6BF6
Description and Rating
DUPLEX-DIODE TRIODE

GENERAL DESCRIPTION
Principal Application: The 6BF6 is a miniature duplex-diode, medium-mu triode. It is designed for use as a combined detector, amplifier and automatic-volume-control tube. Electrically the 6BF6 is similar to the metal type 6SR7.

Cathode: Coated Unipotential
Heater Voltage (A-C or D-C) 6.3 Volts
Heater Current 0.3 Ampere

Envelope: T-5s Glass
Base: E7-1 miniature Glass-Button 7-Pin
Mounting Position: Any

PHYSICAL DIMENSIONS

TERMINAL CONNECTIONS
Pin 1 - Triode Grid
Pin 2 - Cathode
Pin 3 - Heater
Pin 4 - Heater
Pin 5 - Number 2 Diode Plate
Pin 6 - Number 1 Diode Plate
Pin 7 - Triode Plate

BASING DIAGRAM

MAXIMUM RATINGS

DESIGN-CENTER VALUES:
TRIODE SECTION
Peak Heater-Cathode Voltage
Heater Negative with Respect to Cathode 90 Volts
Heater Positive with Respect to Cathode 90 Volts
Plate Voltage 300 Volts
Plate Dissipation 2.5 Watts

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A1 AMPLIFIER: TRIODE SECTION
Plate Voltage 250 Volts
Grid Voltage -9 Volts
Plate Resistance 8500 Ohms
Transconductance 1900 micromhos
Amplification Factor 16
Plate Current 9.5 Milliamperes
Load Resistance 10000 Ohms
Total Harmonic Distortion 6.5 Per Cent
Power Output 300 Milliwatts

DIODE SECTIONS
Minimum Diode Current per Plate with 10 Volts D-C Applied 0.6 Milliamperes

Note: Diode biasing of the triode unit of the 6BF6 is not suitable.
CLASS A RESISTANCE-COUPLED AMPLIFIER

<table>
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<tr>
<th>Rp</th>
<th>Rg1</th>
<th>Rs</th>
<th>Ebb - 90 Volts</th>
<th>Ebb - 180 Volts</th>
<th>Ebb - 300 Volts</th>
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<td>2200</td>
<td>9</td>
<td>14</td>
<td>2000</td>
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<tr>
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<tr>
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<td>3200</td>
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<tr>
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Note: Coupling capacitors C1 should be selected to give desired frequency response. Rk should be adequately by-passed.

Notes: 1. Eo is peak output voltage given at the point where grid current begins to flow. 2. Gain measured at 50 volts RMS output. * value of Rs is non-critical.

AVERAGE PLATE CHARACTERISTICS

TRIODE SECTION

Plate Current in Milliamperes vs. Plate Voltage in Volts
AVERAGE TRANSFER CHARACTERISTICS
TRIODE SECTION

$E_f = $ RATED VALUE

GRID VOLTAGE IN VOLTS

PLATE CURRENT IN MILLIAMPERES

OPERATION CHARACTERISTICS
EACH DIODE

$E_f = $ RATED VALUE

DC VOLTAGE DEVELOPED BY DIODE IN VOLTS

RECTIFIED CURRENT IN MICROAMPERES

LOAD RESISTANCE = 2.0 MEG Ohms

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GENERAL ELECTRIC
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$\triangle$ Supersedes pages 3 and 4, dated 11-56.