12SF5

Description and Rating

HIGH-MU TRIODE AMPLIFIER

GENERAL DESCRIPTION

Principal Application: The 12SF5 is a heater-cathode type high-mu triode designed for service as a high gain audio-frequency amplifier and is especially useful in resistance-coupled amplifier circuits in a-c/d-c or battery operated equipment. Except for heater rating the 12SF5 and 6SF5 are identical.

Cathode: Coated Unipotential
Heater Voltage (A-C or D-C) 12.6 Volts
Heater Current 0.15 Ampere
Envelope: MT-8 Metal Shell
Base: B6-23 Small Wafer Octal 6-Pin Phenolic

Mounting Position: Any
Direct Inter-electrode Capacitances: *
Grid to Plate 2.4 μf
Input 4.0 μf
Output 3.6 μf

PHYSICAL DIMENSIONS

TERMINAL CONNECTIONS

Pin 1 - Metal Shell
Pin 2 - Cathode
Pin 3 - Grid
Pin 5 - Plate
Pin 7 - Heater
Pin 8 - Heater

BASING DIAGRAM

RMA 6AB
BOTTOM VIEW

MAXIMUM RATINGS

Design Center Absolute
Plate Voltage 300 330 Volts
D-C Heater-Cathode Voltage 90 100 Volts

CLASS A AMPLIFIER

CHARACTERISTICS AND TYPICAL OPERATION

Heater Voltage 12.6 Volts
Plate Voltage 100 250 Volts
Grid Bias Voltage -1 -2 Volts
Amplification Factor 100 100
Plate Resistance 85000 66000 Ohms
Transconductance 1150 1500 Micromhos
Plate Current 0.4 0.9 Milliampere

* Approximate values with metal shell connected to cathode.
CLASS A RESISTANCE-COUPLED AMPLIFIER

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<th>Rs</th>
<th>Lbb = 30 Volts</th>
<th>Lbb = 180 Volts</th>
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Note: Coupling capacitors (C) should be selected to give desired frequency response. Rk should be adequately bypassed.

Notes: 1. Eo is maximum RMS voltage output for five percent (5%) total harmonic distortion. 2. Gain measured at 2.0 volts RMS output. 3. For zero-bias data generator impedance is negligible. Value of R1 is non-critical.

AVERAGE PLATE CHARACTERISTICS

plate current in milliampers

plate voltage in volts

Et = 12.5 Volts
AVERAGE CHARACTERISTICS

TRANSCONDUCTANCE (in micromhos)

PLATE RESISTANCE (in kilohms)

AMPLIFICATION FACTOR

PLATE CURRENT IN MILLIAMPERES

$E_f = 12.6 \text{ VOLTS}$

$E_b = 250 \text{ VOLTS}$