**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**

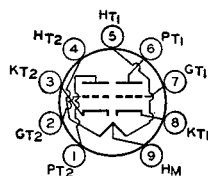
Refer to chart at end of section.

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	μ V 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- μ F capacitor; grid resistor, 0 ohms; and amplifier covering frequency range between 25 and 10000 Hz.

Refer to chart at end of section.

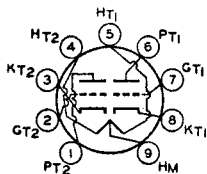
12AY3

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		\pm 90 max	volts
Direct Interelectrode Capacitances (Approx., Each Unit)			volts
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

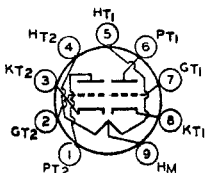
Plate Voltage	250	volts
Grid Voltage	-4	volts
Amplification Factor	40	
Plate Resistance	22800	ohms
Transconductance	1750	μ mhos
Plate Current	3	mA
Grid Voltage (Approx.) for plate current of 10 mA	-11	volts

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.