

1U4

PENTODE

DESCRIPTION AND RATING

The 1U4 is a miniature, filamentary, sharp-cutoff pentode intended for radio-frequency or intermediate-frequency amplifier use in battery-operated receivers.

GENERAL

ELECTRICAL

Cathode—Coated Filament			
Filament Voltage, DC	1.4	Volts	
Filament Current	0.05	Amperes	
Direct Interelectrode Capacitances	With Shield*	Without Shield	
Grid-Number 1 to Plate, maximum	0.01	0.01	$\mu\mu\text{f}$
Input	3.6	3.6	$\mu\mu\text{f}$
Output	7.5	7.5	$\mu\mu\text{f}$

MECHANICAL

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

MAXIMUM RATINGS

DESIGN-CENTER VALUES

Plate Voltage	110	Volts
Screen Voltage	110	Volts
Positive DC Grid-Number 1 Voltage	0	Volts
DC Cathode Current	6.0	Milliamperes

CHARACTERISTICS AND TYPICAL OPERATION

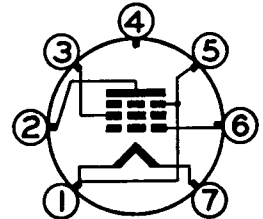
CLASS A₁ AMPLIFIER

Plate Voltage	90	Volts
Screen Voltage	90	Volts
Grid-Number 1 Voltage	0	Volts
Plate Resistance, approximate	1.0	Megohms
Transconductance	900	Micromhos
Plate Current	1.6	Milliamperes
Screen Current	0.5	Milliamperes
Grid-Number 1 Voltage, approximate I _b = 10 Microamperes	—4	Volts

* With external shield (RETMA 316) connected to pin 1.

Note: All voltages are referred to the negative terminal of the filament.

BASING DIAGRAM

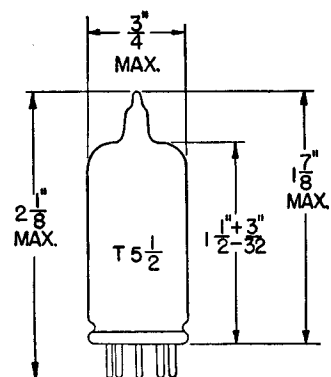


RETMA 6AR

TERMINAL CONNECTIONS

Pin 1—Negative Filament, Internal Shield, and Grid Number 3 (Suppressor)
Pin 2—Plate
Pin 3—Grid Number 2 (Screen)
Pin 4—No Connection
Pin 5—Negative Filament, Internal Shield, and Grid Number 3 (Suppressor)
Pin 6—Grid Number 1
Pin 7—Positive Filament

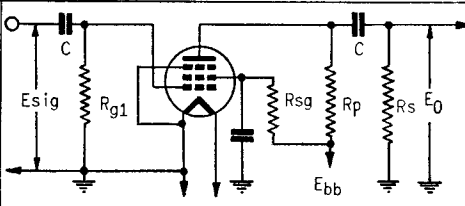
PHYSICAL DIMENSIONS



RETMA 5-2

CLASS A RESISTANCE-COUPLED AMPLIFIER

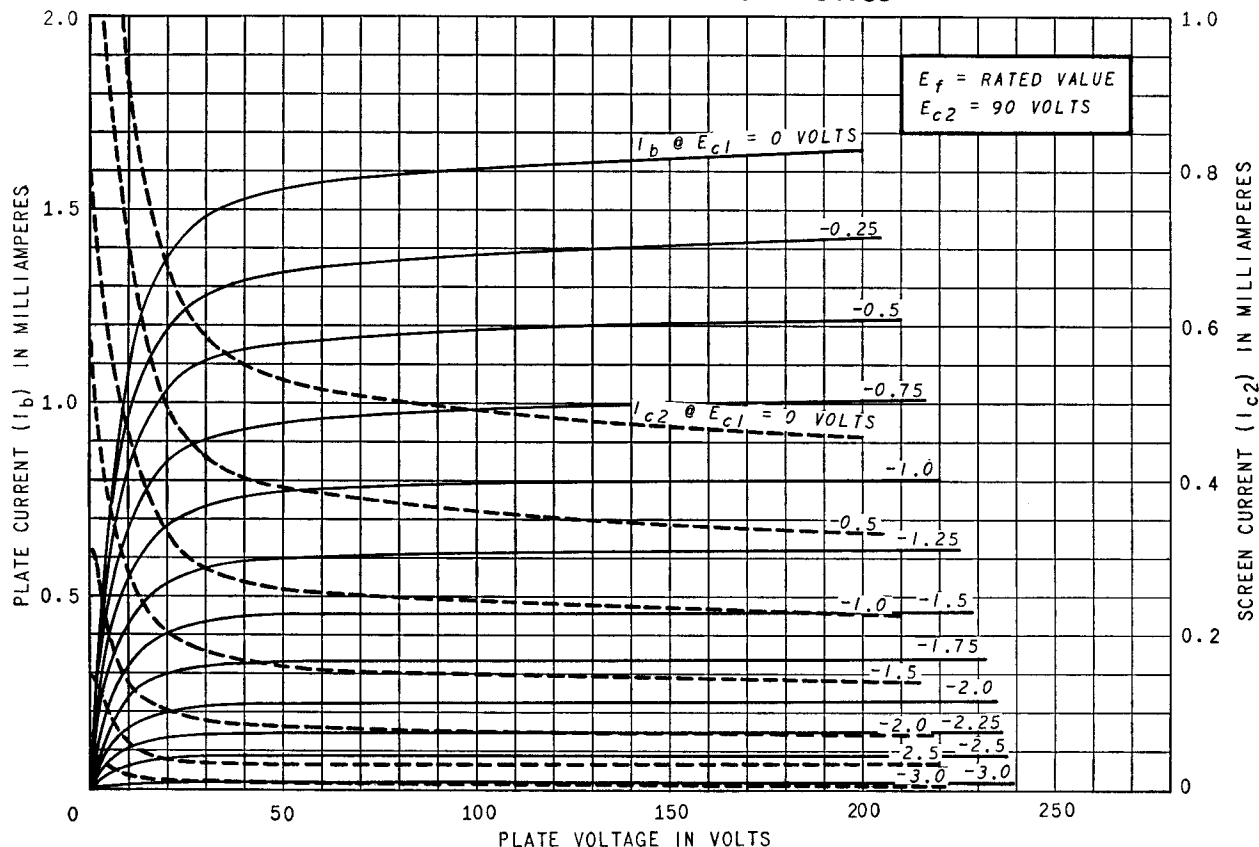
Rp Meg.	Rs Meg.	Rq1 Meg.	Ebb = 45 Volts					Ebb = 90 Volts					Ebb = 135 Volts				
			Rk	Rsg	Gain	Eo		Rk	Rsg	Gain	Eo		Rk	Rsg	Gain	Eo	
0.24	0.24	10	—	0	26	8.1	—	0.26	43	18	—	0.37	57	28			
0.24	0.51	10	—	0.02	34	9.6	—	0.30	55	20	—	0.41	67	32			
0.24	1.0	10	—	0.03	39	10	—	0.33	62	22	—	0.45	75	34			
0.51	0.51	10	—	0.42	42	7.1	—	0.93	61	15	—	1.2	80	22			
0.51	0.75	10	—	0.47	48	7.9	—	1.0	76	17	—	1.3	102	26			
0.51	1.0	10	—	0.50	51	8.1	—	1.1	82	18	—	1.4	108	27			
0.75	0.75	10	—	0.83	47	6.3	—	1.6	75	14	—	2.0	101	22			
0.75	1.0	10	—	0.90	51	6.5	—	1.8	82	15	—	2.1	108	22			
1.0	1.0	10	—	1.4	48	5.0	—	2.6	79	12	—	3.1	106	17			



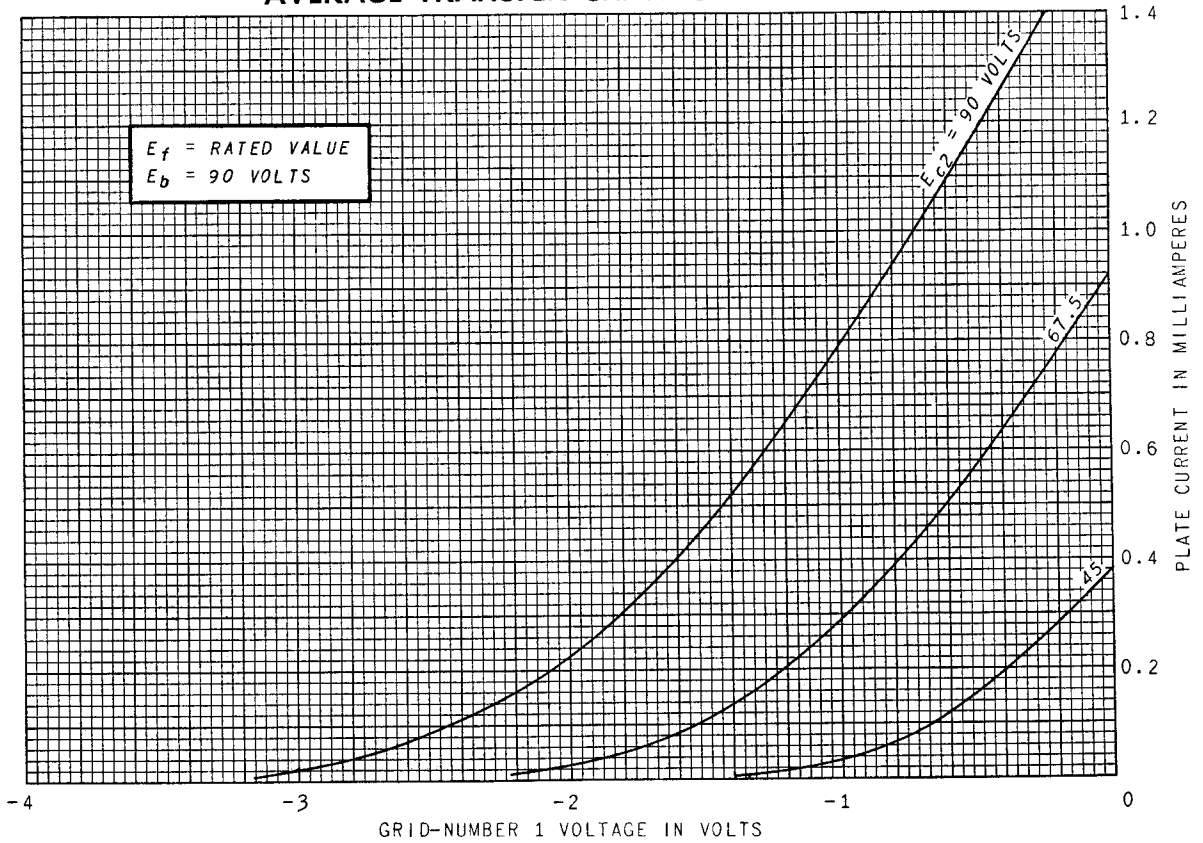
Note: Coupling capacitors (C) should be adjusted to give desired frequency response. Rsg should be adequately by-passed.

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.

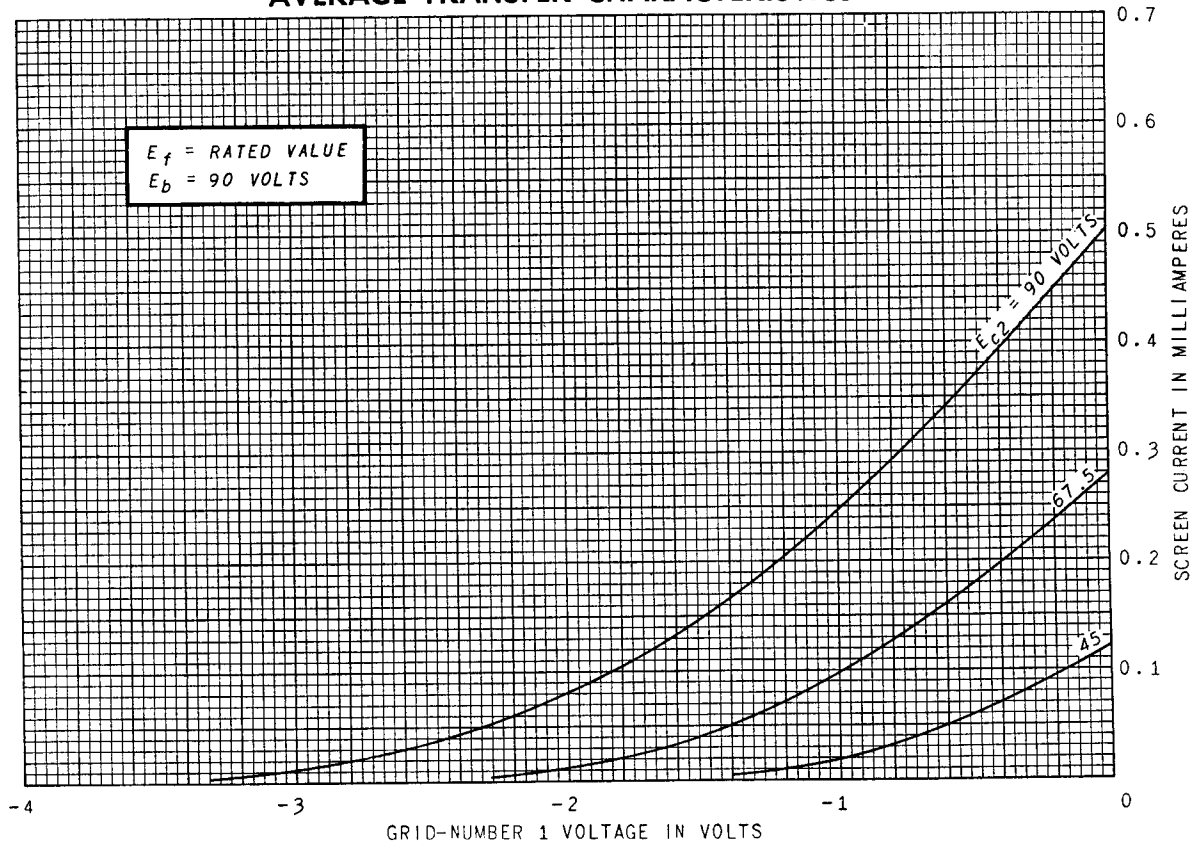
AVERAGE PLATE CHARACTERISTICS



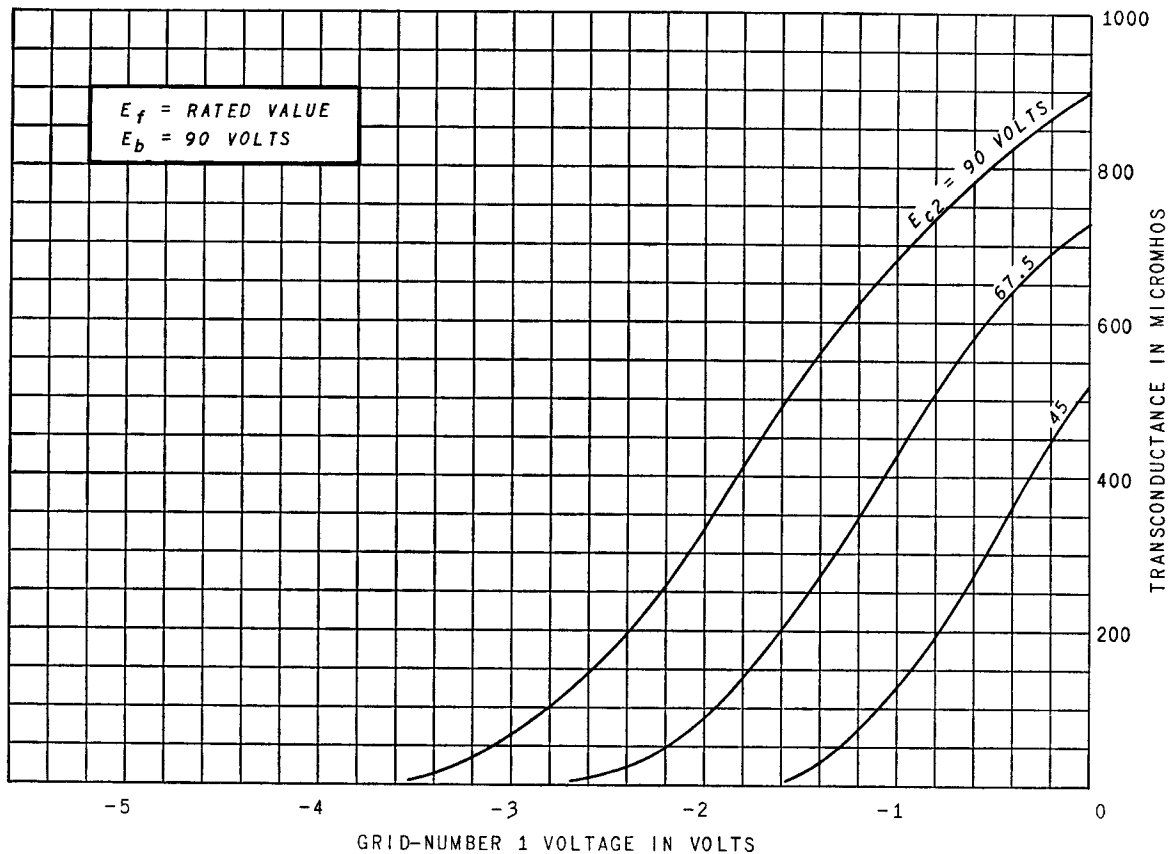
AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



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