Electronic TUBES

6FM8

DUPLEX-DIODE TRIODE

FOR DETECTOR AND AF VOLTAGE-AMPLIFIER APPLICATIONS

DESCRIPTION AND RATING

The 6FM8 is a duplex-diode, high-mu triode with separate cathodes for each of the diode sections and the triode section. The tube is designed primarily for use as an FM detector and AF voltage amplifier.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC	6.3	Volts
Heater Current	0.45	Amperes
Direct Interelectrode Capacitances*		
Triode Grid to Plate	1.8	μμf
Triode Input	1.5	μμf
Triode Output	0.16	μμf
Grid to Diode-Number 1 Plate	0.05	μμf
Grid to Diode-Number 2 Plate	0.04	μμf
Diode-Number 1 Input	2.4	μμf
Diode-Number 2 Input	2.2	μμf
Diode-Number 1 Cathode to All	4.6	μμf
Diode-Number 2 Cathode to All	4.8	μμf

MECHANICAL

Mounting Position—Any
Envelope—T-6½, Glass
Base—E9-1, Small Button 9-Pin

MAXIMUM RATINGS

DESIGN-MAXIMUM VALUES

Allowable Heater Voltage	5.7 to 6.9	Volts
Plate Voltage	330	Volts
Positive DC Grid Voltage	0	Volts
Plate Dissipation	1.1	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
Diode Current for Continuous Operation, Each Diode	5.0	Milliamperes

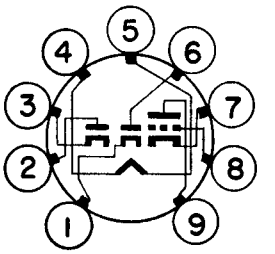
Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data, and should not be exceeded under the worst probable conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube, taking responsibility for the effects of changes in operating conditions due to variations in tube characteristics.

The equipment manufacturer should design so that initially and throughout life no design-maximum value for the intended service is exceeded with a bogey tube under the worst probable operating conditions with respect to supply voltage variation, equipment, component variation, equipment control adjustment, load variation, signal variation, and environmental conditions.

GENERAL ELECTRIC

BASING DIAGRAM

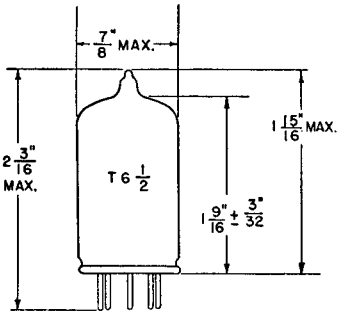


EIA 9KR

TERMINAL CONNECTIONS

Pin 1—Diode Number 2 Cathode
Pin 2—Diode Number 1 Plate
Pin 3—Diode Number 1 Cathode
Pin 4—Heater
Pin 5—Heater
Pin 6—Diode Number 2 Plate
Pin 7—Triode Cathode
Pin 8—Triode Grid
Pin 9—Triode Plate

PHYSICAL DIMENSIONS



EIA 6-2

CHARACTERISTICS AND TYPICAL OPERATION

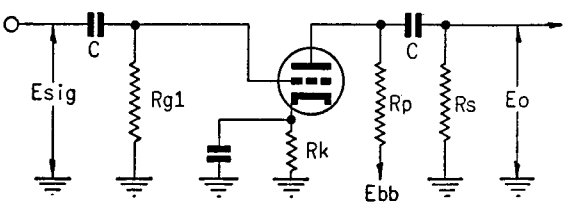
CLASS A_1 AMPLIFIER

Plate Voltage	250	Volts
Grid Voltage	−3.0	Volts
Amplification Factor	70	
Plate Resistance, approximate	58000	Ohms
Transconductance	1200	Micromhos
Plate Current	1.0	Milliamperes
Average Diode Current, Each Diode With 5.0 Volts DC Applied	20	Milliamperes

*Without external shield.

CLASS A RESISTANCE-COUPLED AMPLIFIER

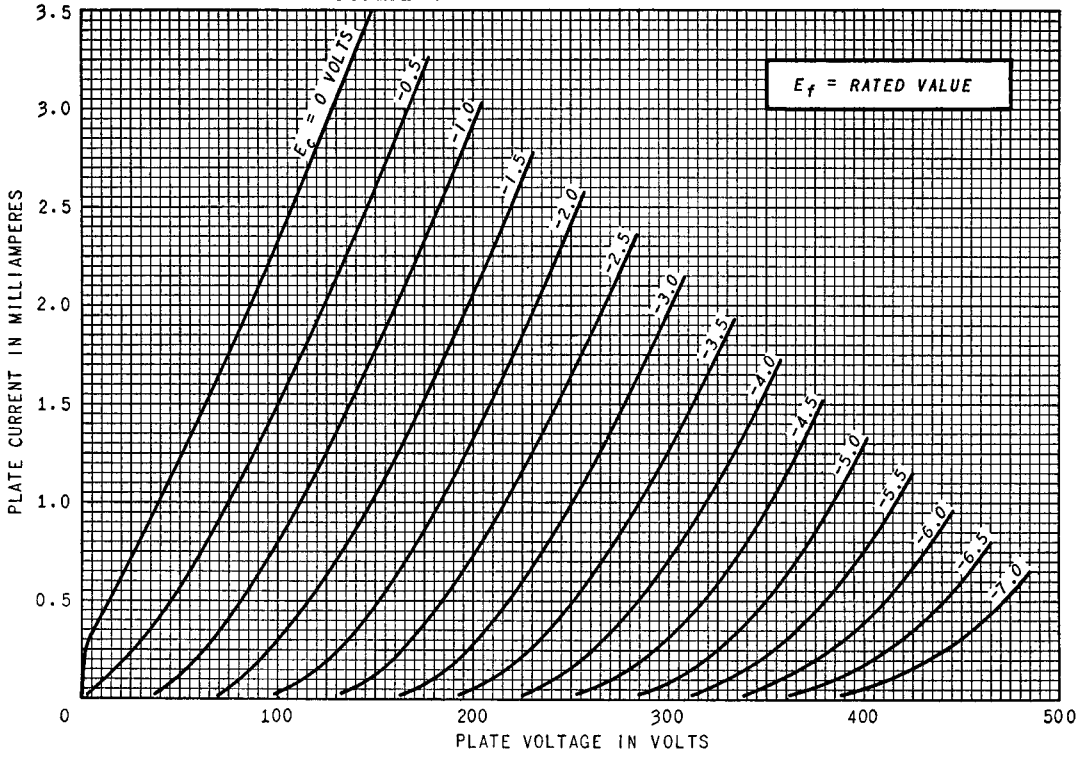
Rp Meg.	Rs Meg.	Rg1 Meg.	Ebb = 90 Volts Rk	Gain	Eo	Ebb = 180 Volts Rk	Gain	Eo	Ebb = 300 Volts Rk	Gain	Eo
0.10	0.10	0.10	5700	21	7.0	2400	29	18	1800	33	35
0.10	0.24	0.10	6100	26	9.0	2700	34	23	2000	38	42
0.24	0.24	0.10	9100	30	10	4300	40	24	3000	44	43
0.24	0.51	0.10	10000	34	13	4700	45	31	3300	49	52
0.51	0.51	0.10	15000	37	14	7500	47	28	5600	51	50
0.51	1.0	0.10	16000	40	16	8200	50	35	6200	55	60
0.24	0.24	10	0	31	5.0	0	44	19	0	48	40
0.24	0.51	10	0	37	7.0	0	49	25	0	52	52
0.51	0.51	10	0	39	7.5	0	51	22	0	54	44
0.51	1.0	10	0	42	10	0	54	28	0	58	56



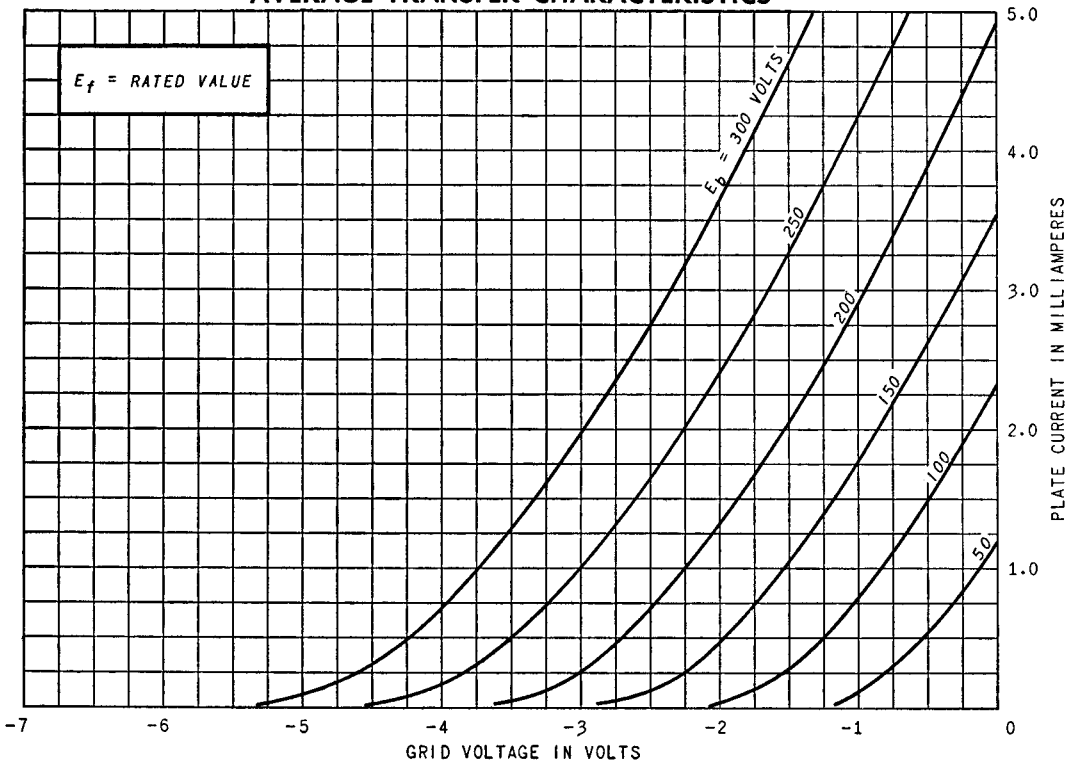
Note: Coupling capacitors (C) should be selected to give desired frequency response. Rk should be adequately by-passed.

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.

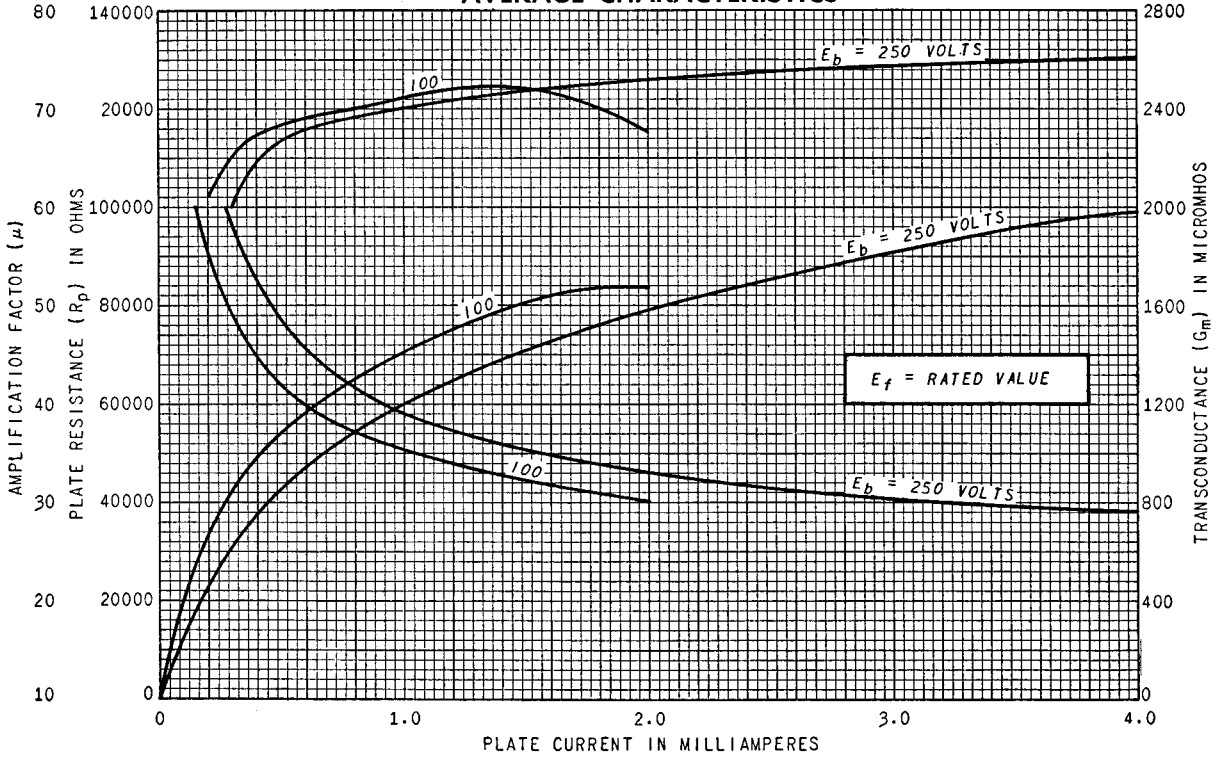
AVERAGE PLATE CHARACTERISTICS



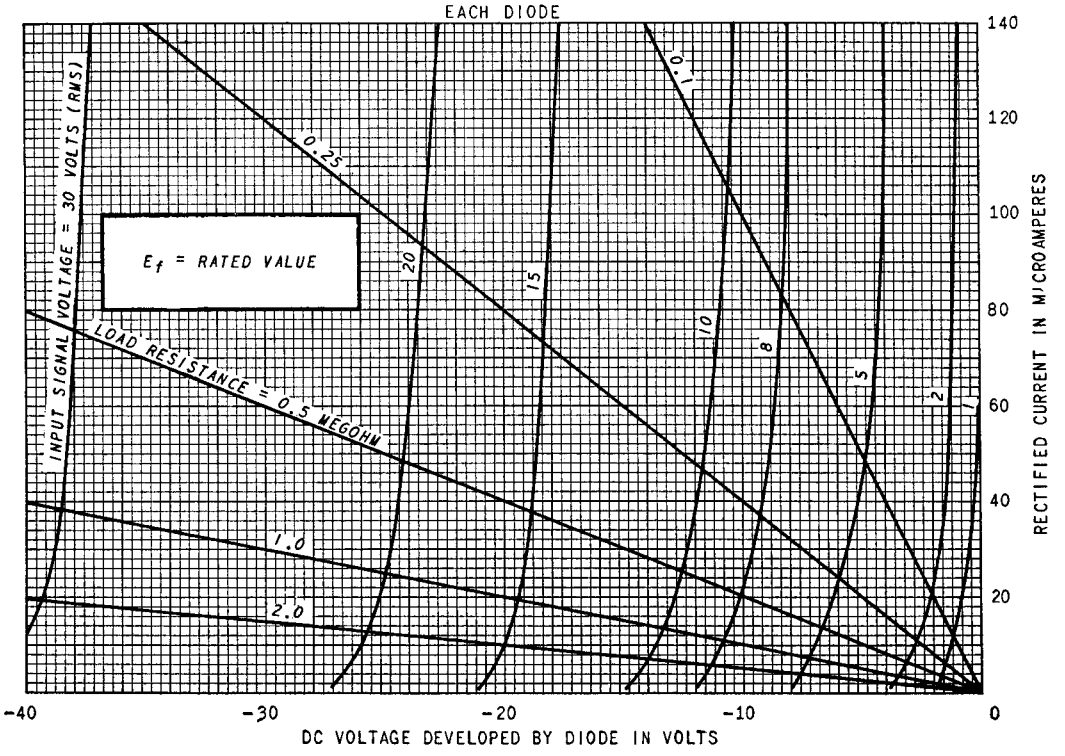
AVERAGE TRANSFER CHARACTERISTICS



AVERAGE CHARACTERISTICS



OPERATION CHARACTERISTICS



ELECTRONIC COMPONENTS DIVISION

GENERAL ELECTRIC

Schenectady 5, N. Y.

PRINTED IN U.S.A.