Electronic TUBES

6AT6—12AT6

DUPLEX-DIODE TRIODE

DESCRIPTION AND RATING

The 6AT6 is a miniature, duplex-diode, high-mu triode designed for use as a combined detector, amplifier, and automatic-volume-control tube.

Except for heater ratings, the 12AT6 is identical to the 6AT6.

GENERAL

ELECTRICAL

	6AT6	12AT6	
Cathode—Coated Unipotential			
Heater Voltage, AC or DC	6.3	12.6	Volts
Heater Current	0.3	0.15	Ampere
Direct Interelectrode Capacitances	With Shield*	Without Shield	
Triode Grid to Plate	2.0	2.0	μμf
Triode Input	2.2	2.2	μμf
Triode Output	1.2	0.8	μμf
Grid to Diode-Number 2 Plate, maximum	0.04	0.04	μμf

MECHANICAL

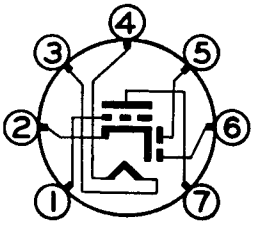
Mounting Position—Any
Envelope—T-5½, Glass
Base—E7-1, Miniature Button 7-Pin

MAXIMUM RATINGS

DESIGN-CENTER VALUES

Plate Voltage	300	Volts
Positive DC Grid Voltage	0	Volts
Plate Dissipation	0.5	Watts
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode	90	Volts
Heater Negative with Respect to Cathode	90	Volts
Diode Current for Continuous Operation, Each Diode	1.0	Milliamperes

BASING DIAGRAM

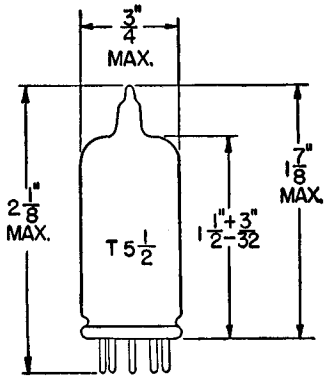


RETMA 7BT

TERMINAL CONNECTIONS

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

PHYSICAL DIMENSIONS



RETMA 5-2

GENERAL ELECTRIC

Supersedes ET-T275B, dated 11-50

CHARACTERISTICS AND TYPICAL OPERATION

CLASS A_1 AMPLIFIER

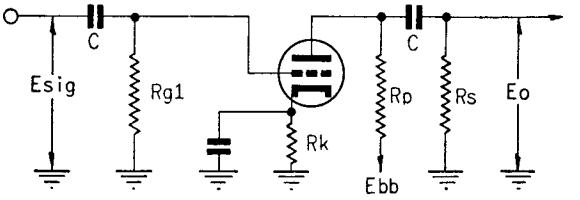
Plate Voltage	100	250	Volts
Grid Voltage	−1.0	−3.0	Volts
Amplification Factor	70	70	
Plate Resistance, approximate	54000	58000	Ohms
Transconductance	1300	1200	Micromhos
Plate Current	0.8	1.0	Milliamperes
Average Diode Current, Each Diode With 10 Volts DC Applied	—	2.0	Milliamperes

* With external shield (RETMA 316) connected to pin 2.

CLASS A RESISTANCE-COUPLED AMPLIFIER

TRIODE SECTION

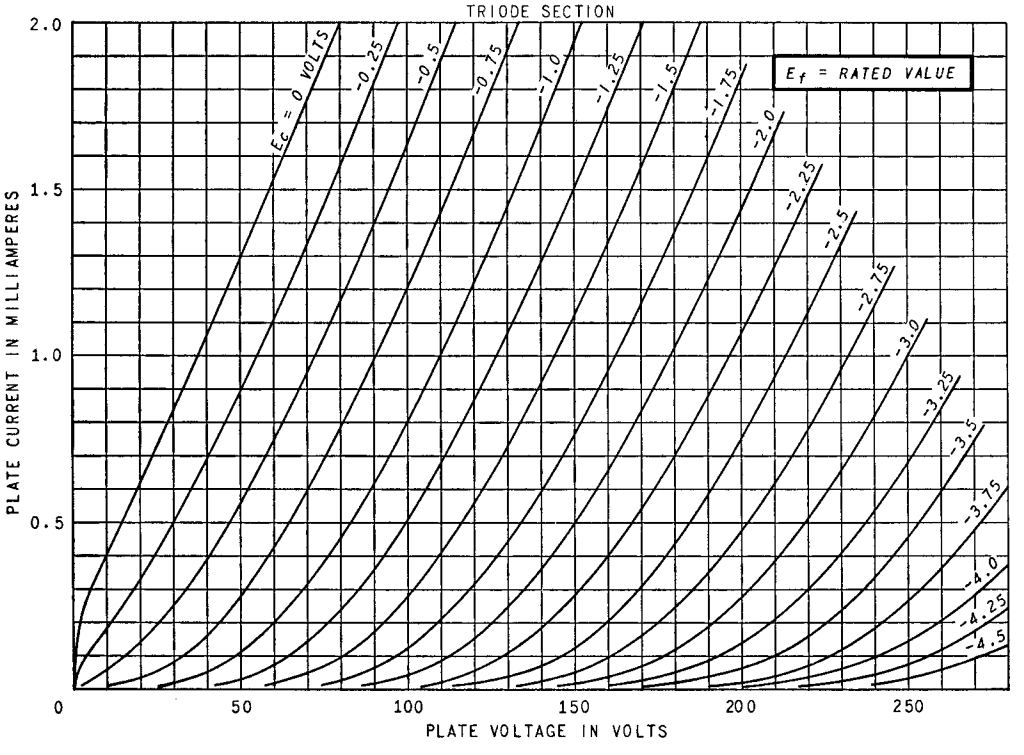
Rp Meg.	Rs Meg.	Rg1 Meg.	Ebb = 90 Volts Rk	Gain	Eo	Ebb = 180 Volts Rk	Gain	Eo	Ebb = 300 Volts Rk	Gain	Eo
0.10	0.10	0.10	5700	21	7.0	2400	29	18	1800	33	35
0.10	0.24	0.10	6100	26	9.0	2700	34	23	2000	38	42
0.24	0.24	0.10	9100	30	10	4300	40	24	3000	44	43
0.24	0.51	0.10	10000	34	13	4700	45	31	3300	49	52
0.51	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	49	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.

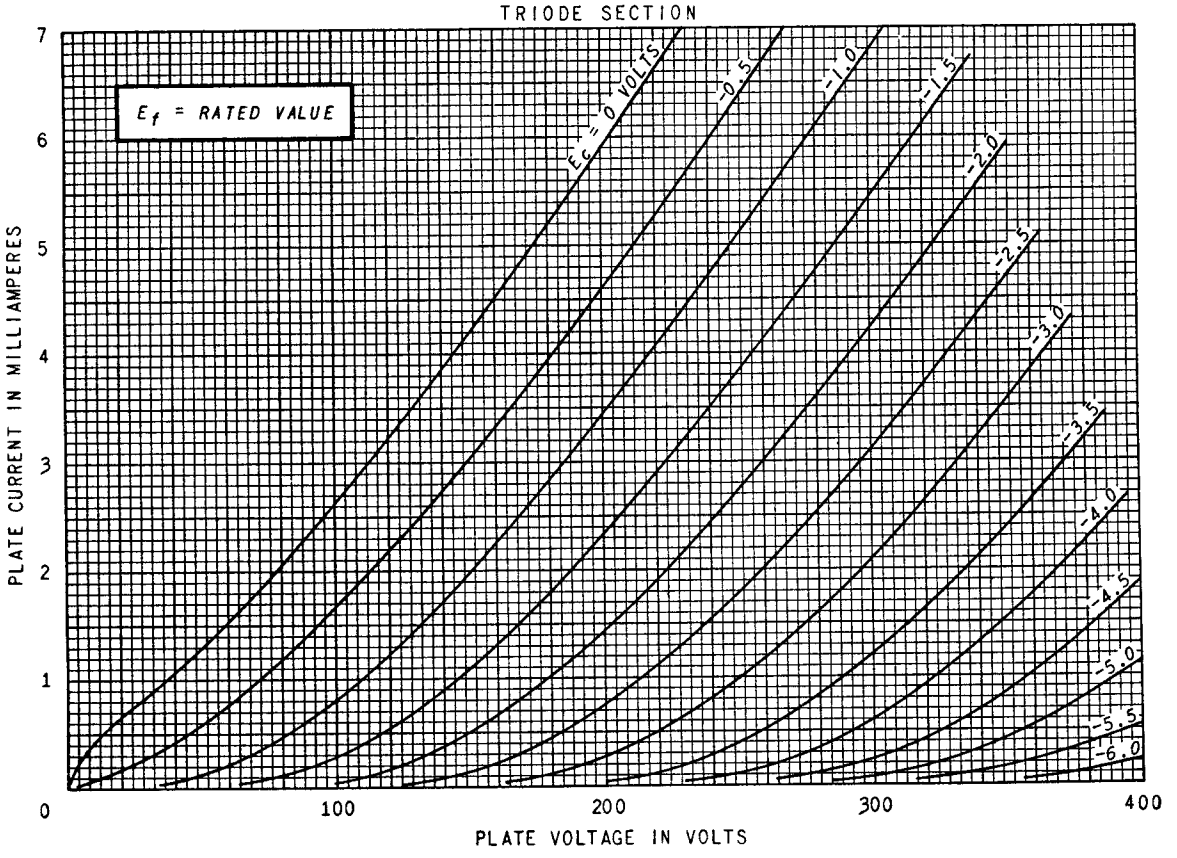
Notes: 1. Eo is maximum RMS voltage output for five percent (5%) total harmonic distortion. 2. Gain measured at 2.0 volts RMS output. 3. For zero-bias data, generator impedance is negligible.

AVERAGE PLATE CHARACTERISTICS



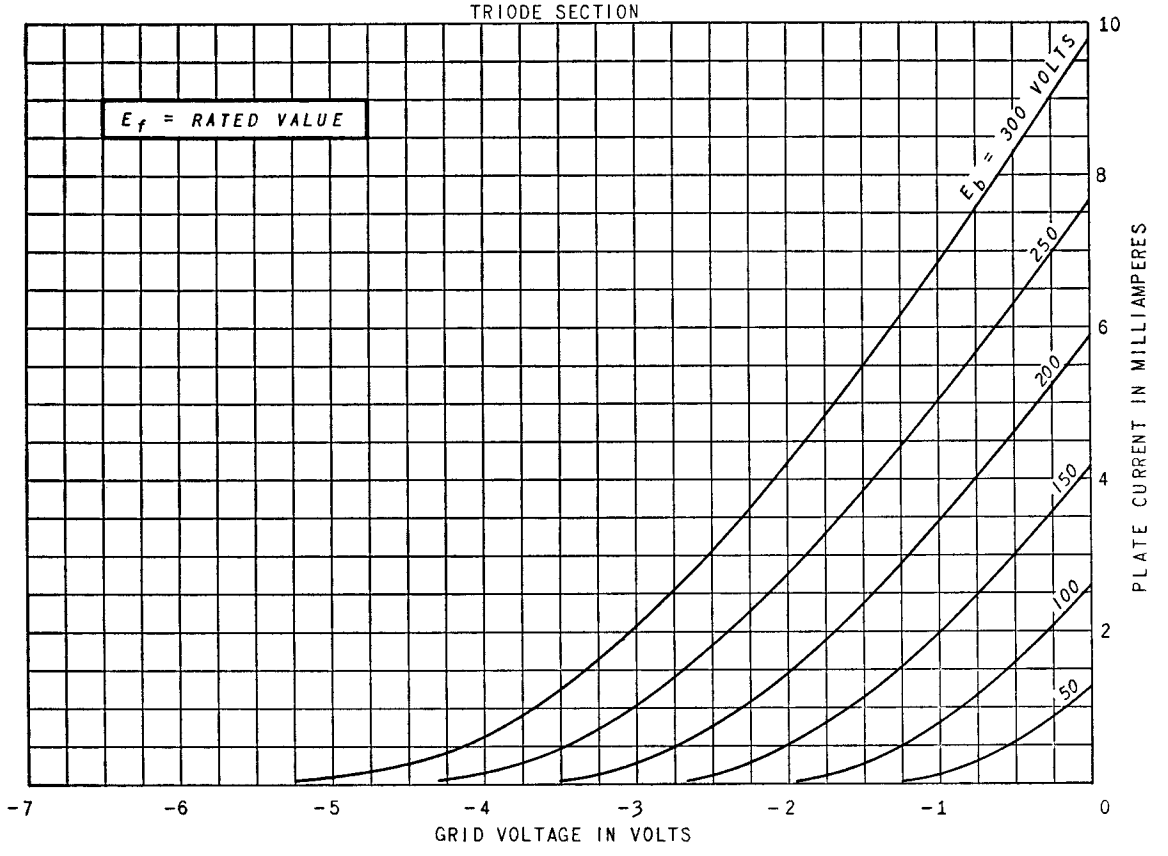
AVERAGE PLATE CHARACTERISTICS

TRIODE SECTION



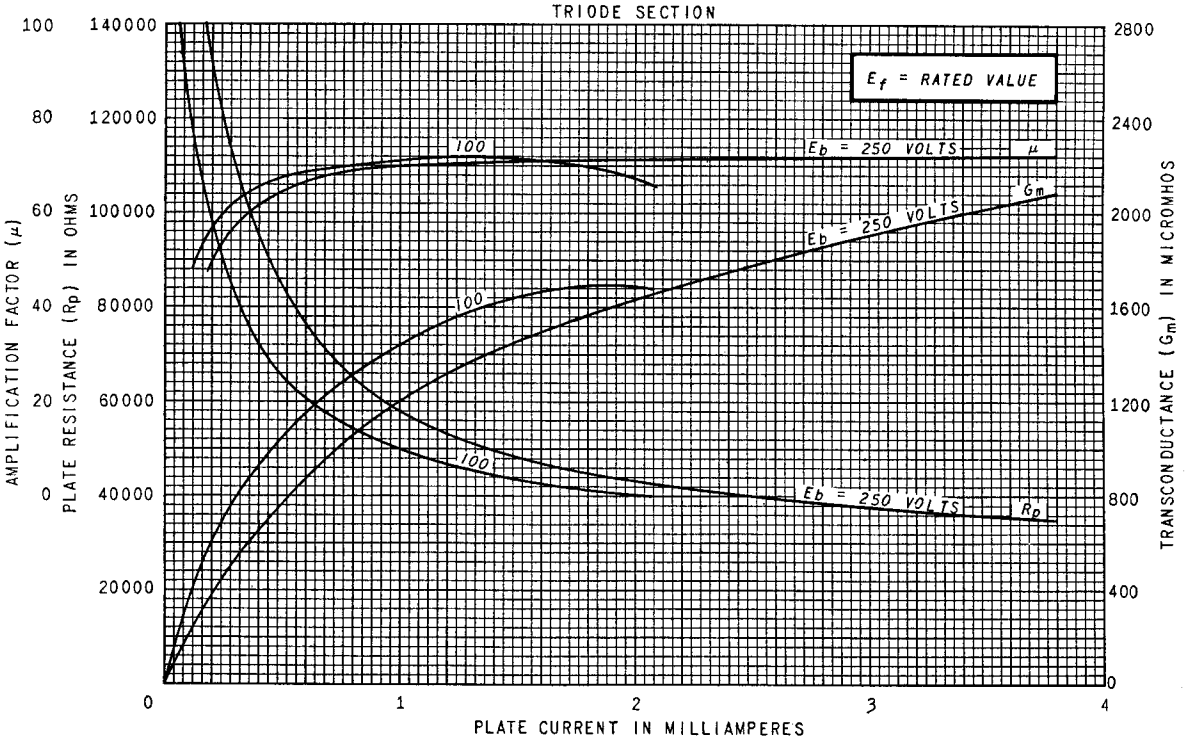
AVERAGE TRANSFER CHARACTERISTICS

TRIODE SECTION



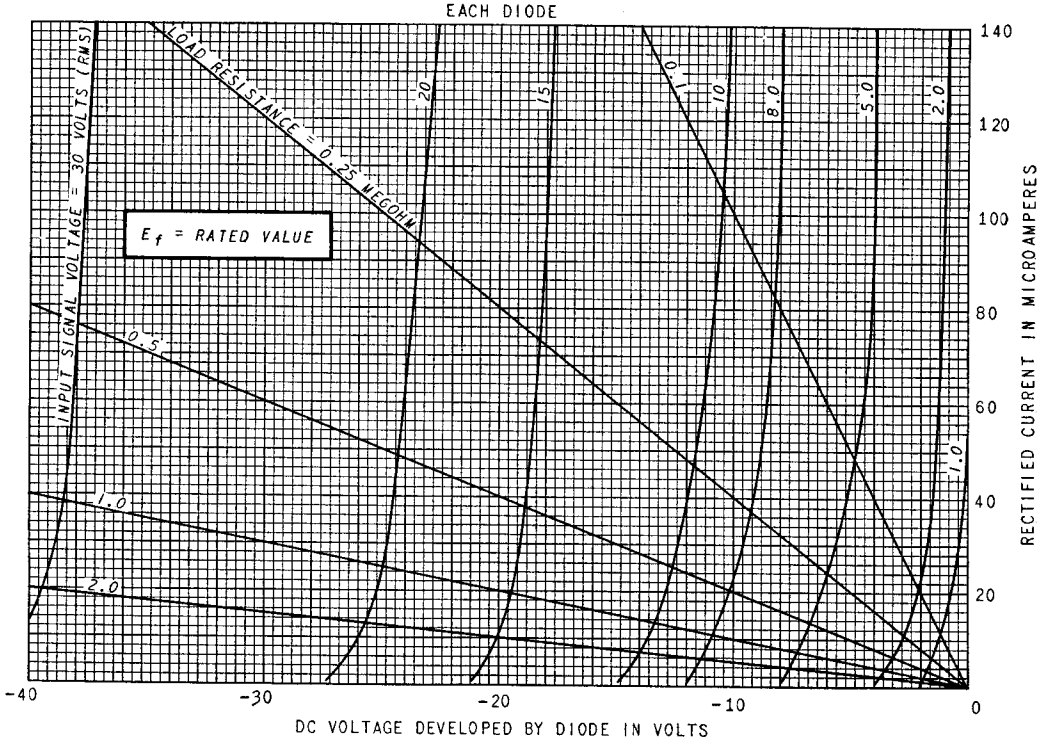
AVERAGE CHARACTERISTICS

TRIODE SECTION



OPERATION CHARACTERISTICS

EACH DIODE



ELECTRONIC COMPONENTS DIVISION

GENERAL ELECTRIC

Schenectady 5, N. Y.