

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

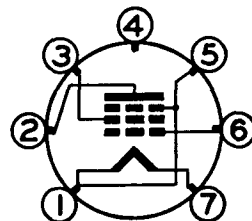
Grid-Number 1 Voltage, approximate

$I_b = 10$ 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)

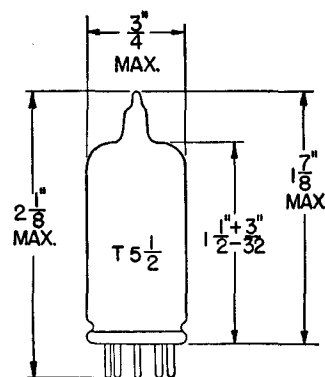
Pin 4—No Connection

Pin 5—Negative Filament, Internal Shield, and Grid Number 3 (Suppressor)

Pin 6—Grid Number 1

Pin 7—Positive Filament

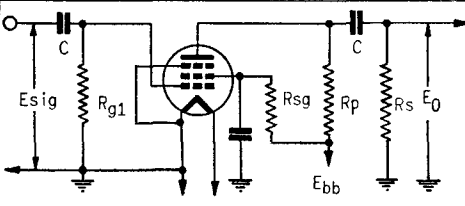
PHYSICAL DIMENSIONS



RETMA 5-2

CLASS A RESISTANCE-COUPLED AMPLIFIER

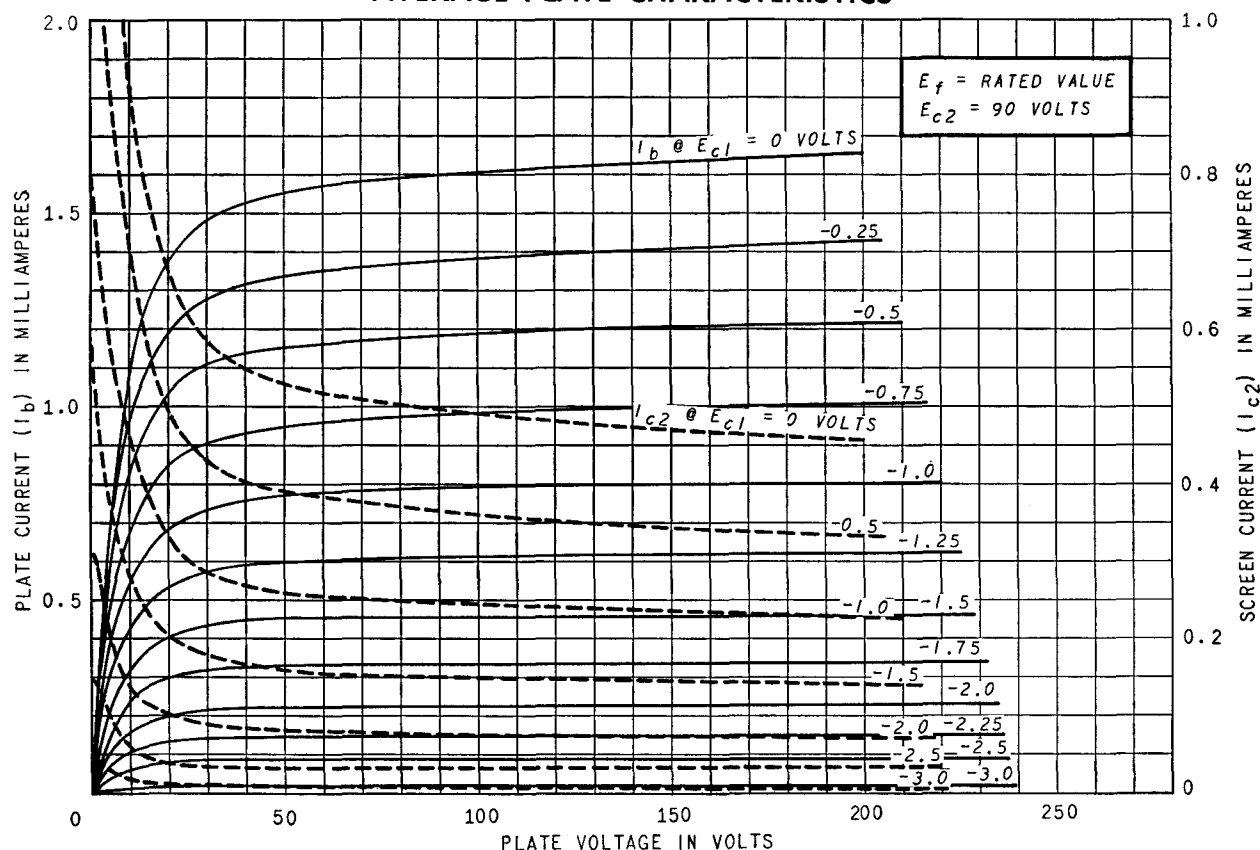
Rp Meg.	Rs Meg.	Rg1 Meg.	Ebb = 45 Volts				Ebb = 90 Volts				Ebb = 135 Volts			
			Rk	Rsg	Gain	Eo	Rk	Rsg	Gain	Eo	Rk	Rsg	Gain	Eo
0.24	0.24	10	—	0	26	8.1	—	0.26	43	18	—	0.37	57	28
0.24	0.51	10	—	0.02	34	9.6	—	0.30	55	20	—	0.41	67	32
0.24	1.0	10	—	0.03	39	10	—	0.33	62	22	—	0.45	75	34
0.51	0.51	10	—	0.42	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



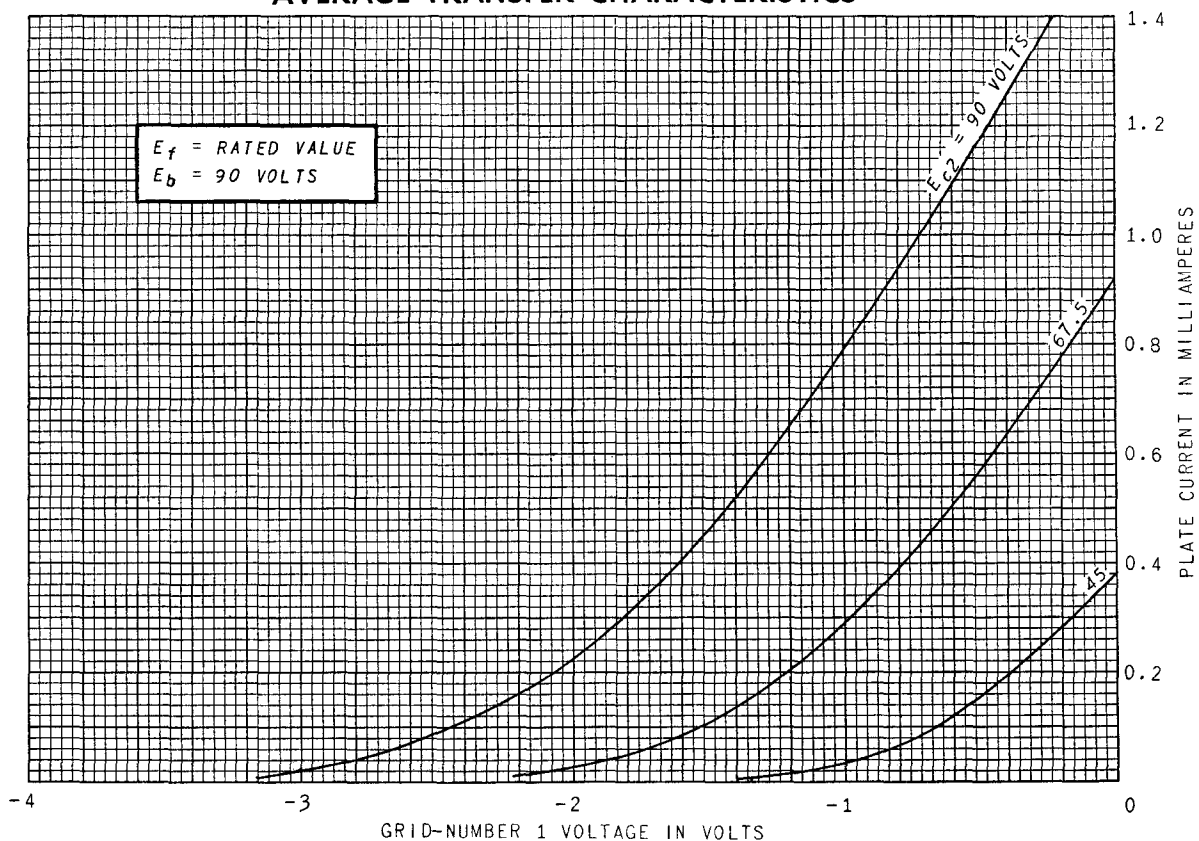
Note: Coupling capacitors (C) should be adjusted to give desired frequency response. Rsg should be adequately by-passed.

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.

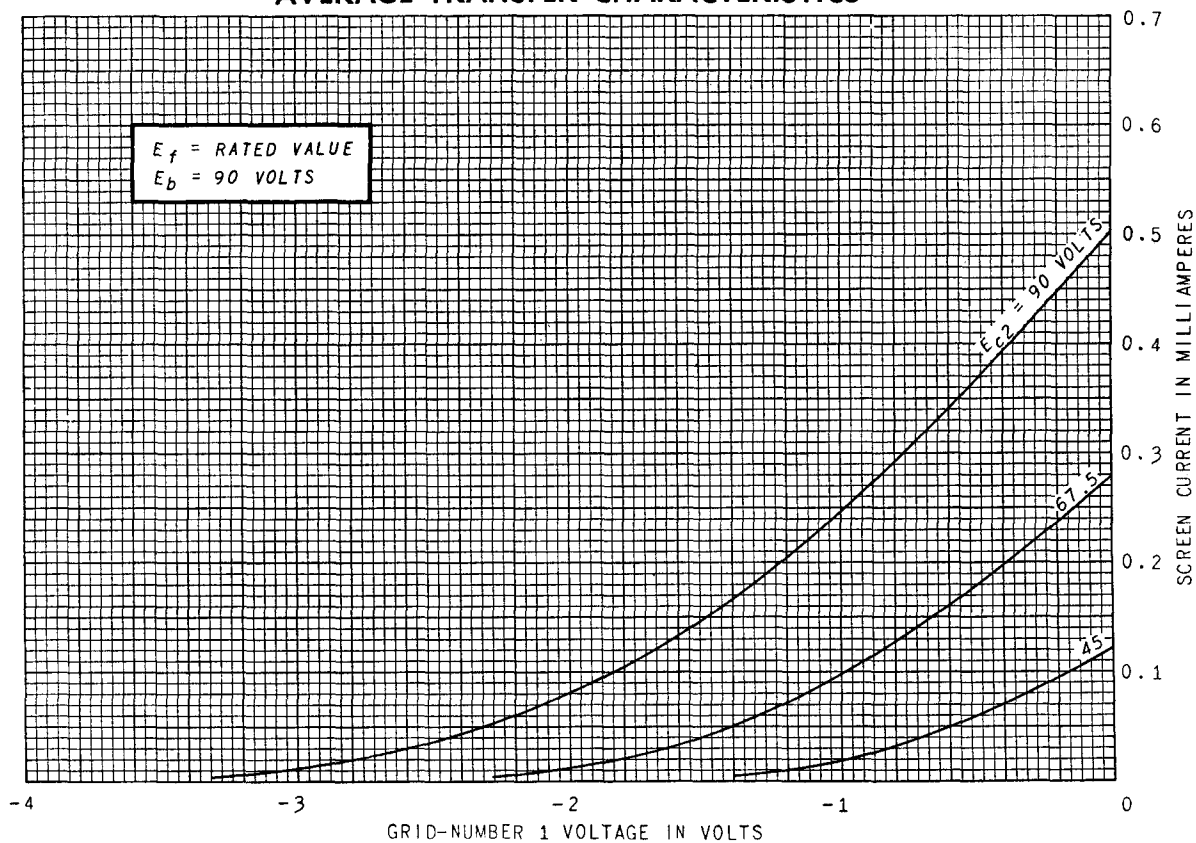
AVERAGE PLATE CHARACTERISTICS



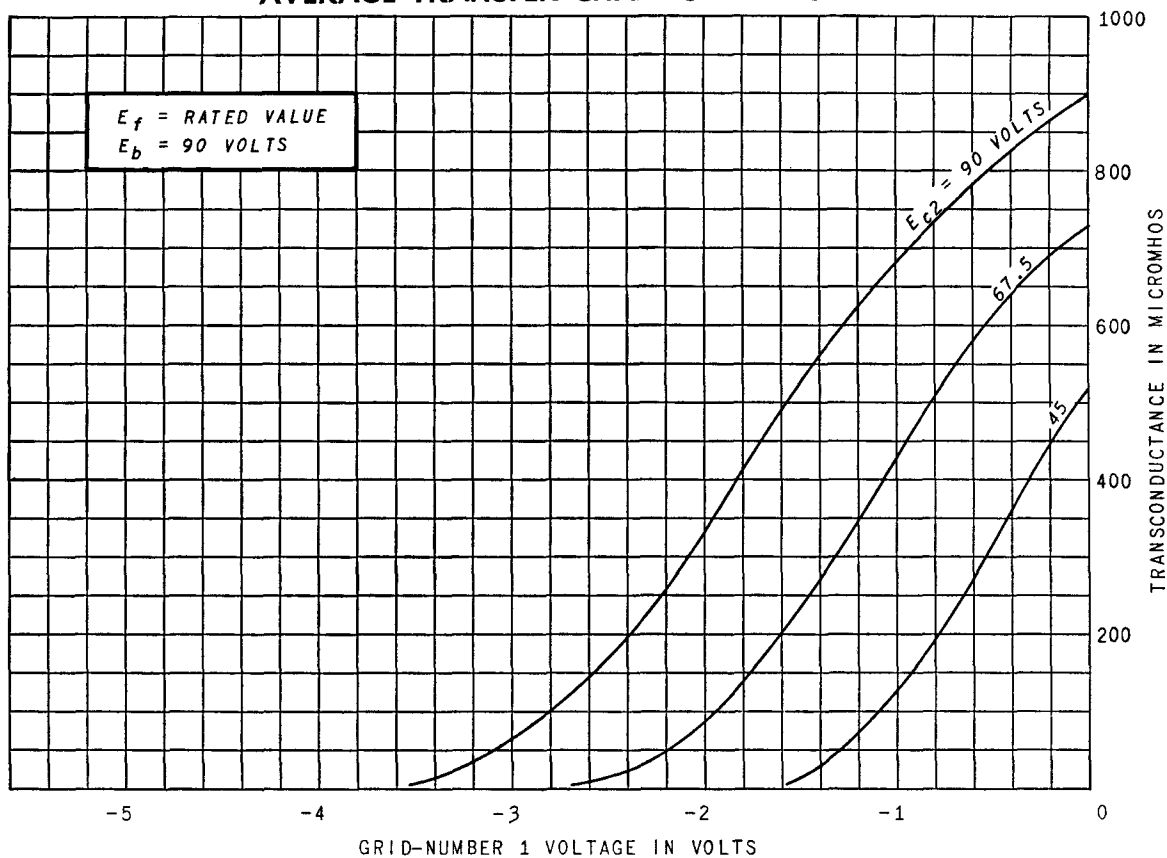
AVERAGE TRANSFER CHARACTERISTICS



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AVERAGE TRANSFER CHARACTERISTICS



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