

Class A1 Push-Pull Amplifier (Values are for Two Tubes)

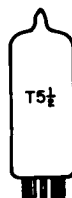
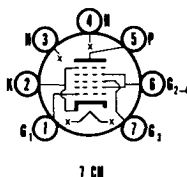
Plate Voltage	250 Volts
Grid No. 2 Voltage	250 Volts
Grid No. 1 Voltage	-15 Volts
Peak AF Grid No. 1 Voltage	30 Volts
Zero Signal Plate Current	70 Ma
Maximum Signal Plate Current	79 Ma
Zero Signal Grid No. 2 Current	5 Ma
Maximum Signal Grid No. 2 Current	13 Ma
Plate to Plate Load Resistance	10,000 Ohms
Maximum Signal Power Output	10 Watts
Total Harmonic Distortion	5 Percent

NOTE:

- (1) This tube is intended to be used in automotive service from a nominal 12 volt battery source. The heater is therefore designed to operate over the 10.0 to 15.9 voltage range encountered in this service. The maximum ratings of the tube provide for an adequate safety factor such that the tube will withstand the wide variation in supply voltages.

12AD6**OSCILLATOR and MIXER****Pentagrid Converter**

Construction	Miniature T-5½
Base	Button 7 Pin, E7-1
Basing	7CH
Outline	5-2
Maximum Diameter	0.750 In.
Maximum Seated Height	1.875 In.
Maximum Overall Height	2.125 In.

**ELECTRICAL DATA****HEATER OPERATION**

Heater Voltage ⁽¹⁾	12.6 Volts
Heater Current	150 Ma
Maximum Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	30 Volts
Heater Positive with Respect to Cathode	30 Volts

DIRECT INTERELECTRODE CAPACITANCES

	Shielded ⁽²⁾	Unshielded
Grid No. 3 to Plate (Max.)	0.26	0.30 Pf
Grid No. 3 to Grid No. 1 (Max.)	0.15	0.15 Pf
RF Input: g3 to (h + k + g1 + g2 and g4 + g5 + p)	7.0	7.0 Pf
Oscillator Input: g1 to (h + k + g1 + g2 and g4 + g3 + g5)	3.2	3.2 Pf
Mixer Output: p to (h + k + g1 + g2 and g4 + g3 + g5)	12.0	7.0 Pf
Oscillator Output: k to (h + g2 and g4 + g3 + p)	11	11 Pf
Oscillator Grid No. 1 to Plate (Max.)	2.2	2.2 Pf

RATINGS (Design Center Rating System)

Plate Voltage (Max.)	16 Volts
Grid No. 2 and No. 4 Voltage (Max.)	16 Volts
Grid No. 2 and No. 4 Supply Voltage (Max.)	16 Volts
Negative DC Grid No. 3 Voltage (Max.)	16 Volts
Positive DC Grid No. 3 Voltage (Max.)	0 Volt
Cathode Current (Max.)	20 Ma
Grid No. 3 Circuit Resistance (Max.)	10 Megohms

CHARACTERISTICS AND TYPICAL OPERATION**Converter—Self Excitation**

Plate Voltage	12.6 Volts
Grid No. 2 and 4 Voltage	12.6 Volts
Grid No. 3 Voltage ⁽³⁾	0 Volt
Grid No. 3 Resistor	2.2 Megohms
Plate Voltage	350 μ a
Grid No. 1 Resistor (Oscillator Grid)	33,000 Ohms
Grid No. 1 Voltage (Oscillator Grid) Pk to Pk	4.5 Volts
Grid No. 1 Current (Oscillator Grid)	60 μ a
Conversion Transconductance	320 μ mhos
Plate Resistance (Approx.)	0.4 Megohm
Cathode Current	1600 μ a
Grid No. 3 Voltage for Gc = 5 μ mhos (Approx.)	-3 Volts
Grid No. 3 Voltage for Gc = 0.5 μ mhos (Approx.)	-4 Volts

Oscillator—Not Oscillating

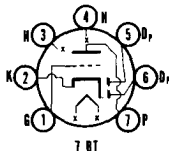
Plate Voltage	12.6 Volts
Grid No. 2 and 4 Voltage	12.6 Volts
Grid No. 3 Voltage	0 Volt
Grid No. 1 Voltage	0 Volt
Transconductance	3600 μ mhos
Amplification Factor	9.4
Cathode Current	4.5 Ma
Grid No. 1 Voltage for $I_b = 10 \mu$ a (Approx.)	-3.7 Volts

NOTES:

- (1) This tube is intended for use in automobile radios operated from a nominal 12 volt battery. Design of the tube is such that the heater will operate satisfactorily over the range 10.0 volts to 15.9 volts, and that the maximum ratings provide a safety factor for the wide voltage variation encountered with the type of supply.
- (2) External shield No. 316 connected to Pin 2.
- (3) Average contact potential is developed across the specified grid resistor.
- (4) Connected to plate.

DETECTOR and AF AMPLIFIER**12AE6A****Double Diode and Medium Mu Triode**

Construction	Miniature T-5½
Base	Button 7 Pin, E7-1
Basing	7BT
Outline	5-2
Maximum Diameter	0.750 In.
Maximum Seated Height	1.875 In.
Maximum Overall Height	2.125 In.

**ELECTRICAL DATA****HEATER OPERATION**

Heater Voltage ⁽¹⁾	12.6 Volts
Heater Current	150 Ma
Maximum Heater-Cathode Voltage	
Heater Negative with Respect to Cathode	30 Volts
Heater Positive with Respect to Cathode	30 Volts

DIRECT INTERELECTRODE CAPACITANCES (Unshielded)

Grid to Plate	2.0 Pf
Input	1.8 Pf
Output	1.1 Pf
Diode to Diode	0.9 Pf

RATINGS (Design Center Rating System)**Class A1 Amplifier**

Plate Voltage (Max.)	30 Volts
Cathode Current (Max.)	20 Ma
Grid Circuit Resistance (Max.)	10 Megohms

Diode Section

Average Diode Current (Max.)	1 Ma
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CHARACTERISTICS AND TYPICAL OPERATION**Class A1 Amplifier****Triode Section**

Plate Voltage	12.6	12.6 Volts
Grid Voltage	0	— Volt
Grid Resistor	0	10 Megohms
Plate Current	1.0	0.32 Ma
Transconductance	1300	715 μ mhos
Plate Resistance	13	20 K Ohms
Amplification Factor	16.7	14.3

Diode Section

Average Diode Current with 10 Volts Applied (Each Diode)	2.0 Ma
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- (1) This tube is intended for use in automobile radios operated from a nominal 12 Volt battery. Design of the tube is such that the heater will operate satisfactorily over the range 10.0 volts to 15.9 volts, and that the maximum ratings provide a safety factor for the wide voltage variation encountered with this type of supply.