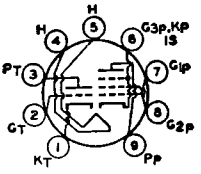


9DX

MEDIUM-MU TRIODE—SHARP-CUTOFF PENTODE

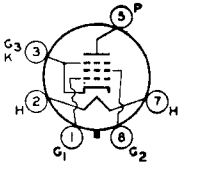
6AU8A

Miniature type used in television receiver applications. Pentode unit is used as video amplifier, if amplifier, and agc amplifier. Triode unit is used in sync-amplifier, sync-separator, sync-clipper, and phase-inverter circuits. **Outlines section,** 6E; requires 9-contact socket.

Heater Voltage (ac/dc)	6.3	volts
Heater Current	0.6	ampere
Heater Warm-up Time (Average)	11	seconds
Heater-Cathode Voltage:		
Peak value	±200 max	volts
Average value	100 max	volts
Direct Interelectrode Capacitances:		
Triode Unit:		
Grid to Plate	2.2	pF
Grid to Cathode and Heater	2.6	pF
Plate to Cathode and Heater	0.34	pF
Pentode Unit:		
Grid No.1 to Plate	0.06	pF
Grid No.1 to Cathode, Heater, Grid No.2, Grid No.3, and Internal Shield	7.5	pF
Plate to Cathode,, Heater, Grid No.2, Grid No.3, and Internal Shield	3.4	pF
Triode Grid to Pentode Plate	0.022 max	pF
Pentode Grid No.1 to Triode Plate	0.006 max	pF
Pentode Plate to Triode Plate	0.12 max	pF

Class A_1 Amplifier

MAXIMUM RATINGS (Design-Maximum Values)	Triode Unit	Pentode Unit	
Plate Voltage	330	330	volts
Grid-No.2 (Screen-Grid) Supply Voltage	—	330	volts
Grid-No.2 Voltage		See curve page 300	
Grid-No.1 (Control-Grid) Voltage, Positive-bias value	0	0	volts
Plate Dissipation	2.8	3.3	watts
Grid-No.2 Input:			
For grid-No.2 voltages up to 165 volts	—	1	watt
For grid-No.2 voltages between 165 and 330 volts		See curve page 300	
CHARACTERISTICS			
Plate Supply Voltage	150	200	volts
Grid-No.2 Supply Voltage	—	125	volts
Cathode-Bias Resistor	150	82	ohms
Amplification Factor	43	—	
Plate Resistance (Approx.)	8100	100000	ohms
Transconductance	5300	8000	μmhos
Plate Current	9.5	17	mA
Grid-No.2 Current	—	3.4	mA
Grid-No.1 Voltage (Approx.) for plate current of 100 μA	—6.5	—7.5	volts
MAXIMUM CIRCUIT VALUES			
Grid-No.1-Circuit Resistance:			
For fixed-bias operation	0.5	0.25	megohm
For cathode-bias operation	1	1	megohm



6CK

BEAM POWER TUBE

6AV5GA

12AV5GA, 25AV5GA

Glass octal type used as horizontal-deflection amplifier in television receivers. **Outlines section,** 19C; requires octal socket. Types 12AV5GA and 25AV5GA are identical with type 6AV5GA except for heater ratings.

	6AV5GA	12AV5GA	25AV5GA	
Heater Voltage (ac/dc)	6.3	12.6	25	volts
Heater Current	1.2	0.6	0.3	amperes
Heater Warm-up Time (Average)	—	11	—	seconds

Heater-Cathode Voltage:				
Peak value	±200 max	±200 max	±200 max	volts
Average value	100 max	100 max	100 max	volts
Direct Interelectrode Capacitances (Approx.)				
Grid No.1 to Plate			0.5	pF
Grid No.1 to Cathode, Heater, Grid No.2, and Grid No.3			14	pF
Plate to Cathode, Heater, Grid No.2, and Grid No.3			7	pF

Class A_1 Amplifier

CHARACTERISTICS	Pentode Connection		Triode• Connection	
Plate Voltage	60	250	150	volts
Grid-No.2 (Screen-Grid) Voltage	150	150	150	volts
Grid-No.1 (Control-Grid) Voltage	0	−22.5	−22.5	volts
Plate Resistance	—	14500	—	ohms
Transconductance	—	5900	—	μmhos
Plate Current	260	57	—	mA
Screen Current	26	2.1	—	mA
Grid-No.1 Voltage (Approx.) for plate current of 1 mA	—	−43	—	volts
Amplification Factor	—	—	4.3	

• Grid No.2 connected to plate.

Horizontal-Deflection Amplifier

For operation in a 525-line, 30-frame system

MAXIMUM RATINGS (Design-Center Values)		
DC Plate Voltage	550	volts
Peak Positive-Pulse Plate Voltage# (Absolute Maximum)	5500°	volts
Peak Negative-Pulse Plate Voltage	1250	volts
DC Grid-No.2 Voltage	175	volts
Peak Negative-Pulse Grid-No.1 Voltage	300	volts
Peak Cathode Current	400	mA
Average Cathode Current	110	mA
Grid-No.2 Input	2.5	watts
Plate Dissipation††	11	watts
Bulb Temperature (At hottest point)	210	°C
MAXIMUM CIRCUIT VALUE		
Grid-No.1-Circuit Resistance	0.47	megohm

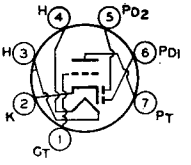
Pulse duration must not exceed 15% of a horizontal scanning cycle (10 microseconds).
° Under no circumstances should this absolute value be exceeded.
†† A bias resistor or other means is required to protect the tube in absence of excitation.

6AV5GT Refer to chart at end of section.

6AV6

4AV6, 12AV6

TWIN DIODE— HIGH-MU TRIODE



7BT

Miniature type used as combined detector, amplifier, and avc tube in automobile and ac-operated radio receivers. The 6AV6 may be substituted directly for the 6AT6 in applications where the higher amplification of the 6AV6 is advantageous. Outlines section, 5C; requires miniature 7-contact socket. Types 4AV6, and 12AV6 are identical with type 6AV6 except for heater ratings.

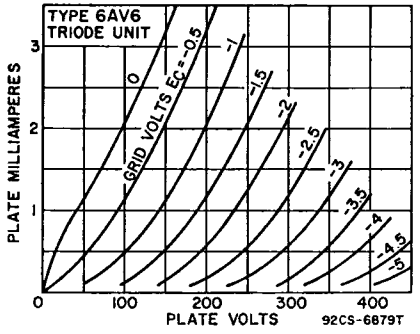
	4AV6	6AV6	12AV6	
Heater Voltage (ac/dc)	4.2	6.3	12.6	volts
Heater Current	0.45	0.3	0.15	ampere
Heater Warm-up Time (Average)	11	—	—	seconds
Heather-Cathode Voltage:				
Peak value	±200 max	±200 max	±200 max	volts
Average value	100 max	100 max	100 max	volts
Direct Interelectrode Capacitances:				
Triode Grid to Triode Plate			2	pF
Triode Grid to Cathode and Heater			2.2	pF
Triode Plate to Cathode and Heater			0.8•	pF
Plate of Diode Unit No.2 to Triode Grid			0.04 max	pF

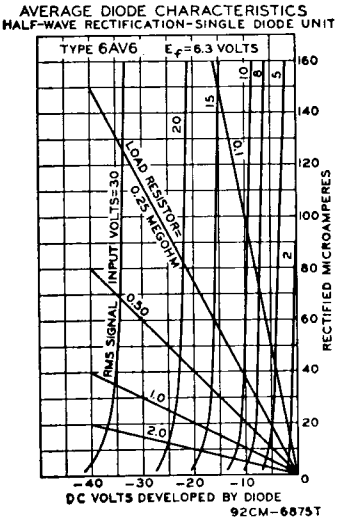
• This value is 1.2 pF with external shield connected to cathode.

Triode Unit as Class A_1 Amplifier

MAXIMUM RATING (Design-Maximum Value)

Plate Voltage	330	volts
Grid Voltage, Positive-bias value	0	volts
Plate Dissipation	0.55	watt





CHARACTERISTICS

Plate Voltage	100	250	volts
Grid Voltage	—1	—2	volts
Amplification Factor	100	100	
Plate Resistance	80000	62500	ohms
Transconductance	1250	1600	μmhos
Plate Current	0.50	1.2	mA

Diode Units

MAXIMUM RATING (Design-Maximum Value)

Plate Current (Each Unit)	1	mA

The two diode plates are placed around a cathode, the sleeve of which is common to the triode unit. Each diode plate has its own base pin. Diode biasing of the triode unit is not recommended.

Installation and Application

The triode unit of the 6AV6 is recommended for use only in resistance-coupled circuits. Refer to the **Resistance-Coupled Amplifier** section for typical operating conditions. **Grid bias** for the triode unit of the 6AV6 may be obtained from a fixed source, such as a fixed-voltage tap on the dc power supply, or from a cathode-bias resistor. It should not be obtained by the diode-biasing method because of the probability of plate-current cutoff, even with relatively small signal voltages applied to the diode circuit.

Refer to chart at end of section. **6AV11**

Refer to chart at end of section. **6AW8**