**12AV5GA**

Refer to type 6AV5GA.

12AV6

Refer to type 6AV6.

12AV7

Refer to chart at end of section.

12AW6

Refer to chart at end of section.

12AX3

Refer to type 6AX3.

**12AX4GT
12AX4GTA**

Refer to chart at end of section.

12AX4GTB

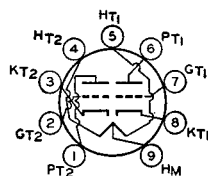
Refer to type 6AX4GTB.

12AX7Refer to chart at end of section.
For replacement use type 12AX7A/ECC83.**12AX7A**

For replacement use type 12AX7A/ECC83.

12AX7A/ ECC83

HIGH-MU TWIN TRIODE

**9A**

Miniature types used as phase inverters or twin resistance-coupled amplifiers in radio equipment. Outlines section, 6B; require miniature 9-contact socket. Each triode unit is independent of the other except for common heater. For characteristics and curves, refer to type 6AV6. For typical operation as a resistance-coupled amplifier, refer to Resistance-Coupled Amplifier section.

Heater Arrangement:	Series	Parallel	
Heater Voltage (ac/dc)	12.6	6.3	volts
Heater Current	0.15	0.3	ampere
Heater-Cathode-Voltage:			
Peak value		±200 max	volts
Average value		100 max	volts
Direct Interelectrode Capacitances (Approx.):	Unit No.1	Unit No.2	
Grid to Plate	1.7	1.7	pF
Grid to Cathode and Heater	1.6	1.6	pF
Plate to Cathode and Heater	0.46	0.34	pF

Class A₁ Amplifier (Each Unit)

MAXIMUM RATINGS (Design-Maximum Values)

Plate Voltage	330	volts
Grid Voltage:		
Negative-bias value	55	volts
Positive-bias value	0	volts
Plate Dissipation	1.2	watts

EQUIVALENT-NOISE AND HUM VOLTAGE (References To Grid, Each Unit)*

Average Value	1.8	μV rms
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* Measured in "true rms" units under the following conditions: Heater voltage (parallel connection), 6.3 volts ac; center tap of heater-transformer grounded; plate supply voltage, 250 volts dc; plate load resistor, 100000 ohms; cathode resistor, 2700 ohms bypassed by 100-μF capacitor; grid resistor, 0 ohms; and amplifier covering frequency range between 25 and 10000 Hz.

Refer to chart at end of section.

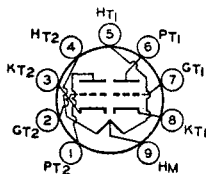
12AY3

Refer to type 6AY3B.

12AY3A₆

MEDIUM-MU TWIN TRIODE

12AY7



9A

Miniature type used in the first stages of high-gain audio-frequency amplifiers. Outlines section, 6B; requires miniature 9-contact socket. Each triode unit is independent of the other except for the common heater. Use of the 12.6-volt connection with an ac heater supply is not recommended for applications involving low hum. For typical operation as a resistance-coupled amplifier, refer to Resistance-Coupled Amplifier section.

Heater Arrangement:	Series	Parallel	
Heater Voltage (ac/dc)	12.6	6.3	volts
Heater Current	0.15	0.3	ampere
Peak Heater-Cathode Voltage		±90 max	volts
Direct Interelectrode Capacitances (Approx., Each Unit)			
Grid to Plate		1.3	pF
Grid to Cathode and Heater		1.3	pF
Plate to Cathode and Heater		0.6	pF

Class A₁ Amplifier (Each Unit)

MAXIMUM RATINGS (Design-Center Values)

Plate Voltage	300	volts
Grid Voltage:		
Negative-bias value	50	volts
Positive-bias value	0	volts
Cathode Current	10	mA
Plate Dissipation	1.5	watts

CHARACTERISTICS

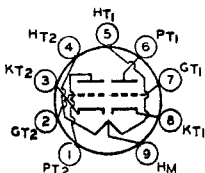
Plate Voltage	250	volts
Grid Voltage	-4	volts
Amplification Factor	40	
Plate Resistance	22800	ohms
Transconductance	1750	μmhos
Plate Current	3	mA
Grid Voltage (Approx.) for plate current of 10 mA	-11	volts

Refer to chart at end of section.

12AZ7

HIGH-MU TWIN TRIODE

12AZ7A



9A

Miniature type used in direct-coupled cathode-drive rf amplifier circuits of vhf color and black-and-white television tuners. Outlines section, 6B; requires miniature 9-contact socket. For characteristics as class A₁ amplifier, refer to miniature type 12AT7.