Volts, 117 Max. DC Output Ma., 5					Max. DC Heater-Cathode Volts, ±90 Resonant Frequency (Approx.), 850 Mc					<b>9004</b>					
3.6	0.165	1 3/8	1 5/16	Detector Rectifier	Max. AC Plate Volts, 117 Max. DC Output Ma., 1					Max. DC Heater-Cathode Volts, -50 Resonant Frequency (Approx.), 1500 Mc					<b>9005</b>					
6.3	0.15	1 3/4	3/4	Detector Rectifier	Max. AC Plate Volts, 270 Max. Peak Inverse Plate Volts, 750					Max. Peak Plate Ma., 15 Max. DC Output Ma., 5					<b>9006</b>					

**THYRATRONS**

Applications	Cathode		Max. Dimensions Inches		Approx. Tube Drop Volts	Maximum Ratings						RCA Type	
						Temperature Range		Peak Forward Anode Volts	Peak Inverse Anode Volts	Peak Cathode Amperes	Average Cathode Amperes		Fault Amperes
	Condensed Mercury °C	Ambient °C	Volts	Amp.		Length	Diam.						
<b>For complete listing of Thyratrons, see Power and Gas Tubes Booklet, PG-101-D.</b>													
<b>TRIODES (Gas Types)</b>													
Relaxation oscillators	6.3	0.6	4 1/8	1 9/16	14	—	-75 to +90	350	—	0.3	0.075	—	<b>884</b>
						Max. Ratings for Relaxation Osc. Peak Anode Volts, 300; Peak Cathode Amp., 0.3							
Relaxation oscillators	2.5	1.5	4 3/16	1 9/16	14	—	-75 to +90	350	—	0.3	0.075	—	<b>885</b>
						Max. Ratings for Relaxation Osc. Peak Anode Volts, 300; Peak Cathode Amp., 0.3							
<b>TETRODES (Gas Types)</b>													
High-sensitivity relay control circuits	6.3	0.6	2 1/8	3/4	8	—	-75 to +90	650	1300	0.5	0.1	10	<b>2D21</b>
							Typical Operating Conditions for Relay Service: Anode Volts, 400 Grid-No. 1 Circuit Res., 1 megohm						
							For data refer to MIL-E-1/756B specification <sup>▲</sup>						
	6.3	0.6	2 5/8	1 5/16	8	—	-55 to +90	650	1300	1.0	0.1	10	<b>502-A</b>
	6.3	0.6	4 1/8	1 9/16	8	—	-75 to +90	650	1300	1.0	0.1	10	<b>2050</b>
						Grid-No. 1 Circuit Resistance, 10 megohms max.							
6.3	0.15	1 3/4	3/4	10	—	-55 to +90	500	500	0.1	0.025	2	<b>5696</b>	
						Typical Operating Conditions for Relay Service: AC Anode Voltage (RMS), 117 Peak Grid-No. 1 Signal Volts, 5 Grid-No. 1 Bias Volts (RMS), 5 Grid-No. 1 Circuit Resistance, 0.1 megohm							
High-sensitivity relay control circuits	6.3	0.6	2 1/8	3/4	8	—	-75 to +90	650	1300	0.5	0.1	10	<b>5727</b>
							For data refer to MIL-E-1/83B specification <sup>▲</sup>						
	6.3	0.6	2 1/8	3/4	10	—	-75 to +90	650	1300	5	0.5	20	<b>5727 / 2D21-W</b>
						Grid-No. 1 Circuit Resistance, 2 megohms max.							

All thyatron ratings are for continuous service.

§ Megohms.

<sup>▲</sup> A copy of this specification may be obtained from the Director of the Armed Services Electro-Standards Agency (ASESA) at Fort Monmouth, New Jersey.



2D21 2D21-W



502-A

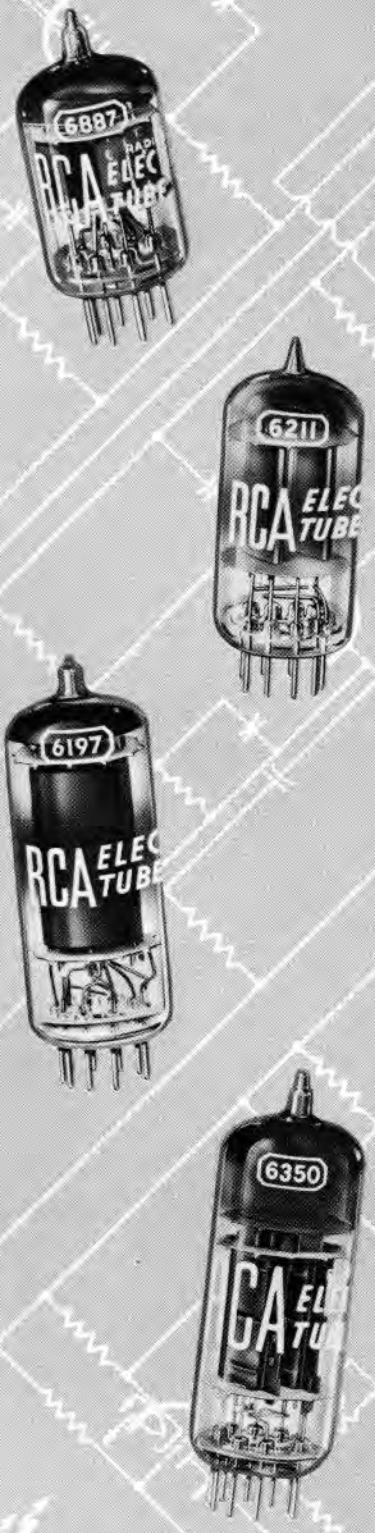


2050



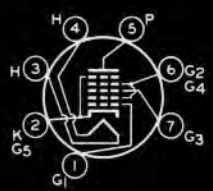
6012

**TUBES FOR COMPUTER APPLICATIONS**

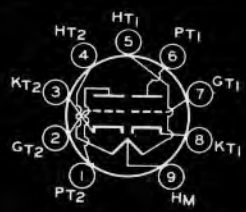


 Type	Description
<b>FOR ELECTRONIC COMPUTERS AND OTHER "ON-OFF" CONTROL APPLICATIONS</b>	
5915	Pentagrid Amplifier. For gated amplifier service. Grids No. 1 and No. 3 can each be used as independent control electrodes. 7-pin miniature base.
5963	Medium-Mu Twin Triode. Especially useful in multivibrator applications. Noval 9-pin miniature base with separate terminals for each cathode. Mid-tapped heater for 6.3-volt or 12.6-volt operation.
5964	Medium-Mu Twin Triode. Especially useful in multivibrator applications. 7-pin miniature base.
5965	Medium-Mu Twin Triode. Especially useful in cathode-follower applications. Noval 9-pin miniature base with separate terminals for each cathode. Heater mid-tap for 6.3-volt or 12.6-volt operation.
6197	Sharp-Cutoff Power Pentode. Especially useful in pulse-amplifier applications. Noval 9-pin miniature base.
6211	Medium-Mu Twin Triode. Especially useful in multivibrator applications. Noval 9-pin miniature base with separate terminals for each cathode. Mid-tapped heater for 6.3-volt or 12.6-volt operation.
6350	Medium-Mu Twin Triode. High perveance type having transconductance per unit = 4600 micromhos. Especially useful in cathode-follower applications in high-speed digital computers. Noval 9-pin miniature base with separate terminals for each cathode. Mid-tapped heater for 6.3-volt or 12.6-volt operation.
6814	Medium-Mu Triode. For pulse-amplifier, inverter, and cathode-follower circuits in high-speed digital-type computers. Subminiature type with 8 flexible leads.
6887	Twin Diode. Especially useful in switching circuits of medium-speed electronic computers. Low wattage heater (only 1.26 watts). 7-pin miniature base.
7044	Medium-Mu Twin Triode. High-perveance type having transconductance per unit 10,000 micromhos. Especially useful in cathode-follower applications in high-speed digital computers. Noval 9-pin miniature base with separate terminals for each cathode. Mid-tapped heater for 6.3-volt or 12.6-volt operation.

For key to terminal connections see page 30.



5915



5963 5965 6211



5964



6197



# TUBES FOR COMPUTER APPLICATIONS

Cathode		Maximum Dimensions Inches		Maximum Ratings		Use Values to right give operating conditions and characteristics for indicated use.	Plate Supply	Grid-No. 1	Grid-No. 2 and-No. 4 Supply	Grid-No. 3 Supply	Plate Current	Grid-No. 2 and-No. 4 Current	Plate Circuit Resistance	Grid-No. 1 Circuit Resistance	Grid-No. 3 Circuit Resistance	RCA Type			
				Plate Dissip. Watts													DC Cathode Current Ma.		
Volts	Amp.	Length	Diam.	Each Unit	Both Units		Volts	Volts	Volts	Volts	Ma.	Ma.	Ohms	Ohms	Ohms				
<b>FOR ELECTRONIC COMPUTERS AND OTHER "ON-OFF" CONTROL APPLICATIONS</b>																			
6.3	0.3	2 1/8	3/4	1		20	Gated Amp: <i>Grid-No. 1</i> <i>Grid-No. 3</i>		150 150 150	-10 <sup>▲</sup> 0 0	75 75 75	0 -10 0	0 0 5.8	0 14 9	20000 20000 20000	47000 47000 47000	47000 47000 47000	<b>5915</b>	
12.6 6.3	0.15 0.3	2 3/16	7/8	2.5	5.0	20	Frequency Halfer <sup>•</sup>		150 150	-15 0	— —	— —	0 5.1	— —	20000 20000	47000 47000	— —	<b>5963</b>	
6.3	0.45	2 1/8	3/4	1.5	3.0	15	Frequency Halfer <sup>•</sup>		150 150	-10 0	— —	— —	0 5	— —	20000 20000	47000 47000	— —	<b>5964</b>	
12.6 6.3	0.225 0.45	2 3/16	7/8	2.4	4.4	16.5	Frequency Divider <sup>•</sup>		150	<i>Grid Volts (Approx.) for Plate Current of 150 μa = -7.5</i>			<i>Difference between Grid Voltages of Units for Plate Currents of 150 μa per Unit = 1.5 Max.</i>			<i>Plate Load Resistance = 7200 ohms</i>		<b>5965</b>	
								150	<i>Grid Volts (Approx.) for Grid Current of 140 μa = less than 1 volt</i>			10.5	—	7200	—	—			
6.3	0.65	2 5/8	7/8	7.5		50	Frequency Divider <sup>•</sup>		250* 250*	-12 -3	150* 150*	0 0	0 30	— —	— —	— —	— —	— —	<b>6197</b>
12.6 6.3	0.15 0.3	2 3/16	7/8	1.5	3.0	16	Frequency Divider <sup>•</sup>		150	<i>Grid Volts (Approx.) for Plate Current of 100 μa = -10 volts Max.</i>			<i>Difference between Grid Voltages of Units for Plate Currents of 100 μa per Unit = -1.5 Volt Max.</i>			<i>Plate Load Resistance = 20000 Ohms</i>		<b>6211</b>	
								150	0	—	—	5.15	—	20000	47000	—			
12.6 6.3	0.3 0.6	2 5/8	7/8	4	7	45	Cathode Follower		Maximum Ratings, Absolute Values: DC Plate Volts, 330 Peak Positive-Pulse Plate Volts, 1000 DC Grid Volts, -80; +4 Grid Current (Ma.), dc = 5.5; peak = 110 Cathode Current (Ma.), dc = 45; peak = 350								<b>6350</b>		
6.3	0.15	1 3/8	0.4	2.2		22	Cathode Follower		Maximum Ratings, Absolute Values: Peak Heater-Cathode Volts, ±200 DC Grid Ma., 5.5; peak, 110 Cathode Ma., dc = 22; peak = 440 DC Grid Volts, -55; +5.5 DC Plate Volts, 275								<b>6814</b>		
6.3	0.2	1 3/4	3/4	—	—	30 <sup>▲</sup> 10 <sup>§</sup>	Switching Service		Maximum Ratings, Absolute Values: Peak Inverse Plate Volts, 360 Peak Heater-Cathode Volts, ±150								<b>6887</b>		
6.3 12.6	0.9 0.45	2 5/8	7/8	4.5	8	50	Cathode Follower		Maximum Ratings, Absolute Values: DC Plate Volts, 300 Grid Ma., dc = 5; peak = 200 Cathode Ma., dc = 50; peak = 400 Peak Heater-Cathode Volts, ±200 DC Grid Volts, -100; +1								<b>7044</b>		

<sup>▲</sup> Peak Plate Current.      <sup>§</sup> DC Plate Current.      ♦ With both units operating.      <sup>▲</sup> Grid-No. 1 Supply Volts.      \* Voltages at electrode terminals.  
<sup>◆</sup> Excluding leads.      • Values shown in italics are for cutoff condition; other values are conduction condition.



6350



6814




6887



7044

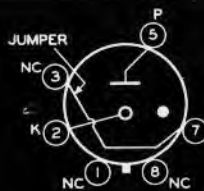
# GLOW-DISCHARGE (Cold-Cathode) TUBES

 Type	Description
<b>VOLTAGE-REGULATOR TYPES</b>	
<b>OA2</b>	Miniature button 7-pin base.
<b>OA3</b>	Octal 6-pin base.
<b>OB2</b>	Miniature button 7-pin base.
<b>OC2</b>	Miniature button 7-pin base.
<b>OC3</b>	Octal 6-pin base.
<b>OD3</b>	Octal 6-pin base.
<b>991</b>	Candelabra, double-contact base.
<b>6073</b>	Like the OA2 but having very stable characteristics and intended for applications critical as to shock and vibration.
<b>6073/OA2</b>	Like the OA2 but having very stable characteristics and intended for applications critical as to shock and vibration.
<b>6074</b>	Like the OB2 but having very stable characteristics and intended for applications critical as to shock and vibration.
<b>6074/OB2</b>	Like the OB2 but having very stable characteristics and intended for applications critical as to shock and vibration.
<b>6626/OA2-WA</b>	Like OA2 but intended to meet indicated military specification.
<b>VOLTAGE-REFERENCE TYPES</b>	
<b>5651</b>	7-pin miniature type designed for extreme voltage stability. Voltage stability is such that voltage fluctuations at any current value within the operating current range (1.5 to 3.5 ma.) are less than 0.1 volt.
<b>5651-WA</b>	Like 5651 but intended to meet indicated military specification.
<b>RELAY TYPES</b>	
<b>OA4-G</b>	For use in calculating machines and carrier-current relay systems. Octal 6-pin base.
<b>1C21</b>	Similar to OA4-G, but for dc operation only.
<b>5823</b>	Miniature 7-pin type intended primarily for the "on-off" control of low-current electrical circuits.

For key to terminal connections see page 30.



OA2 OB2 OC2 6073 6073/OA2  
6074 6074/OB2 6626/OA2-WA



OA3 OC3 OD3



991

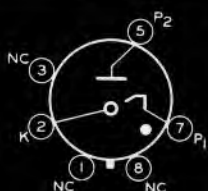
# ← GLOW-DISCHARGE (Cold-Cathode) TUBES

Applications	Max. Dimensions Inches		Max. Starting Current Ma.	DC Operating Current Ma.		Ambient Temperature Range °C	Operating Conditions					Type
	Length	Diam.		Max.	Min.		Approx. DC Starting Volts	Min. DC Anode-Supply Volts	Approx. DC Operating Volts	Regulation		
										Current Range Ma.	Volts	
<b>VOLTAGE-REGULATOR TYPES</b>												
Regulation of dc voltage supplies for amplifiers, oscillators, etc.; can also be used as relaxation oscillators	2 5/8	3/4	75	30	5	-55 to +90	156	185	151	5 to 30	2	<b>OA2</b>
	4 1/8	1 9/16	100	40	5	-55 to +90	100	105	75	5 to 40	5	<b>OA3</b>
	2 5/8	3/4	75	30	5	-55 to +90	115	133	108	5 to 30	1	<b>OB2</b>
	2.63	3/4	75	30	5	-55 to +90	105	115	75	5 to 30	3	<b>OC2</b>
	4 1/8	1 9/16	100	40	5	-55 to +90	115	133	108	5 to 40	2	<b>OC3</b>
	4 1/8	1 9/16	100	40	5	-55 to +90	160	185	153	5 to 40	4	<b>OD3</b>
	1 9/16	5/8	—	2	0.4	—	67	87	59	0.4 to 2.0	8	<b>991</b>
Same as OA2	Instantaneous Impact Acceleration, 500 Max. g Vibrational Acceleration for Extended Periods, 2.5 g										<b>6073</b>	
Same as OA2	Instantaneous Impact Acceleration, 500 Max. g Vibrational Acceleration for Extended Periods, 2.5 g										<b>6073/OA2</b>	
Same as OB2	Instantaneous Impact Acceleration, 500 Max. g Vibrational Acceleration for Extended Periods, 2.5 g										<b>6074</b>	
Same as OB2	Instantaneous Impact Acceleration, 500 Max. g Vibrational Acceleration for Extended Periods, 2.5 g										<b>6074/OB2</b>	
Same as OA2	For data refer to MIL-E-1/939B specification ♦										<b>6626/OA2-WA</b>	
<b>VOLTAGE-REFERENCE TYPES</b>												
Voltage-Reference Tube	2 1/8	3/4	—	3.5	1.5	-55 to +90	107	115	87	1.5 to 3.5	3	<b>5651</b>
Voltage-Reference Tube	2 1/8	3/4	For data refer to MIL-E-1/825A specification ▲								<b>5651-WA</b>	
<b>RELAY TYPES</b>												
Relay Service	4 1/8	1 9/16	Max. Peak Inverse Anode Volts, 225 Peak Starter-Electrode Breakdown Volts, +75 to +90				Max. Peak Cathode Current, 100 Ma. Max. Av. Cathode Current, 25 Ma.				<b>OA4-G</b>	
	2 5/8	1 5/16	Max. Peak Inverse Anode Volts, 180 Peak Starter-Electrode Breakdown Volts, +66 to +80				Max. Peak Cathode Current, 100 Ma. Max. Average Cathode Current, 25 Ma.				<b>1C21</b>	
	2 1/8	3/4	Max. Peak Anode and Starter-Electrode Volts, 200 Peak Starter-Electrode Breakdown Volts, +73 to +105				Max. Peak Cathode Current, 100 Ma. Max. Average Cathode Current, 25 Ma.				<b>5823</b>	

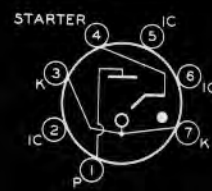
♦ A copy of this specification may be obtained from the Bureau of Ships, Department of the Navy, Washington 25, D. C.  
 ▲ A copy of this specification may be obtained from the Director of the Armed Services Electro-Standards Agency (ASESA) at Fort Monmouth, New Jersey.



5651 5651-WA

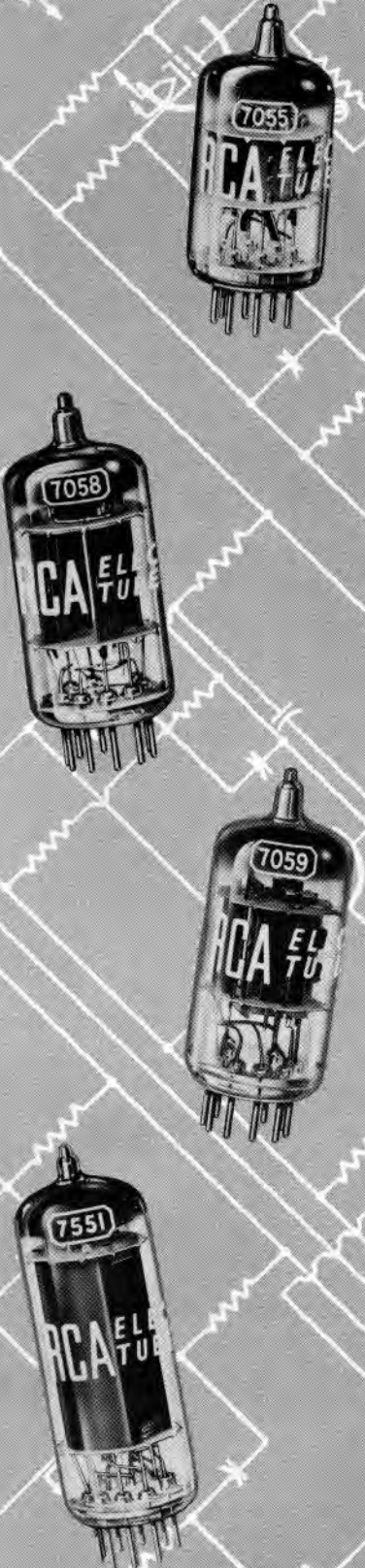


OA4-G 1C21



5823

# TUBES FOR MOBILE COMMUNICATIONS EQUIPMENT



Type	Description	Special Tests and Controls					
		Low Frequency Vibration	Intermittent Shorts	Heater-Cathode Leakage	Inter-electrode Leakage	Heater-Cycling	Life Test
<b>TYPES OPERATING FROM 6-CELL STORAGE-BATTERY SYSTEMS</b>							
<b>7054</b>	Power Pentode. 9-pin miniature heater-cathode type. For use as a class C rf power amplifier, oscillator or frequency multiplier at frequencies up to 40 Mc. Receiving-tube prototype 12BY7-A.	✓	✓	✓	✓	✓	✓
<b>7055</b>	Twin Diode. 7-pin miniature heater-cathode type. For use as a detector or full-wave rectifier in power supplies having low dc requirements. Receiving-tube prototype 6AL5.	—	✓	✓	✓	✓	✓
<b>7056</b>	Sharp-Cutoff Pentode. 7-pin miniature heater-cathode type. For use as an if or rf amplifier at frequencies up to about 45 Mc. Receiving-tube prototype 6CB6.	✓	✓	✓	✓	✓	✓
<b>7057</b>	Medium-Mu Twin Triode. 9-pin miniature heater-cathode type. For use as an rf amplifier in cascode-type circuits at frequencies up to 200 Mc. Receiving-tube prototype 6BZ7.	✓	✓	✓	✓	✓	✓
<b>7058</b>	High-Mu Twin Triode. 9-pin miniature heater-cathode type. For use in phase-inverter, resistance-coupled amplifier and low-frequency oscillator circuits. Receiving-tube prototype 12AX7.	✓	✓	✓	✓	✓	✓
<b>7059</b>	Medium-Mu Triode, Sharp-Cutoff Pentode. 9-pin miniature heater-cathode type. For use as a combined oscillator and mixer-tube in receivers with if frequencies up to 40 Mc. Receiving-tube prototype 6U8-A.	✓	✓	✓	✓	✓	✓
<b>7060</b>	Medium-Mu Triode, Power Pentode. 9-pin miniature heater-cathode type. For use in rf power-amplifier and frequency multiplier applications at frequencies up to 40 Mc. Receiving-tube prototype 6AU8.	✓	✓	✓	✓	✓	✓
<b>7061</b>	Beam Power Tube. 9-pin miniature heater-cathode type. For use as an af power amplifier. Receiving-tube prototype 12AB5.	✓	✓	✓	✓	✓	✓
<b>7551</b>	Beam Power Tube. 9-pin miniature heater-cathode type. For use as a class C rf amplifier, oscillator, or frequency multiplier at frequencies up to 175 Mc.	✓	—	—	—	✓	—

For key to terminal connections see page 30.



**TUBES FOR MOBILE COMMUNICATIONS EQUIPMENT**

Cathode		Maximum Dimensions Inches		Class of Service	Maximum Ratings				Operating Conditions and Characteristics								RCA Type	
					Plate Volts	Plate Dissipation Watts	Grid-No. 2 Input Watts	Plate Supply Volts	Grid-No. 1 Volts(v) or Cathode Resistance Ohms	Grid-No. 2 Supply Volts	Grid-No. 2 Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans- conduc- tance Micro- mhos	Ampli- fication Factor	Power Output Watts		
Volts	Amp.	Length	Diam.															
<b>TYPES OPERATING FROM 6-CELL STORAGE-BATTERY SYSTEMS</b>																		
12.0 to 15.0	0.275 at 13.5V	2 5/8	0.875	Class A <sub>1</sub> Amplifier	330	5.0	1.0	250	120	150	3.5	19	100000	11500	—	—	<b>7054</b>	
				RF Power Amplifier Class C Telegraphy	330	5.0	1.0	300	-12v	175	5.5	26	Power Output, 4 Watts at 40 Mc.					
				Frequency Doubler	330	5.0	1.0	300	-25v	175	4.0	20	Power Output, 2.5 Watts at 40 Mc.					
12.0 to 15.0	0.155 at 13.5V	1 3/4	0.75	Half-Wave Rectifier Each Unit	Maximum Ratings, Absolute Values: Peak Inverse Plate Volts, 350 Peak Plate Ma., 60 DC Output Ma., 10 Peak Heater-Cathode Volts, 120												<b>7055</b>	
12.0 to 15.0	0.15 at 13.5V	2 1/8	0.75	Class A <sub>1</sub> Amplifier	330	2.0	0.5 †	200	180	150	2.8	9.5	600000	6200	—	—	<b>7056</b>	
12.0 to 15.0	0.18 at 13.5V	2 5/16	0.875	Class A <sub>1</sub> Amplifier Each Unit	275	2.2	—	150	220	—	—	10	5300	6800	36	—	<b>7057</b>	
12.0 to 15.0	0.155 at 13.5V	2 5/16	0.875	Class A <sub>1</sub> Amplifier Each Unit	330	1.0	—	250	-2v	—	—	1.25	61000	1650	100	—	<b>7058</b>	
12.0 to 15.0	0.195 at 13.5V	2 5/16	0.875	Class A <sub>1</sub> Amplifier	Triode Unit	300	2.5	—	150	56	—	—	18	4700	8500	40	—	<b>7059</b>
					Pentode Unit	300	2.8	0.5 ♦	250	68	110	3.5	10	400000	5200	—	—	
12.0 to 15.0	0.28 at 13.5V	2 5/16	0.875	Class A <sub>1</sub> Amplifier	Triode Unit	300	2.5	—	150	150	—	—	9.0	8200	4900	40	—	<b>7060</b>
					Pentode Unit	300	3.0	0.5 ♦	200	82	125	3.4	15	150000	7000	—	—	
12.0 to 15.0	0.21 at 13.5V	2 5/8	0.875	Class A <sub>1</sub> Amplifier	345	9.0	2.0	200	-10v	200	9.0	35.5	60000	4200	—	3.0*	<b>7061</b>	
12.0 to 15.0	0.36 at 13.5V	2 5/8	0.875	Class A <sub>1</sub> Amplifier	—	—	—	250	-18v	250	3.0	40	—	5300	—	—	<b>7551</b>	
				RF Power Amplifier Class C Telegraphy at 175 Mc.	300	10	2	300	-42v	200	3.7	70	—	—	—	8.5		
				Frequency Doubler at 175 Mc.	300	10	2	250	-53v	200	2.6	50	—	—	—	4.5		

† For Grid-No. 2 Volts up to 165. For Grid-No. 2 Volts between 165 and 330, see JEDEC Input Rating Chart J5-C4-2.


♦ For Grid-No. 2 Volts up to 150. For Grid-No. 2 Volts between 150 and 300, see JEDEC Input Rating Chart J5-C4-2.

\* Load for stated power, 5000 ohms.



**TUBES FOR MOBILE COMMUNICATIONS EQUIPMENT**

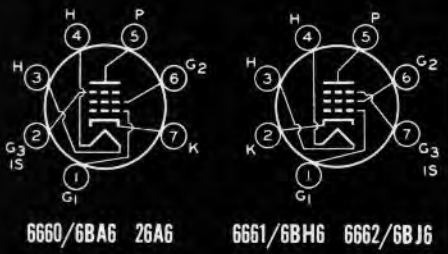


 Type	Description
<b>TYPES OPERATING FROM 3-CELL STORAGE-BATTERY SYSTEMS</b>	
<b>6660/ 6BA6</b>	Remote-Cutoff Pentode. 7-pin miniature heater-cathode type. For hf wide-band amplifier circuits. For renewal use.
<b>6661/ 6BH6</b>	Sharp-Cutoff Pentode. 7-pin miniature heater-cathode type. For hf wide-band amplifier circuits. For renewal use.
<b>6662/ 6BJ6</b>	Remote-Cutoff Pentode. 7-pin miniature heater-cathode type. For use in rf wide-band amplifier circuits. For renewal use.
<b>6663/ 6AL5</b>	Twin Diode. 7-pin miniature heater-cathode type. For low-current rectifier and detector circuits. For renewal use.
<b>6669/ 6AQ5-A</b>	Beam Power Tube. 7-pin miniature heater-cathode type. For use as an af power amplifier. For renewal use.
<b>6677/ 6CL6</b>	Power Pentode. 9-pin miniature heater-cathode type. For output power stages. For renewal use.
<b>6678/ 6U8-A</b>	Medium-Mu Triode, Sharp-Cutoff Pentode. 9-pin miniature heater cathode type. For use as a combined oscillator and mixer in vhf circuits. For renewal use.
<b>6679/ 12AT7</b>	High-Mu Twin Triode. 9-pin miniature heater-cathode type. For use as a frequency converter below 300 Mc. For renewal use.
<b>6680/ 12AU7-A</b>	Medium-Mu Twin Triode. 9-pin miniature heater-cathode type. For oscillator and multivibrator applications. For renewal use.
<b>6681/ 12AX7</b>	High-Mu Twin Triode. 9-pin miniature heater-cathode type. For phase-inverter and oscillator circuits. For renewal use.

**TUBES HAVING 26.5-VOLT HEATERS**

<b>26A6</b>	Remote-Cutoff Pentode. 7-pin miniature type. Features high transconductance.	Of special use in aircraft receivers where operating voltages are obtained from 12-cell storage batteries.
<b>26A7-GT</b>	Twin Beam Power Tube. Single-ended type with a common cathode. Octal 8-pin base.	
<b>26C6</b>	Twin Diode—Medium-Mu Triode. 7-pin miniature. Useful as a detector, amplifier and avc tube.	
<b>26D6</b>	Pentagrid Converter. 7-pin miniature. Useful as mixer and oscillator in superheterodyne receivers.	
<b>6082</b>	Low-Mu Twin Power Triode. Useful as regulator tube in stabilized dc power supplies subject to shock and vibration. Octal 8-pin base.	

For key to terminal connections see page 30.



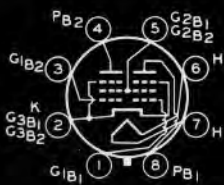
# TUBES FOR MOBILE COMMUNICATIONS EQUIPMENT

Cathode		Maximum Dimensions Inches		Class of Service	Maximum Ratings			Operating Conditions and Characteristics										RCA Type		
					Plate Volts	Plate Dissipation Watts	Grid-No. 2 Input Watts	Plate Supply Volts	Grid-No. 1 Volts(v) or Cathode Resistance Ohms	Grid-No. 2 Supply Volts	Grid-No. 2 Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance Micro-mhos	Amplification Factor	Power Output Watts				
Volts	Amp.	Length	Diam.	TYPES OPERATING FROM 3-CELL STORAGE-BATTERY SYSTEMS																
6.3	0.3	2 1/8	3/4	Class A <sub>1</sub> Amplifier	330	3.3	0.65	100	68	100	4.4	10.8	250000	4300	—	—	<b>6660/ 6BA6</b>			
6.3	0.15	2 1/8	3/4	Class A <sub>1</sub> Amplifier	330	3.3	0.55	250	100	150	2.6	7.4	1400000	4600	—	—	<b>6661/ 6BH6</b>			
6.3	0.15	2 1/8	3/4	Class A <sub>1</sub> Amplifier	330	3.3	0.65	250	80	100	3.3	9.2	1300000	3600	—	—	<b>6662/ 6BJ6</b>			
6.3	0.3	1 3/4	3/4	Half-Wave Rectifier	Maximum Ratings, Design-Maximum Values: Peak Inverse Plate Volts, 275      DC Output Ma. (per Plate), 10 Steady-State Peak Plate Ma. (per Plate), 60											<b>6663/ 6AL5</b>				
6.3	0.45	2 5/8	3/4	Class A <sub>1</sub> Amplifier	250	12	2.0	250	-12.5v	250	4.5	45	52000	4100	—	4.5 <sup>▲</sup>	<b>6669/ 6AQ5-A</b>			
6.3	0.65	2 5/8	7/8	Class A <sub>1</sub> Amplifier	330	8.5	2.0	250	-3v	150	7	30	150000	11000	—	2.8 <sup>*</sup>	<b>6677/ 6CL6</b>			
6.3	0.45	2 3/16	7/8	Class A <sub>1</sub> Amplifier	Triode Unit	330	3.0	—	150	56	—	18	5000	8500	40	—	<b>6678/ 6U8-A</b>			
					Pentode Unit	330	3.0	0.55	250	68	110	3.5	10	400000	5200	—		—		
6.3 12.6	0.3 0.15	2 3/16	7/8	Class A <sub>1</sub> Amplifier Each Unit	330	2.8	—	250	200	—	—	10	10900	5500	60	—	<b>6679/ 12AT7</b>			
6.3 12.6	0.3 0.15	2 3/16	7/8	Class A <sub>1</sub> Amplifier Each Unit	330	3.0	—	250	-8.5v	—	—	10.5	7700	2200	17	—	<b>6680/ 12AU7-A</b>			
6.3 12.6	0.3 0.15	2 3/16	7/8	Class A <sub>1</sub> Amplifier Each Unit	330	1.1	—	250	-2v	—	—	1.2	62500	1600	100	—	<b>6681/ 12AX7</b>			

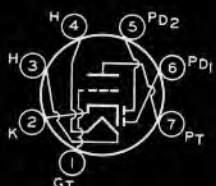
## TUBES HAVING 26.5-VOLT HEATERS

26.5	0.07	2 1/8	3/4	Class A <sub>1</sub> Amplifier	250	3.0	0.4	26.5 250	— 125	26.5 100	0.7 4.0	1.7 10.5	250000 1000000	2000 4000	Grid Res., 2 meg. ohms —	—	<b>26A6</b>
26.5	0.6	3 13/16	1 5/16	Class A <sub>1</sub> Amplifier <sup>†</sup>	50	2.0	0.5	26.5	-4.5v	26.5	1.9	20	—	5700	—	0.18 <sup>†</sup>	<b>26A7-GT</b>
				Class AB <sub>1</sub> Amplifier	50 <sup>‡</sup>	2.0 <sup>‡</sup>	0.5 <sup>‡</sup>	26.5	-7v	26.5	2.0	19	—	—	—	0.54 <sup>‡</sup>	
26.5	0.07	2 1/8	3/4	Triode Unit as Class A <sub>1</sub> Amplifier	250	2.5	—	26.5 250	Grid Res., 2 megohms -9v	—	—	1.1 9.5	15500 8500	1100 1900	17 16	—	<b>26C6</b>
26.5	0.07	2 1/8	3/4	Converter	300	1.0	1.0	26.5 250	-5v -1.5v	26.5 100	1.6 7.8	0.45 3.0	— 1000000	Conversion } 270 μmhos Transcond. } 475 μmhos	—	—	<b>26D6</b>
26.5	0.6	4 1/16	1 23/32	DC Amplifier <sup>‡</sup>	Maximum Ratings, Absolute Values: Plate Volts, 250      Plate Dissipation, 13 Watts Plate Ma., 125      Peak Heater-Cathode Volts, ±300											Grid-Circuit Resistance for Cathode-Bias Operation, 1 megohm	<b>6082</b>

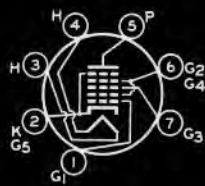
† Load for stated power, 1500 ohms.      ‡ Each unit.      ▲ Load for stated power, (plate-to-plate), 2500 ohms.  
 ▲ Load for stated power, 5000 ohms.      ● Load for stated power, 7500 ohms.



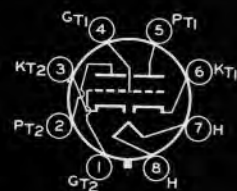
26A7-GT



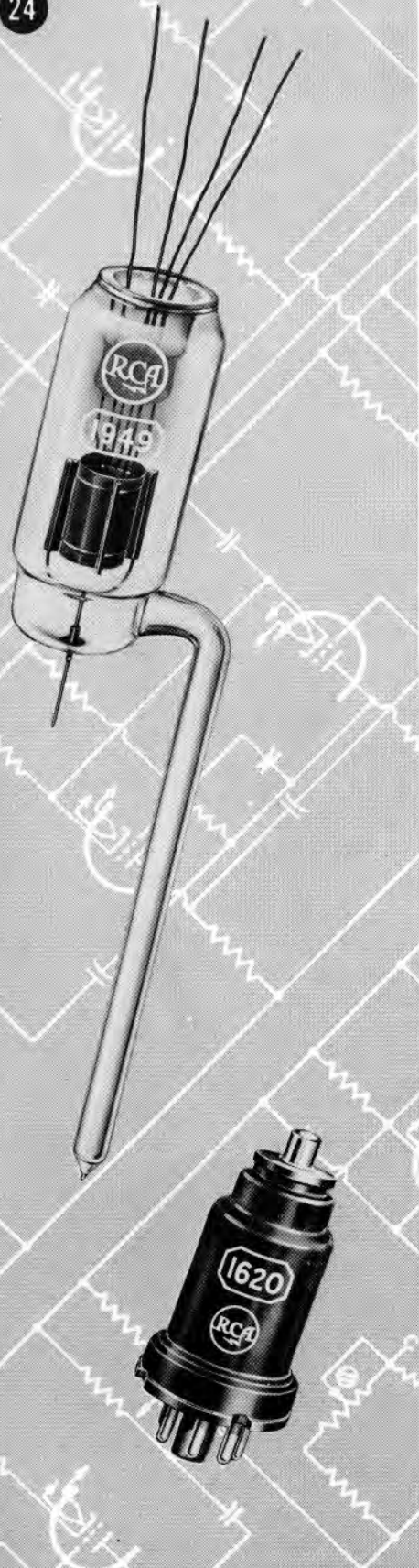
26C6




26D6



6082



## VACUUM-GAUGE TUBES

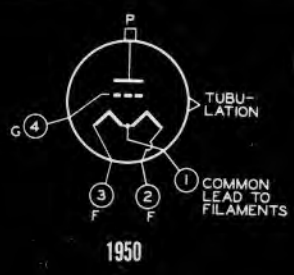
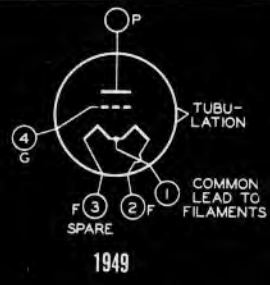
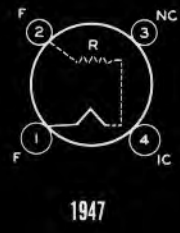
 TYPE	DESCRIPTION
<b>1946</b>	Thermocouple Type. Resistance of thermocouple, 5 ohms approx.
<b>1947</b>	Pirani Type. Each tube individually calibrated to 135.8 ohms res., under vacuum better than $3 \times 10^{-6}$ mm of Hg. Small 4-pin base.
<b>1949</b>	Ionization Type having two tungsten filaments, one a spare.
<b>1950</b>	Ionization Type similar to 1949 but constructed with soft glass.

For use in determination of gas pressures in vacuum systems and vacuum enclosures.

## LOW-MICROPHONIC AMPLIFIER TUBES

Type	Description
<b>1609</b>	Sharp-Cutoff Pentode. Coated-filament type. Small 5-pin base. For new equipment design the 1620 is recommended.
<b>1612</b>	Pentagrid Mixer. Metal type. Similar to 6L7. For volume-expander-compressor circuits. Miniature cap. Octal 7-pin base.
<b>1620</b>	Sharp-Cutoff Pentode. Especially designed for applications critical as to microphonics. Metal type similar to 6J7. Miniature cap. Octal 7-pin base.

For key to terminal connections see page 30.





# VACUUM-GAUGE TUBES

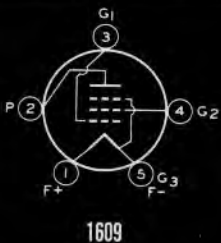
Heater or Filament		Maximum Dimensions Including Tubulation Inches			Type of Glass	Maximum Ratings				Operating Position	Range of Gas Pressure				RCA Type
						Filament Volts	DC Plate Volts	DC Grid Volts	Ambient Temp. °C		Useful Sensitivity		Greatest Sensitivity		
Volts	Amp.	Length	Diam.	Tubulation Diam.	During Operation						Microns of Hg	Mm of Hg	Microns of Hg	Mm of Hg	
Htr. 1.0	0.07	6 1/4	1 1/16	3/8	Hard, Corning Code 772 Nonex	—	—	—	50	Any	1000 to 0.1	1 to 10 <sup>-4</sup>	1000 to 1	1 to 10 <sup>-3</sup>	1946
Fil. 10	0.07 to 0.1	7 9/16	1 3/16	7/32	Soft, Corning Code 001 Lead	16	—	—	60	Any	1500 to less than 10	1.5 to less than 0.01	500 to 10	0.5 to 0.01	1947
Fil. 5	3.5	11 1/2	2 3/16*	1/2	Hard, Corning Code 772 Nonex	6.5	-100	+200	100	See Note A	below 0.1	below 10 <sup>-4</sup>	—	—	1949
Fil. 5	3.5	11 1/4	2 3/16*	1/2	Soft, Corning Code 012 Lead	6.5	-100	+200	100	See Note A	below 0.1	below 10 <sup>-4</sup>	—	—	1950

# LOW-MICROPHONIC AMPLIFIER TUBES

Cathode		Maximum Dimensions Inches		Class of Service	Maximum Ratings				Operating Conditions and Characteristics							Type	
					Plate Volts	Plate Dissipation Watts	Cathode Current Ma.	Grid-No. 2 Input Watts	Plate Supply Volts	Grid-No. 1 Volts(v) or Cathode Resistance Ohms	Grid-No. 2 Supply Volts	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance Micro-mhos	Amplification Factor		Power Output Watts
Volts	Amps.	Length	Diam.														
1.1	0.25	4 3/16	1 9/16	Class A <sub>1</sub> Amplifier	135	—	—	—	135	-1.5v	67.5	2.5	400000	725	—	—	1609
6.3	0.3	3 1/8	1 5/16	Class A <sub>1</sub> Amplifier	250	1.5	—	1.0	250	-3v †	100	5.3	600000	1100	—	—	1612
				Mixer in Superheterodyne	—	—	—	—	250	-3v	100	2.4	Oscillator Grid (#3) Bias, -10 Volts Conversion Transcond., 375 μmhos				
6.3	0.3	3 1/8	1 5/16	Pentode as Class A <sub>1</sub> Amplifier	250	0.75	—	0.1	100 250	-3v -3v	100 100	2 2	1.0 meg. 1.0 meg.	1185 1225	— —	— —	1620
				Triode as Class A <sub>1</sub> Amplifier	250	1.75	—	—	180 250	-5.3v -8v	⋆ ⋆	5.3 6.5	11000 10500	1800 1900	20 20	— —	

† For signal input control grid (#1); control grid (#3) bias, -3 volts.  
 ⋆ Grids No. 2 and No. 3 are connected to plate.

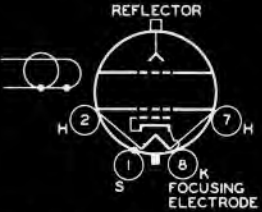
\* Maximum radius.      † Excluding flexible leads.      Note A: Vertical, with tubulation up or down; horizontal with stem press in vertical plane.



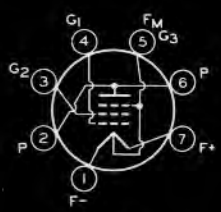
# MISCELLANEOUS TYPES



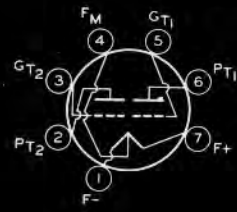
1L4



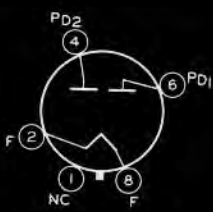
2K26



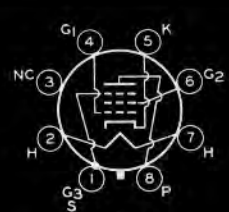
3A4



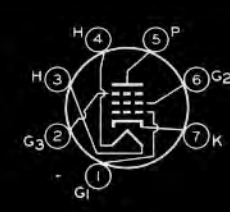
3A5



5R4-GY 5R4-GYB




6AG7-Y



6AK6



6AS6

 Type	Description
<b>1L4</b>	Sharp-Cutoff Pentode. 7-pin miniature type. For rf amplifiers in battery-supply receivers.
<b>2K26</b>	Single-resonator reflex Klystron with an integral resonant cavity and mechanical tuning mechanism. For local oscillator service in applications such as microwave receivers. Can be tuned electrically to give about a 55 Mc vernier adjustment. Useful power output about 100 Mw.
<b>3A4</b>	Power Pentode. 7-pin miniature, coated-filament, dry-cell type. Can deliver 1.2 watts power output at 10 Mc in rf amplifier service.
<b>3A5</b>	Medium-Mu Twin Triode. 7-pin miniature, coated-filament, dry-cell type. Can deliver 2 watts power output at 40 Mc in push-pull class C service.
<b>5R4-GY</b>	Full-Wave Vacuum Rectifier. Coated filament type. Useful in aircraft applications at altitudes up to 40000 feet. Octal 5-pin base.
<b>5R4-GYB</b>	Full-Wave Vacuum Rectifier. Coated-filament type. Useful in aircraft applications at altitudes up to 40000 feet. Octal 5-pin base.
<b>6AG7-Y</b>	Power Pentode. Has a low-loss-phenolic base but otherwise identical with the 6AG7.
<b>6AK6</b>	Power Pentode. 7-pin miniature type. Similar to 6G6-G.
<b>6AS6</b>	Sharp-Cutoff Pentode. 7-pin miniature type with heater-cathode. For use in gated amplifier circuits, delay circuits, and gain-controlled amplifier circuits.
<b>6AS7-G</b>	Low-Mu Twin Triode. Heater-cathode type. Has high perveance, a mu of 2, and an ac plate resistance of 280 ohms. For use as a regulator tube in dc power supplies, and in projection television booster scanning applications. Octal 8-pin base.
<b>6SJ7-Y</b>	Sharp-Cutoff Pentode. Has a low-loss-phenolic base but otherwise identical with the 6SJ7.
<b>12A6</b>	Beam Power Tube. Metal type with 12.6-volt heater. Octal 7-pin base.
<b>125W7</b>	Twin Diode—Medium-Mu Triode. Single-ended metal type with an octal 8-pin base. Similar to the 6SR7 except for heater rating.
<b>125X7-GT</b>	Medium-Mu Twin Triode. Similar to the 6SN7-GT except for heater rating. Octal 8-pin base.
<b>125Y7</b>	Pentagrid Converter. Metal type with an octal 8-pin base. Similar to the 6SA7 except for heater rating.
<b>83</b>	Full-Wave Mercury-Vapor Rectifier. Useful in dc power supplies subject to wide variations in the output current. Values shown are for the temperature range from 20° to 60° C. Medium 4-pin base.
<b>1613</b>	Power Pentode. Heater-cathode type. Useful as a crystal oscillator. For renewal use only.
<b>1614</b>	Beam Power Tube. Heater-cathode type. For police and emergency broadcast use. Octal 7-pin base.

For key to terminal connections see page 30.

# MISCELLANEOUS TYPES

Cathode		Maximum Dimensions Inches		Class of Service	Maximum Ratings			Operating Conditions and Characteristics										RCA Type
					Plate Volts	Plate Dissipation Watts	Grid-No. 2 Input Watts	Plate Supply Volts	Grid-No. 1 Volts(v) or Cathode Resistance Ohms	Grid-No. 2 Supply Volts	Grid-No. 2 Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance Micro-mhos	Amplification Factor	Power Output Watts		
1.4	0.05	2 1/8	3/4	Class A <sub>1</sub> Amplifier	110	—	—	90	0	67.5	1.2	2.9	260000	925	—	—	<b>1L4</b>	
6.3	0.44	3 1/2	1 39/64	Class C CW Oscillator	Maximum Ratings, Absolute Values: DC Resonator Volts, 330 DC Reflector Volts, 0 to -350 Peak Heater-Cathode Volts, ±50										DC Resonator Ma., 35	<b>2K26</b>		
2.8 1.4	0.1 0.2	2 1/8	3/4	Class A <sub>1</sub> Amplifier	150	2.0	0.4	150	-8.4v	90	2.2	13.3	100000	1900	—	0.7→	<b>3A4</b>	
				RF Power Amplifier	150	2.0	0.9	150	Grid Leak	135	6.5	18.3	Power Output, 1.2 watts at 10 Mc.					
2.8 1.4	0.11 0.22	2 1/8	3/4	Class A <sub>1</sub> Amplifier Each Unit	135	5.0	—	90	-2.5v	—	—	3.7	8300	1800	15	—	<b>3A5</b>	
				Push-Pull Class C Amplifier Each Unit	135	1.0	—	135	-20v	Power Output, 2 watts at 40 Mc.		30	Driving Power, 0.2 watt					
5	2	5 5/16	2 1/16	At 40000 Feet with Capacitive Input Filter	AC Volts per Plate (RMS), 750 Max. Peak Inverse Volts, 2400 Min. Total Effective Supply Impedance per Plate, 125 ohms			Max. DC Output Ma., 175 Max. Peak Plate Ma., 650			<b>5R4-GY</b>							
				At 40000 Feet with Inductive Input Filter	AC Volts per Plate (RMS), 850 Max. Peak Inverse Volts, 2400 Min. Value of Input Choke, 5 Henries			Max. DC Output Ma., 250 Max. Peak Plate Ma., 650										
5	2	4 1/4	1 9/16	At 40000 Feet with Capacitive Input Filter	Max. AC Volts per Plate (RMS), 750 Max. Peak Inverse Plate Volts, 2650 Min. Total Effective Supply Impedance per Plate, 100 ohms			Max. DC Output Ma. (Both Plates), 250 Max. Peak Plate Ma., 715			<b>5R4-GYB</b>							
				At 40000 Feet with Inductive Input Filter	Max. AC Volts per Plate (RMS), 800 Max. Peak Inverse Plate Volts, 2650 Min. Value of Input Choke, 5 henries			Max. DC Output Ma. (Both Plates), 250 Max. Peak Plate Ma., 715										
6.3	0.65	3 1/4	1 5/16	Class A <sub>1</sub> Amplifier	300	9.0	1.5	300	-3v	150	7.0	30	130000	11000	—	3.0o	<b>6AG7-Y</b>	
6.3	0.15	2 1/8	3/4	Class A <sub>1</sub> Amplifier	300	2.75	.75	180	-9v	180	2.5	15	200000	2300	—	1.1	<b>6AK6</b>	
6.3	0.175	1 3/4	3/4	Class A <sub>1</sub> Amplifier	180	1.7	0.75	120	-2v	120	3.5	5.2	110000	3200	—	—	<b>6AS6</b>	
6.3	2.5	4 5/8	1 9/16	Class A <sub>1</sub> Amplifier Each Unit	250	13	—	135	250	—	—	125	280	7000	2.0	—	<b>6AS7-G</b>	
6.3	0.3	2 5/8	1 5/16	Class A <sub>1</sub> Amplifier	300	2.5	0.4	250	-3v	100	0.8	3.0	#	1650	—	—	<b>6SJ7-Y</b>	
12.6	0.15	3 1/4	1 5/16	Class A <sub>1</sub> Amplifier	250	7.5	1.5	250	-12.5v	250	3.5	30	70000	3000	—	3.4o	<b>12A6</b>	
12.6	0.15	2 5/8	1 5/16	Class A <sub>1</sub> Amplifier	250	2.5	—	26.5	Grid Res., 2 meg.	—	1.1	15500	1100	17	—	<b>12SW7</b>		
								250	-9v	—	9.5	8500	1900	16	—			
12.6	0.3	3 5/16	1 5/16	Class A <sub>1</sub> Amplifier Each Unit	300	2.5	—	26.5	Grid Res., 0.05 meg.	—	1.8	11500	1800	21	—	<b>12SX7-GT</b>		
								250	-8v	—	9.0	7700	2600	20	—			
12.6	0.15	2 5/8	1 5/16	Converter	300	1.0	1.0	26.5	-1v†	26.5†	1.7†	0.45	—	Conversion Transcond., 250 μmhos		<b>12SY7</b>		
								250	-2v†	100†	8.5†	3.5	1000000	Conversion Transcond., 450 μmhos				
5.0	3.0	5 3/8	2 1/16	With Capacitive Input Filter	Max. AC Volts per Plate (RMS), 450 Max. Peak Inverse Volts, 1550			Max. DC Output Ma., 225 Max. Peak Plate Amp., 1			Min. Total Effec. Supply Imped./Plate, 50 Ohms					<b>83</b>		
				With Inductive Input Filter	Max. AC Volts per Plate (RMS), 550 Max. Peak Inverse Volts, 1550			Max. DC Output Ma., 225 Max. Peak Plate Amp., 1			Min. Value of Input Choke, 3 henries							
6.3	0.7	3 1/4	1 5/16	Class C Telegraphy	275	7.0	2.0	350	-35v	200	10	50	—	—	—	9.0	<b>1613</b>	
6.3	0.9	4 5/16	1 5/8	Class C Telephony**	375	21	2.5	375	-50v	250	7	93	—	—	—	24.5	<b>1614</b>	
				Class C Telegraphy**	450	25	3.5	450	-45v	250	8	100	—	—	—	31		

\* Greater than 1 megohm.

† For Grid-No. 3, which is control grid.

‡ For Grids No. 2 and No. 4, which are internally connected.

⊖ Load for stated power, 10000 ohms.

→ Load for stated power, 8000 ohms.

⊕ Load for stated power, 7500 ohms.

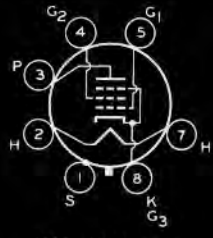
\*\* Intermittent Commercial and Amateur Service.



6AS7-G 12SX7-GT



6SJ7-Y



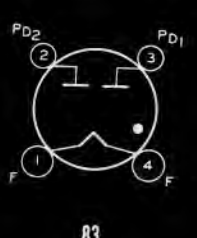
12A6 1613 1614



12SW7

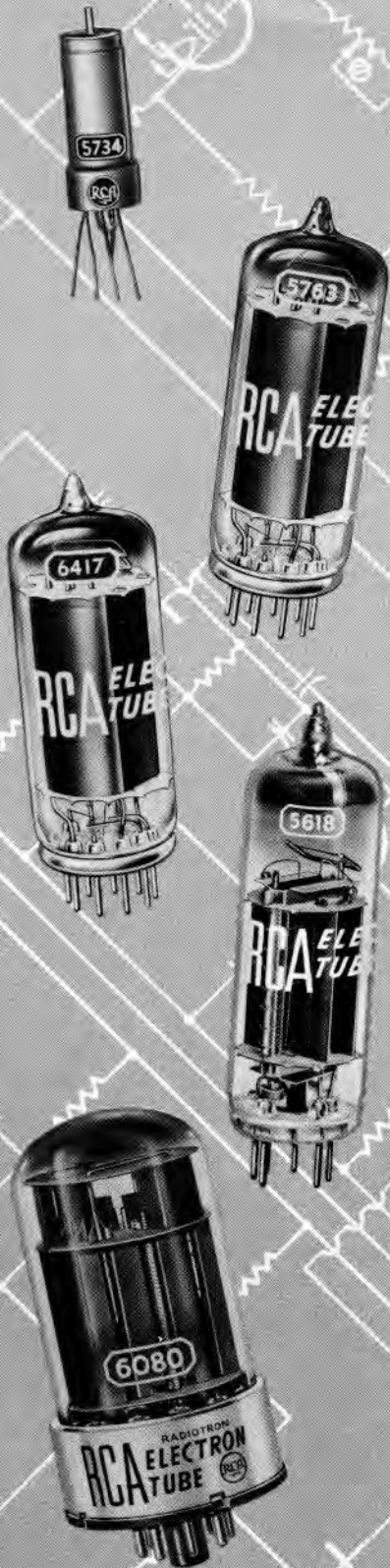



12SY7



83

MISCELLANEOUS TYPES — Cont'd

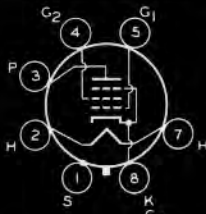


 Type	Description
<b>1619</b>	Beam Power Tube. Has a fast-heating, coated filament. Useful in equipment requiring quick off-to-on action. Octal 7-pin base. Values shown are for two tubes in class AB <sub>2</sub> service.
<b>1621</b>	Power Pentode. Similar to 6F6. For applications requiring continuity of service. Octal 7-pin base. Values shown are for two tubes.
<b>1622</b>	Beam Power Tube. Similar to 6L6. For applications requiring continuity of service. Octal 7-pin base. Values shown are for two tubes.
<b>1626</b>	Low-Mu Triode. For rf oscillator applications requiring stability of characteristics. For renewal use only.
<b>1629</b>	Electron-Ray Tube. Similar to 6E5 except for 12.6-volt heater. Useful as a voltage indicator in aircraft equipment. Octal 7-pin base.
<b>1631</b>	Beam Power Tube. Similar to 6L6 except for 12.6-volt heater and dissipation ratings. For applications critical as to uniformity of characteristics.
<b>1632</b>	Beam Power Tube. Similar to the 25L6 except for 12.6-volt heater and dissipation ratings. For applications critical as to uniformity of characteristics.
<b>1635</b>	High-Mu Twin Triode. Heater-cathode type. For audio amplifier applications. Octal 8-pin base.
<b>5618</b>	VHF Power Pentode. 7-pin miniature type. Has a center-tapped heater for either 3- or 6-volt operation. Off-to-on action takes only one second. Useful as a frequency multiplier at full ratings up to 100 Mc.
<b>5642</b>	Half-Wave Rectifier. Subminiature filamentary type with flexible leads. For use in compact portable equipment requiring high peak inverse voltages.
<b>5687</b>	Medium-Mu Twin Triode. 9-pin miniature type. For general-purpose amplifier applications. Separate base-pin connection for each cathode.
<b>5734</b>	Mechano-Electronic Transducer. Triode type. For translating mechanical vibration into electrical current variations which can be observed and measured. Flexible leads.
<b>5763</b>	VHF Beam Power Tube. 9-pin miniature. For use in compact, low-power mobile transmitters and in low-power stages of fixed station transmitters. Particularly useful in doubler and tripler service. Has unipotential cathode.
<b>5881</b>	Beam Power Tube. Glass-octal type. For output stages of radio receivers and audio amplifiers particularly in the push-pull stages of high-fidelity audio amplifiers. Octal 7-pin base.
<b>6080</b>	Low-Mu Twin Triode. Similar to the 6AS7-G, but smaller in size. Intended for applications critical as to shock and vibration, and requiring reduced susceptibility to electrolysis. Octal 8-pin base.
<b>6417</b>	VHF Beam Power Tube. 9-pin miniature type. Identical with 5763 except for 12.6-volt heater.

For key to terminal connections see page 30.



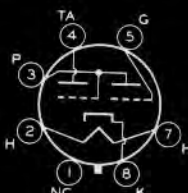
1619



1621 1622 1631 1632



1626



1629



1635



5618

MISCELLANEOUS TYPES - Cont'd

Cathode		Maximum Dimensions Inches		Class of Service	Maximum Ratings			Operating Conditions and Characteristics								RCA Type	
					Plate Volts	Plate Dissipation Watts	Grid-No. 2 Input Watts	Plate Supply Volts	Grid-No. 1 Volts(v) or Cathode Resistance Ohms	Grid-No. 2 Supply Volts	Grid-No. 2 Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance Micro-mhos	Amplification Factor		Power Output Watts
Volts	Amps.	Length	Diam.														
2.5	2.0	4 5/16	1 5/8	Push-Pull Class AB <sub>2</sub> Amplifier	400	15	3.5	400	-16.5v	300	6.5	75	Load for Stated Power (Plate-to-Plate), 6000 Ohms			36	1619
				Class C Telephony §	325	10	2.5	325	-50v	285	7.5	62	—	—	—	13	
				Class C Telegraphy	400	15	3.5	400	-55v	300	10.5	75	—	—	—	19.5	
6.3	0.7	3 3/4	1 5/16	Push-Pull Class A <sub>1</sub> Amplifier	300	7.9	1.9	300	-30v	300	6.5	38	Load for Stated Power (Plate-to-Plate), 4000 Ohms			5.0	1621
6.3	0.9	4 5/16	1 5/8	Push-Pull Class A <sub>1</sub> Amplifier	300	13.8	1.4	300	-20v	250	4.0	86	Load for Stated Power (Plate-to-Plate), 4000 Ohms			10	1622
12.6	0.25	4 1/8	1 1/16	Class C Telegraphy	250	5.0	—	250	-70v	Driving Power 0.5 Watt Approx.		25	—	—	5	4.0	1626
12.6	0.15	4 1/8	1 3/16	Visual Indicator	Plate and Target Supply Volts, 250. Triode Plate Resistor, 1 megohm. At zero grid bias, target ma. = 2, triode plate ma. = 0.2, shadow angle = 90°. At -7.5-volts grid bias, shadow angle = 0°.											1629	
12.6	0.45	4 5/16	1 5/8	Push-Pull Class AB <sub>1</sub> Amplifier	360	16	2.5	360	-22.5v	270	5.0♦	88♦	Load for Stated Power (Plate-to-Plate), 6600 Ohms			26.5	1631
					360	—	—	360	-22.5v	270	5.0♦	88♦	Load for Stated Power (Plate-to-Plate), 3800 Ohms			18	
12.6	0.6	3 3/4	1 5/16	Class A <sub>1</sub> Amplifier	117	5.5	1.25	110	-7.5v	110	4.0	49	13000	9000	—	2.1⊕	1632
6.3	0.6	3 3/16	1 5/16	Class B Amplifier	300	3.0	—	300	0	Plate-to-plate load for power output of 1 tube, 12000 ohms					10.4	1635	
6.0° 3.0^	0.23° 0.46^	2 3/8	3/4	Class A <sub>1</sub> Amplifier**	300	5.0	2.0	250	-8.0v	75	2.0	19	—	3600	—	1.4.	5618
				RF Amp. & Osc. Class C Telegraphy**	300	5.0	2.0	300	-45v	75	7.0	25	Approx. driving power, 0.3 watt			4.5 at 80 Mc	
				Tripler to 80 Mc**	300	5.0	2.0	300	-125v	75	5.5	25	Approx. driving power, 0.75 watt			2.7	
1.25	0.2	2.38	0.4	Half-Wave Rectifier	Max. Peak Inverse Volts, 10,000 Supply Voltage Frequency, 400 Kc Max.					Max. DC Plate Ma., 0.25 Max. Peak Plate Ma., 5					5642		
6.3 12.6	0.9 0.45	2 3/16	7/8	Class A <sub>1</sub> Amplifier Each Unit	300	4.2	—	120 180 250	-2.0v -7.0v -12.5v	— — —	— — —	36 23 12	1560 2000 3000	11500 8500 5400	18 17 16	— — —	5687
6.3	0.15	1.3	0.328	Measurement of Mechanical Vibration	300	0.4	—	300	0	—	—	1.5	7200	275	20	—	5734
6.0	0.75	2 5/8	7/8	RF Amplifier Class C Telephony**	300	12	1.5	300	-42.5v	250	6	50	Approx. Driving Power at 30 Mc. 0.15 Watt			10	5763
				RF Amp. & Osc. Class C Telegraphy	300	12	2.0	300	-60v	250	5	50	Approx. Driving Power at 50 Mc. 0.35 Watt			7.0	
				Tripler to 175 Mc.	300	12	2.0	300	-100v	300	5	35	Approx. Driving Power, 0.6 Watt			1.3	
6.3	0.9	3 15/32	1 7/16	Class A <sub>1</sub> Amplifier	400	23	3.0	250 350	-14v -18v	250 250	4.3 2.5	75 53	30000 48000	6100 5200	— —	6.7♦ 11.3^	5881
				Push-Pull Class AB <sub>1</sub> Amplifier	400	23	3.0	360 360	-22.5v -22.5v	270 270	5.0 5.0	88 88	Load for Stated Power 6600 Ohms 3800 Ohms			26.5 18	
6.3	2.5	4 1/16	1 23/32	DC Amplifier	Maximum Ratings, Absolute Values: Plate Volts, 250 Plate Dissipation, 13 watts Plate Ma., 125 Peak Heater-Cathode Volts, ±300 Grid-Circuit Resistance for Cathode-Bias Operation, 1 megohm											6080	
12.6	0.375	2 5/8	7/8	For other characteristics, refer to type 5763												6417	

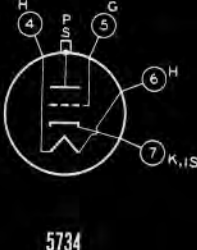
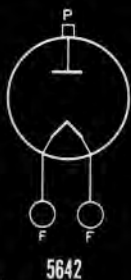
§ Plate modulated.  
♦ Values are for 2 tubes.  
⊕ Load for stated power, 2000 ohms.

■ Each unit.  
⊕ Excluding flexible leads.  
♦ Load for stated power, 2500 ohms.

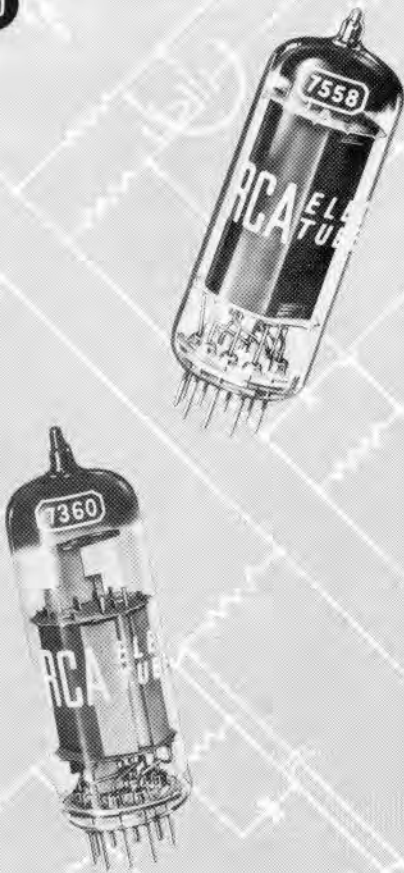
\*\* Intermittent Commercial and Amateur Service. ⚡ Plate supply volts.  
⊕ Load for stated power, 12000 ohms.  
^ Load for stated power, 4200 ohms.


\*\* With a screen resistor of 12500 ohms. ⚡ For plate shaft in undeflected position.  
° For series filament arrangement, filament voltage is applied between pins No. 1 and No. 7. The grid-No. 1 voltage is referred to pin No. 1, and grid-No. 3 is connected to pin. No. 1.

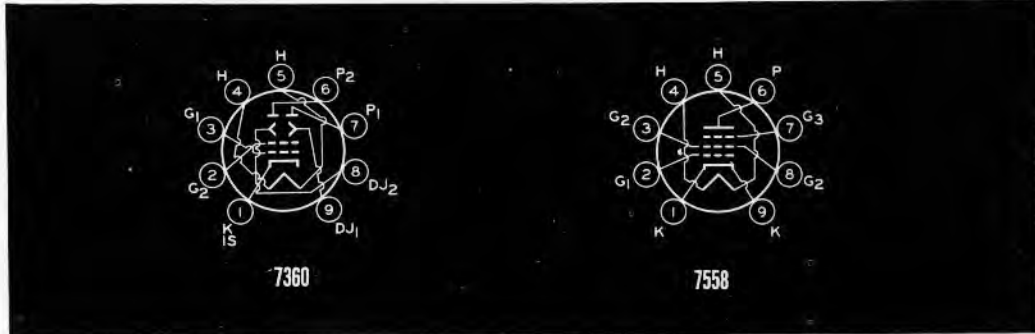
^ For parallel filament arrangement, filament voltage is applied between pin No. 5 and pins No. 1 and No. 7 connected together. Grid-No. 1 voltage is referred to pin No. 5, and grid-No. 3 is connected to pin No. 5.



**MISCELLANEOUS TYPES—Cont'd**



 Type	Description
<b>7360</b>	Beam-Deflection Tube. For use in modulator, demodulator, and frequency-converter applications in single- and double-side band suppressed-carrier communications equipment operating at frequencies up to 100 Mc. 9-pin miniature type.
<b>7558</b>	Beam Power Tube. For use as class C rf amplifier, oscillator or frequency multiplier at frequencies up to 175 Mc. 9-pin miniature type.



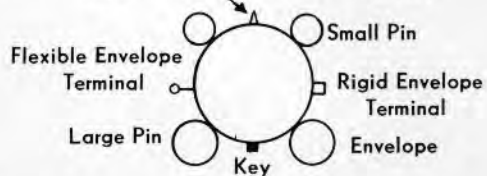
**LEGEND FOR BASE AND ENVELOPE CONNECTION DIAGRAMS**

Diagrams show terminals viewed from base or filament end of tube.

Alphabetical subscripts B, D, P, T, and TR, indicate, respectively, beam unit, diode unit, pentode unit, triode unit, and tetrode unit in multi-unit types.

- |                       |  |                    |
|-----------------------|--|--------------------|
| F = Filament          | IC = Internal Connection—<br>Do Not Use. | NC = No Connection |
| FM = Filament Mid-Tap | IS = Internal Shield                     | P = Plate (Anode)  |
| G = Grid              | K = Cathode                              | S = Shell          |
| H = Heater            | • = Gas-Type Tube                        | TA = Target        |
| HM = Heater Tap       |  | TC = Thermocouple  |

Orientation Symbol Other than Key



In addition to the electron devices covered in this booklet, the ELECTRON TUBE DIVISION of the RADIO CORPORATION OF AMERICA offers the following:

**RECEIVING TUBES FOR ENTERTAINMENT USE**

Rectifiers, Diode Detectors, Converters, Voltage and Power Amplifiers, Oscillators, Mixers, and TV Picture Tubes.

**PHOTOSENSITIVE DEVICES AND CATHODE-RAY TUBES**

Phototubes, Photocells, Camera Tubes, Image-Converter Tubes, Storage Tubes, Cathode-Ray Tubes, Monoscopes.

**MICROWAVE TUBES**

Magnetrons and Traveling-Wave Tubes.

**TEST AND MEASURING EQUIPMENT**

For AM, FM, and TV Servicing as well as for Laboratories and Industrial Use.

**SEMICONDUCTOR DEVICES**

Transistors and Silicon Rectifiers.

**RECEIVING-TYPE INDUSTRIAL TUBES**

Nuvistor Tubes, Special Red Tubes, Premium Tubes, Pencil-Type Tubes, Computer Tubes, Glow-Discharge Tubes, Small Thyratrons, Vacuum-Gauge Tubes, and Other Special Types.

**DRY BATTERIES**

For Electron-Tube and Transistor Radios, Flashlights, and Industrial Applications.

**AUDIO DEVICES AND TV ACCESSORIES**

Magnetic-Recording Sound Tape and Accessories, TV-Set Couplers, and Lightning Arrestors.

**RCA VICTOR SERVICE PARTS**

For RCA Phonographs, Radios, and TV Receivers.

For technical information on any of these items, see your RCA Tube Distributor, or write to Commercial Engineering, RCA, Harrison, New Jersey.

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MISCELLANEOUS TYPES - Cont'd

Cathode		Maximum Dimensions Inches		Class of Service	Maximum Ratings			Operating Conditions and Characteristics								Type		
					Plate Volts	Plate Dissipation Watts	Grid-No. 2 Input Watts	Plate Supply Volts	Grid- No. 1 Volts(v) or Cathode Resistance Ohms	Grid- No. 2 Supply Volts	Grid- No. 2 Current Ma.	Plate Current Ma.	AC Plate Resistance Ohms	Trans-conductance Micro-mhos	Amplification Factor		Power Output Watts	
Volts	Amps.	Length	Diam.															
6.3	0.35	2 5/8	7/8	Balanced Modulator and/or Balanced Mixer	300+	1.5+	0.5	Plate Volts (Each Plate), 150 Peak RF Grid-No. 1 Volts, 10 Deflecting-Electrode Volts (Approx. Each Electrode), 25 Push-Pull Peak-to-Peak Double-Sideband Output Volts (Balanced Modulator), 4 Push-Pull Peak-to-Peak Single-Sideband Output Volts (Balanced Mixer), 40 Plate-to-Plate Load Imped.: Balanced Mixer, 10000 Ohms; Balanced Modulator, 5000 ohms	Grid-No. 2 Volts, 175 Plate Ma. (Each Plate), 1.5	Cathode Resist., 1200 Ohms Grid-No. 2 Ma., 0.75								<b>7360</b>
6.3	0.8	2 5/8	7/8	RF Power Amp. & Osc. Class C Telephony	300	10	2.0	300	-42v	200	3.7	70	—	—	—	8.5	<b>7558</b>	
				Tripler to 175 Mc	300	10	2.0	200	-90v	200	3.0	50	—	—	—	2.3		
				Class AB <sub>1</sub> Amplifier	300 <sup>+</sup>	10 <sup>+</sup>	2.0 <sup>+</sup>	300 <sup>+</sup>	-21v <sup>+</sup>	250 <sup>+</sup>	2.0 <sup>+</sup>	40 <sup>+</sup>	Load for Stated Power (Plate-to-Plate), 5000 Ohms			20.5		

+ Each plate.

■ Each unit.

♦ Values are for 2 tubes.

INDEX TO RCA RECEIVING-TYPE TUBES FOR INDUSTRY AND COMMUNICATIONS

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## ELECTRON TUBES—

- **RCA TUBE HANDBOOK—HB-3** (7 $\frac{3}{8}$ " x 5 $\frac{1}{4}$ "). Five deluxe 2-inch-capacity black binders imprinted in gold. The bible of the industry—contains over 4200 pages of loose-leaf data and curves on RCA receiving tubes; picture tubes; oscillograph tubes; special-purpose kinescopes; photosensitive devices including phototubes, photoconductive cells, photojunction cells, and camera tubes; storage tubes; gas tubes; and other miscellaneous types for special applications. Available on subscription basis. Price \$17.50 including service for first year. Also available with HB-10 Semiconductor Products Handbook at special combination price of \$20.00.\* Write to Commercial Engineering for descriptive folder and order form.
- **RCA RECEIVING TUBE MANUAL—RC-19** (8 $\frac{1}{4}$ " x 5 $\frac{3}{4}$ ")—384 pages. Revised and expanded. Contains technical data on more than 625 receiving types. Features tube theory written for the layman, application information and a circuit section. Features lie-flat binding. Price 75 cents.\*
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