Electronic TUBES

6BW8

DUPLEX-DIODE PENTODE

DESCRIPTION AND RATING

The 6BW8 is a duplex-diode sharp-cutoff pentode in which separate cathodes are provided for the diode and pentode sections. The diode sections are primarily intended for use as a horizontal phase detector in television receivers. The pentode section is suitable for use as a sound intermediate-frequency amplifier, sound limiter, and automatic-gain-control keyer.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential
Heater Voltage, AC or DC . . . . . 6.3 ± 10% Volts
Heater Current . . . . . 0.45 Amperes
Direct Interelectrode Capacitances*
  Pentode Grid-Number 1 to Plate, maximum . . . . . 0.020 μμf
  Pentode Input . . . . . 4.8 μμf
  Pentode Output . . . . . 2.6 μμf
  Grid-Number 1 to Each Diode Plate, maximum . . . . . 0.006 μμf
  Diode-Number 1 Plate to Diode Cathode and Heater . . . . . 1.3 μμf
  Diode-Number 2 Plate to Diode Cathode and Heater . . . . . 1.2 μμf

MECHANICAL

Mounting Position—Any
Envelope—T-6½, Glass
Base—E9-1, Small Button 9-Pin
* Without external shield.

MAXIMUM RATINGS

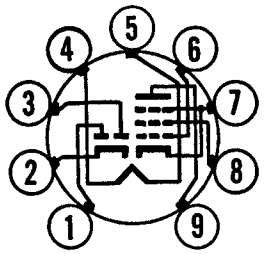
DESIGN-MAXIMUM VALUES

Plate Voltage . . . . . 330 Volts
Screen-Supply Voltage . . . . . 330 Volts
Screen Voltage—See Screen Rating Chart
Positive DC Grid-Number 1 Voltage . . . . . 0 Volts
Negative DC Grid-Number 1 Voltage . . . . . 55 Volts
Plate Dissipation . . . . . 3.0 Watts
Screen Dissipation . . . . . 0.55 Watts
Heater-Cathode Voltage
  Heater Positive with Respect to Cathode
    DC Component . . . . . 100 Volts
    Total DC and Peak . . . . . 200 Volts
  Heater Negative with Respect to Cathode
    Total DC and Peak . . . . . 200 Volts
Grid-Number 1 Circuit Resistance
  With Fixed Bias . . . . . 0.1 Megohms
  With Cathode Bias . . . . . 0.5 Megohms
Diode Current for Continuous Operation, Each Diode . . . . . 5.0 Milliamperes

Design-Maximum Ratings are the limiting values expressed with respect to bogie tubes at which satisfactory tube life can be expected to occur for the types of service for which the tube is rated. Therefore, the equipment designer must establish the circuit design so that initially and throughout equipment life no design-maximum value is exceeded with a bogie tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, and environmental conditions.

GENERAL ELECTRIC

BASING DIAGRAM

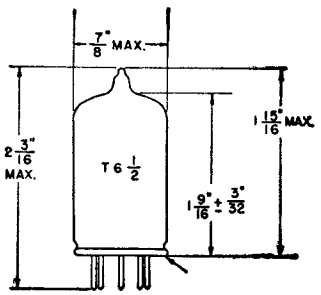


RETMA 9HK

TERMINAL CONNECTIONS

Pin 1—Diode Number 2 Plate
Pin 2—Diode Cathode
Pin 3—Diode Number 1 Plate
Pin 4—Heater
Pin 5—Heater
Pin 6—Pentode Grid Number 1
Pin 7—Pentode Cathode, Grid Number 3, and Internal Shield
Pin 8—Pentode Grid Number 2 (Screen)
Pin 9—Pentode Plate

PHYSICAL DIMENSIONS



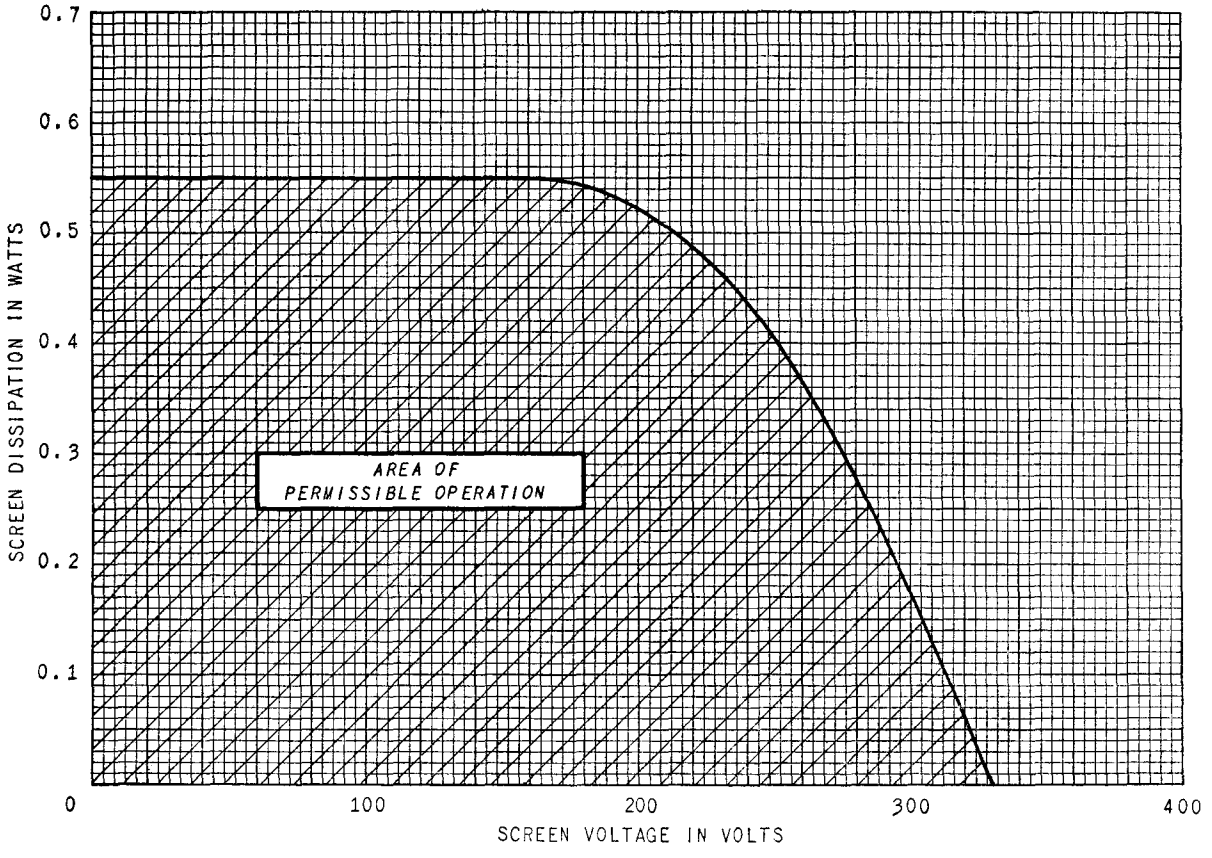
RETMA 6-2

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

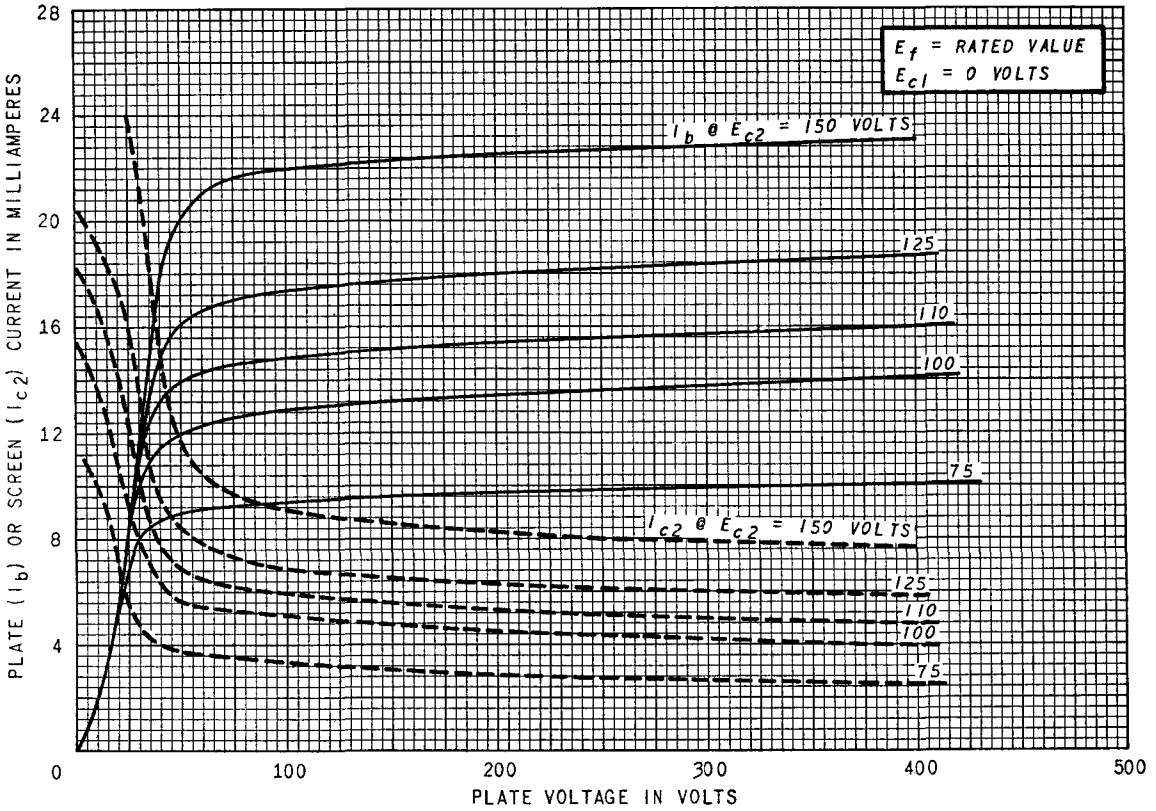
Plate Voltage	250 Volts
Screen Voltage	110 Volts
Cathode-Bias Resistor	68 Ohms
Plate Resistance, approximate	0.25 Megohms
Transconductance	5200 Micromhos
Plate Current	10 Milliamperes
Screen Current	3.5 Milliamperes
Grid-Number 1 Voltage, approximate Ib = 10 Microamperes	−10 Volts
Average Diode Current, Each Diode With 5 Volts DC Applied	20 Milliamperes

SCREEN RATING CHART



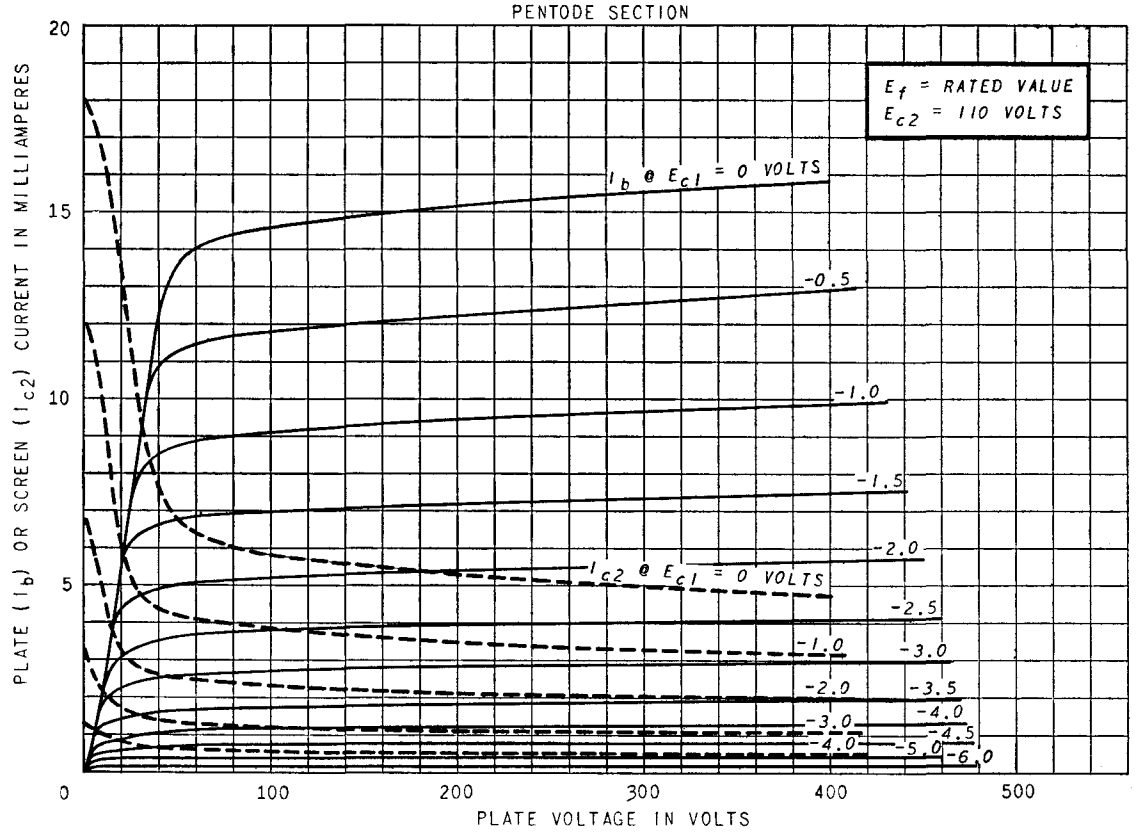
AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION



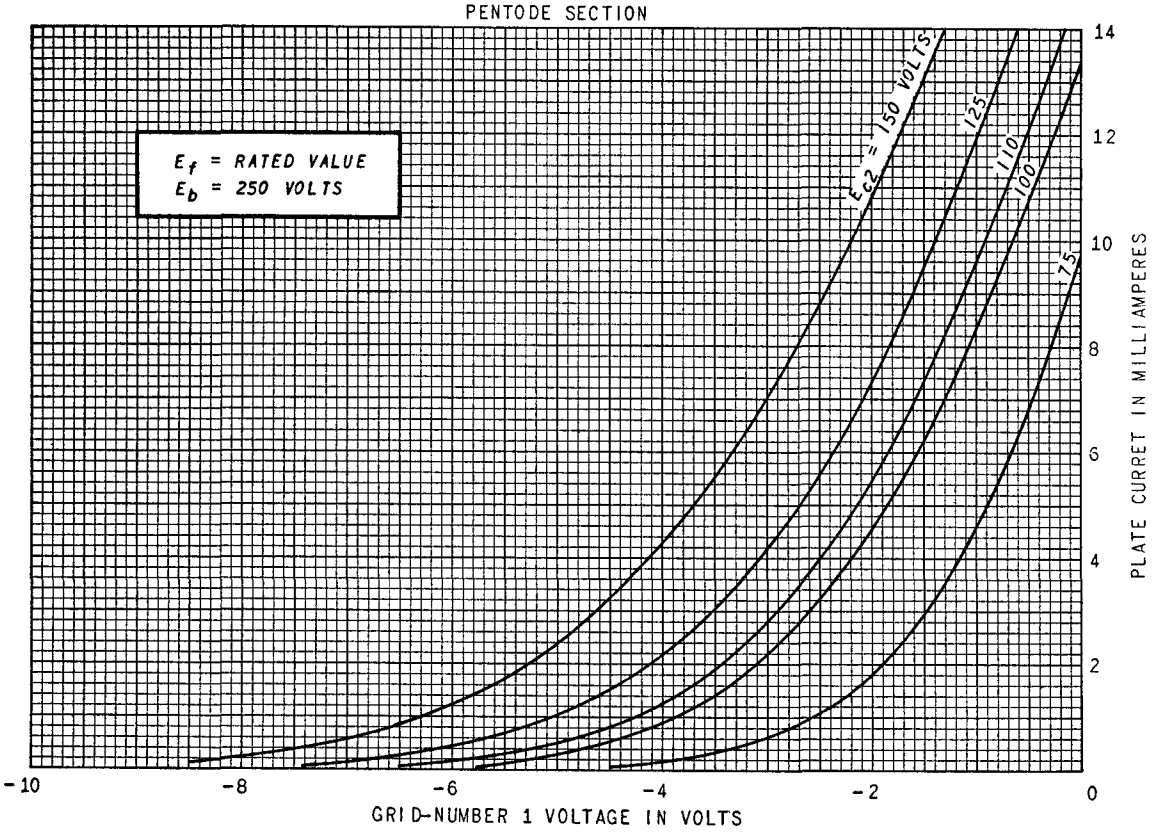
AVERAGE PLATE CHARACTERISTICS

PENTODE SECTION



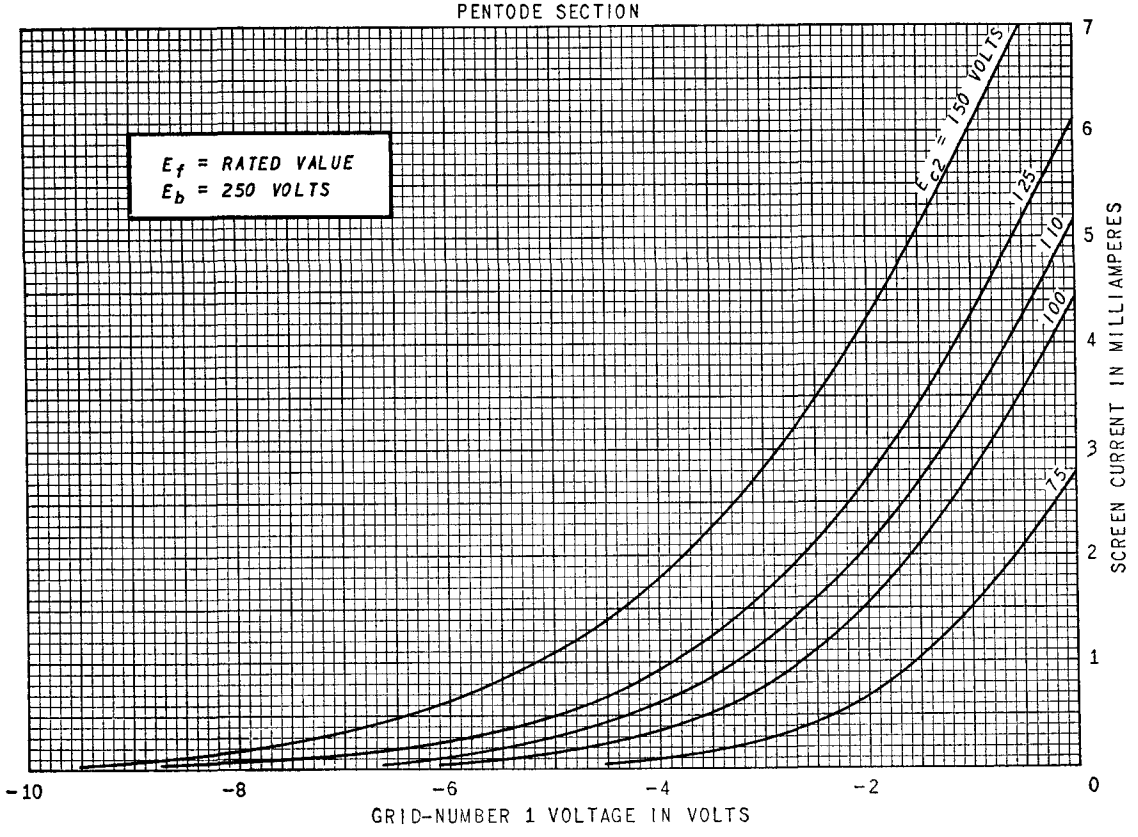
AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



AVERAGE TRANSFER CHARACTERISTICS

PENTODE SECTION



AVERAGE TRANSFER CHARACTERISTICS

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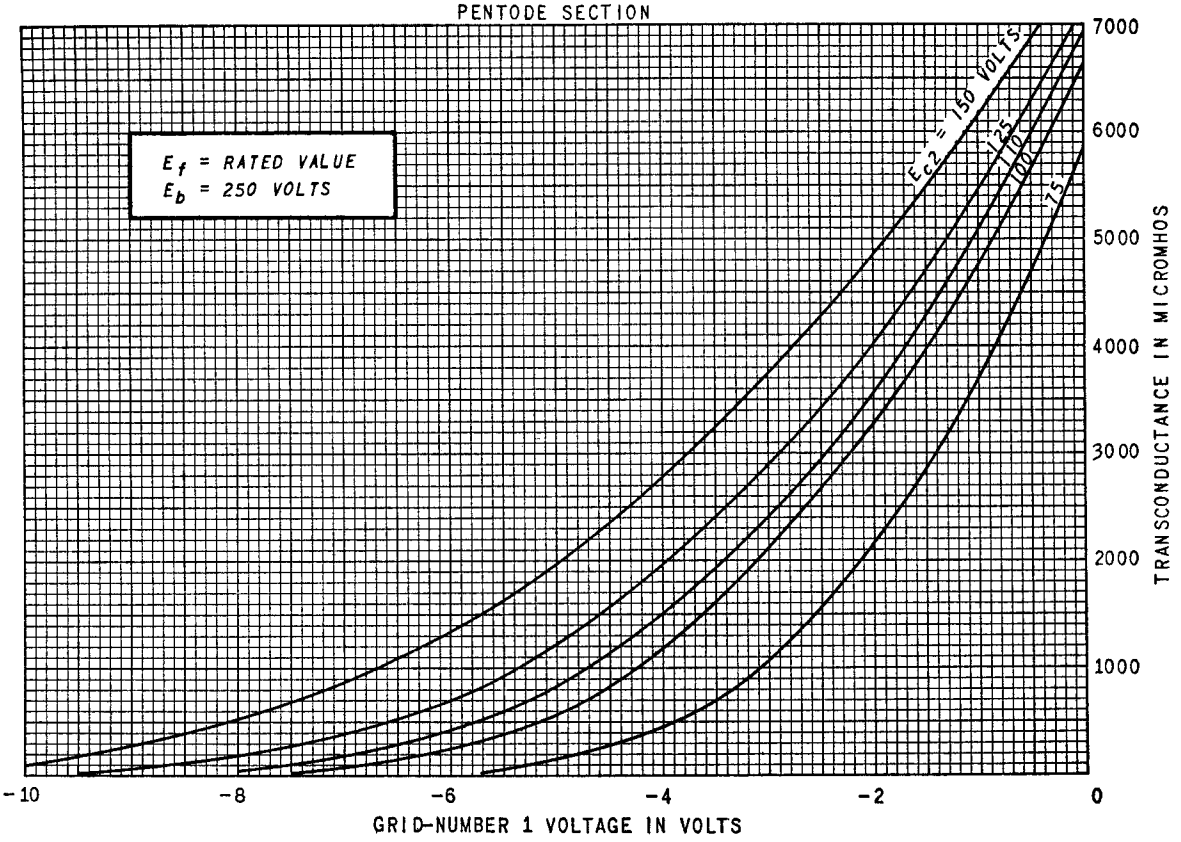
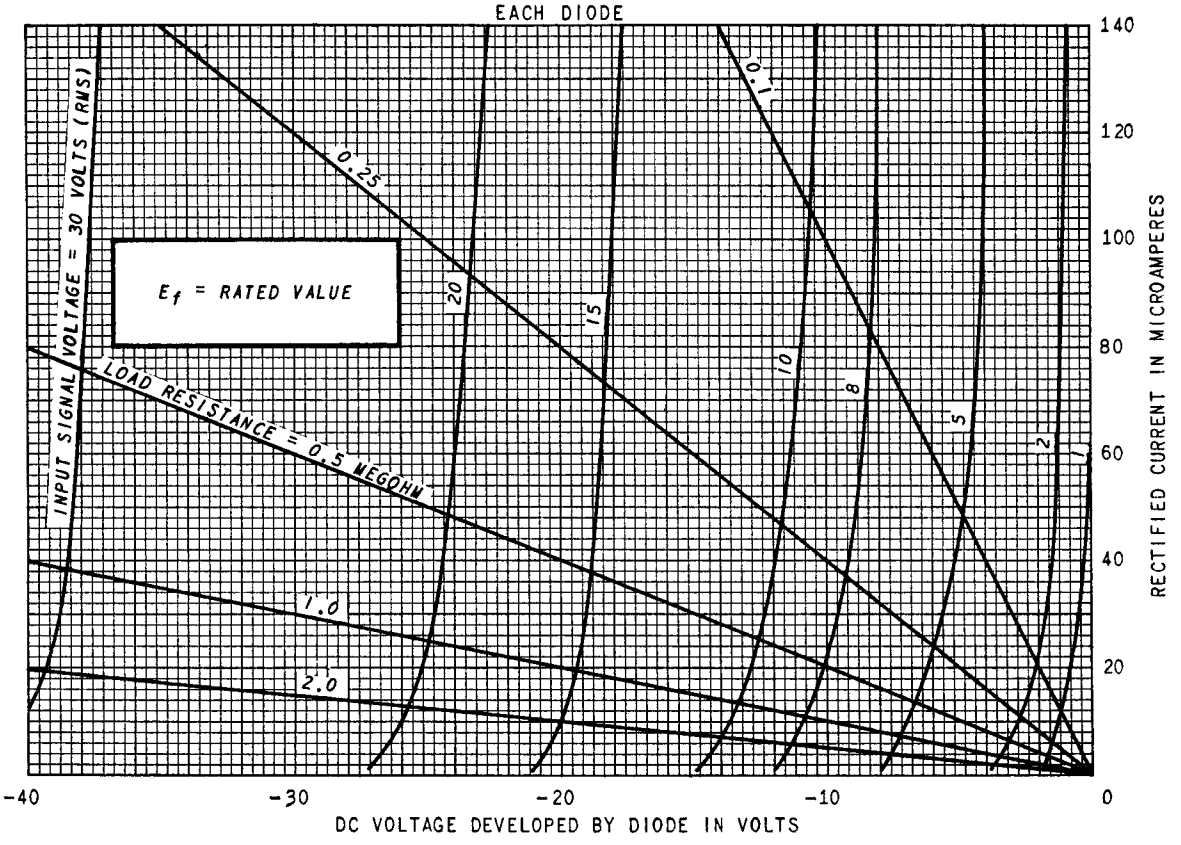


OPERATION CHARACTERISTICS

EACH DIODE