



12R5 PENTODE

12R5
ET-T1485
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FOR TV VERTICAL-DEFLECTION AMPLIFIER APPLICATIONS

DESCRIPTION AND RATING

The 12R5 is a miniature beam pentode primarily designed for use as a pentode-connected vertical-deflection amplifier in television receivers. The tube features high zero-bias plate current at relatively low plate and screen voltages. In addition, a controlled heater warm-up characteristic makes it especially suited for use in television receivers with series-connected heaters.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC.....	12.6	Volts
Heater Current.....	0.6	Amperes
Heater Warm-up Time*.....	11	Seconds

Direct Interelectrode Capacitances†

Grid-Number 1 to Plate.....	0.55	$\mu\mu\text{f}$
Input.....	13	$\mu\mu\text{f}$
Output.....	9.0	$\mu\mu\text{f}$

MECHANICAL

Mounting Position—Any

Envelope—T-5½, Glass

Base—E7-1, Miniature Button 7-Pin

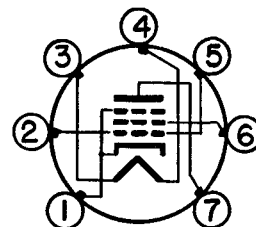
MAXIMUM RATINGS

VERTICAL-DEFLECTION AMPLIFIER SERVICE‡

DESIGN-CENTER VALUES UNLESS OTHERWISE INDICATED

DC Plate Voltage.....	150	Volts
Peak Pulse Plate Voltage.....	1500§	Volts
Screen Voltage.....	150	Volts
Peak Negative Grid-Number 1 Voltage.....	150	Volts
Plate Dissipation△.....	4.5	Watts
Screen Dissipation.....	1.0	Watts
DC Cathode Current.....	45	Milliamperes
Peak Cathode Current.....	155	Milliamperes
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.....	300	Volts
Grid-Number 1 Circuit Resistance		
With Cathode Bias.....	2.2	Megohms

BASING DIAGRAM



EIA 7CV

TERMINAL CONNECTIONS

Pin 1—Cathode and Beam Plates

Pin 2—Grid Number 1

Pin 3—Heater

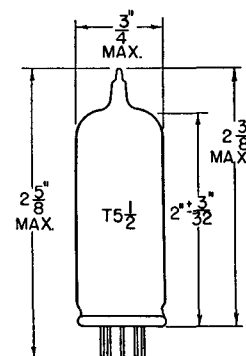
Pin 4—Heater

Pin 5—Grid Number 1

Pin 6—Grid Number 2 (Screen)

Pin 7—Plate

PHYSICAL DIMENSIONS



EIA 5-3

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Plate Voltage.....	45	110	Volts
Suppressor, Connected to Cathode at Socket			
Screen Voltage.....	110	110	Volts
Grid-Number 1 Voltage.....	0†	-8.5	Volts
Plate Resistance, approximate.....		13000	Ohms
Transconductance.....		7000	Micromhos
Plate Current.....	120	40	Milliamperes
Screen Current.....	17	3.3	Milliamperes
Grid-Number 1 Voltage, approximate			
I _b = 0.5 Milliamperes.....		-22	Volts

* The time required for the voltage across the heater to reach 80 percent of its rated value after applying 4 times rated heater voltage to a circuit consisting of the tube heater in series with a resistance equal to 3 times the rated heater voltage divided by the rated heater current.

† Without external shield.

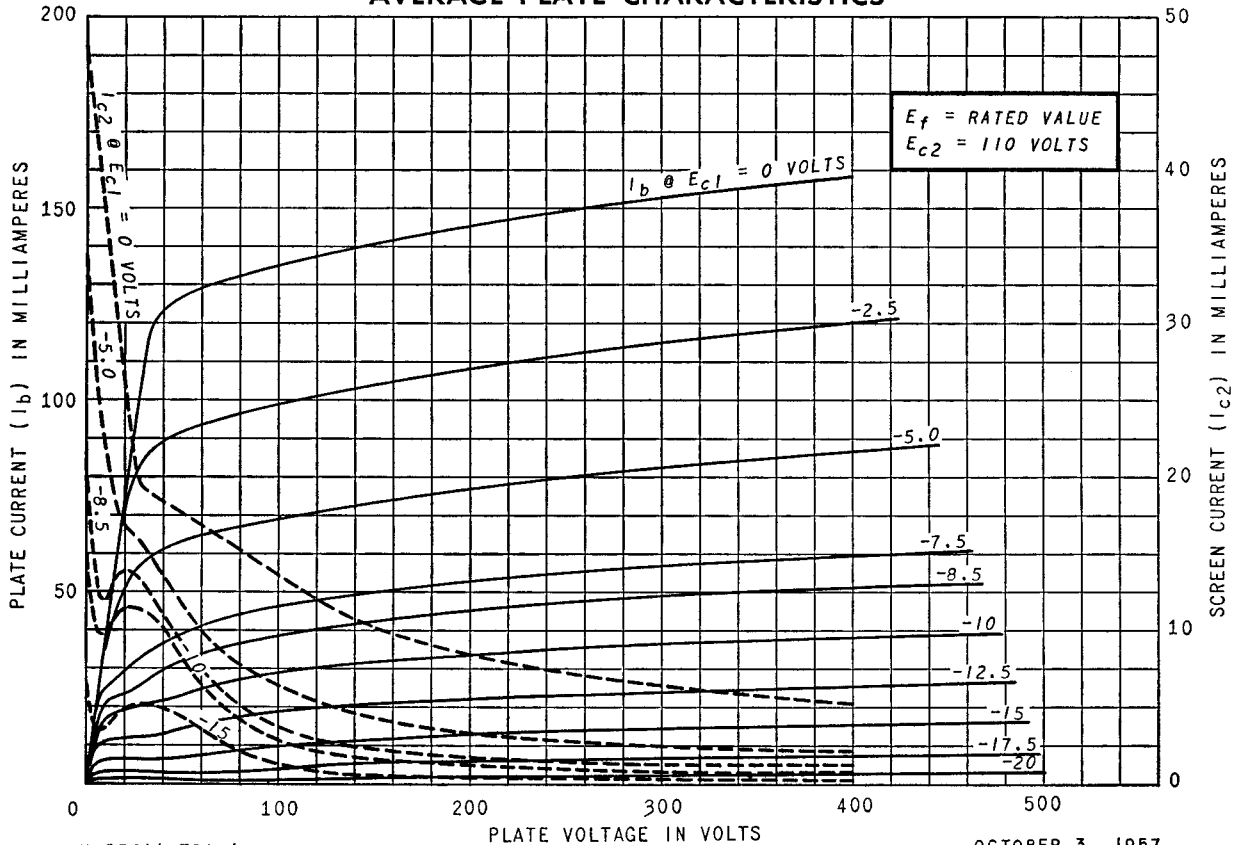
‡ For operation in 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

§ Value given is to be considered as an Absolute Maximum Rating. In this case, the combined effect of supply voltage variation, manufacturing variation including components in the equipment, and adjustment of equipment controls should not cause the rated value to be exceeded.

△ In stages operating with grid-leak bias, an adequate cathode bias-resistor or other suitable means is required to protect the tube in the absence of excitation.

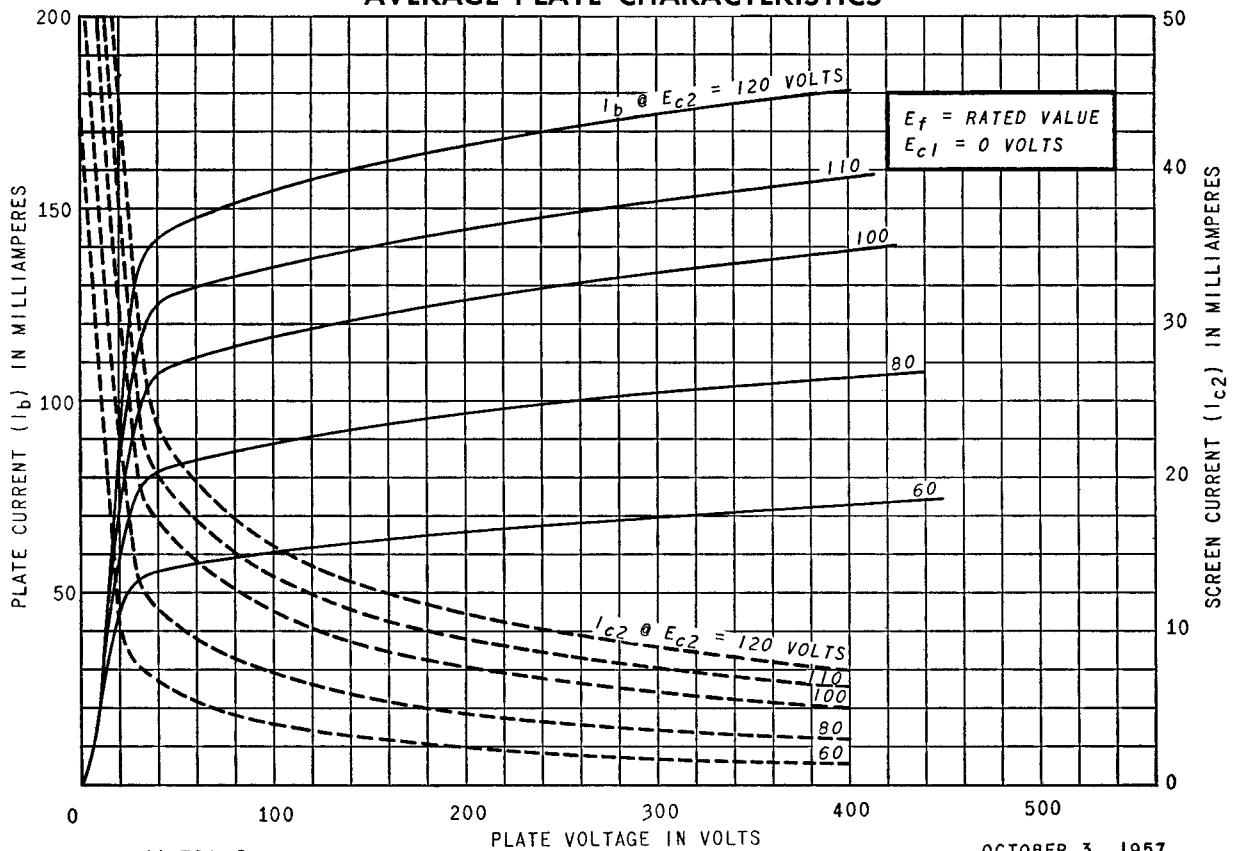
¶ Applied for short interval (2 seconds maximum) so as not to damage tube.

AVERAGE PLATE CHARACTERISTICS



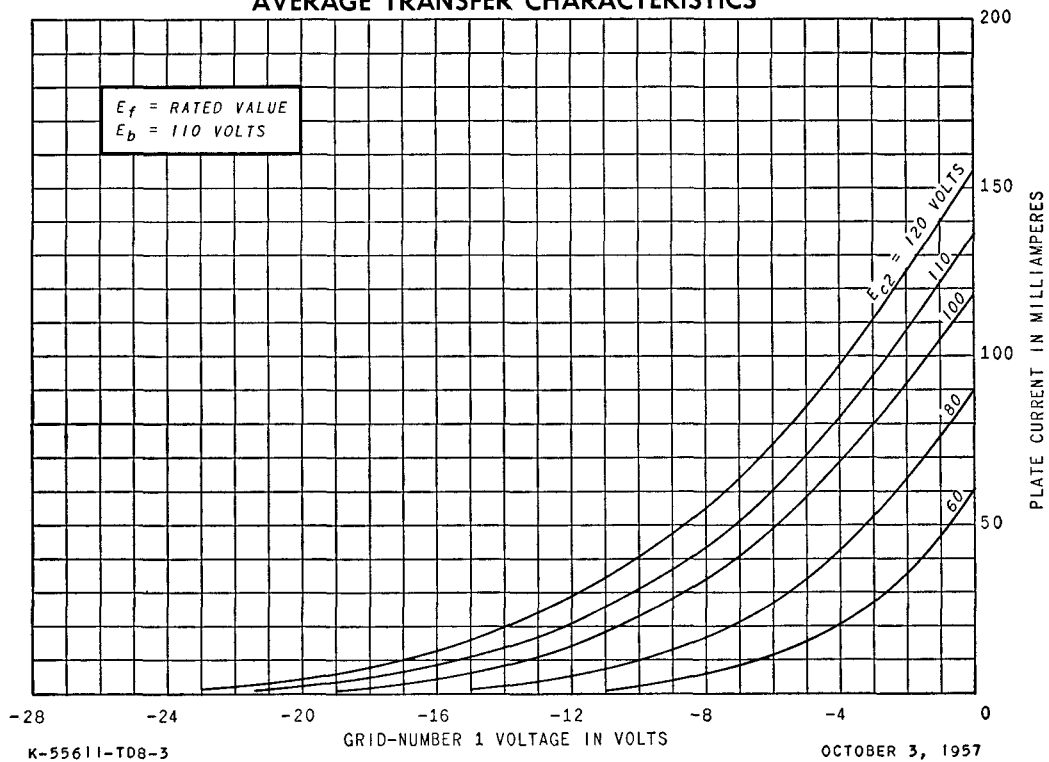
OCTOBER 3, 1957

AVERAGE PLATE CHARACTERISTICS



OCTOBER 3, 1957

AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS

