Electronic TUBES

6FW5

BEAM PENTODE

FOR TV HORIZONTAL-DEFLECTION AMPLIFIER APPLICATIONS

DESCRIPTION AND RATING

The 6FW5 is a beam-power pentode primarily designed for use as the horizontal-deflection amplifier in television receivers.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC	6.3 ± 10%	Volts
Heater Current	1.2	Amperes

Direct Interelectrode Capacitances, approximate†

Grid-Number 1 to Plate: (g1 to p)	0.5	μμf
Input: g1 to (h+k+g2+b.p.)	17	μμf
Output: p to (h+k+g2+b.p.)	7.0	μμf

MECHANICAL

Mounting Position—Any

Envelope—T-12, Glass

Base—B6-112, Short Medium-Shell Octal 6-Pin

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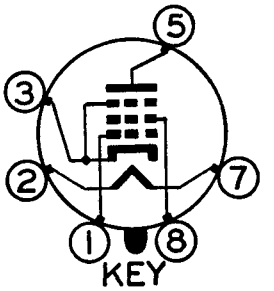
GENERAL ELECTRIC

BASING DIAGRAM

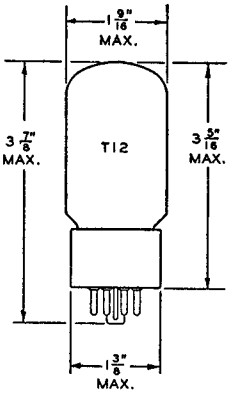


EIA 6CK

TERMINAL CONNECTIONS

Pin 1—Grid Number 1
Pin 2—Heater
Pin 3—Cathode and Beam Plates
Pin 5—Plate
Pin 7—Heater
Pin 8—Grid Number 2 (Screen)

PHYSICAL DIMENSIONS



EIA 12-14

MAXIMUM RATINGS

HORIZONTAL-DEFLECTION AMPLIFIER SERVICE—DESIGN-MAXIMUM VALUES‡

DC Plate-Supply Voltage (Boost+DC Power Supply)	770	Volts
Peak Positive-Pulse Plate Voltage	6500	Volts
Peak Negative-Pulse Plate Voltage	1500	Volts
Screen Voltage	220	Volts
Negative DC Grid-Number 1 Voltage	55	Volts
Peak Negative Grid-Number 1 Voltage	330	Volts
Plate Dissipation§	17.5	Watts
Screen Dissipation	3.5	Watts
DC Cathode Current	175	Milliamperes
Peak Cathode Current	550	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	200	Volts
Grid-Number 1 Circuit Resistance	1.0	Megohms
Bulb Temperature at Hottest Point	220	C

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.

These values are chosen by the tube manufacturer to provide acceptable serviceability of the tube, taking responsibility for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

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, variation in characteristics of all other tubes in the equipment, equipment control adjustment, load variation, signal variation, and environmental conditions.

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Plate Voltage	60	250	Volts
Screen Voltage	150	150	Volts
Grid-Number 1 Voltage	0¶	−22.5	Volts
Plate Resistance, approximate	—	20000	Ohms
Transconductance	—	6600	Micromhos
Plate Current	345	75	Milliamperes
Screen Current	30	2.4	Milliamperes
Grid-Number 1 Voltage, approximate			
Ib = 1.0 Milliampere	—	−46	Volts
Triode Amplification Factor #	—	4.1	

† Without external shield.

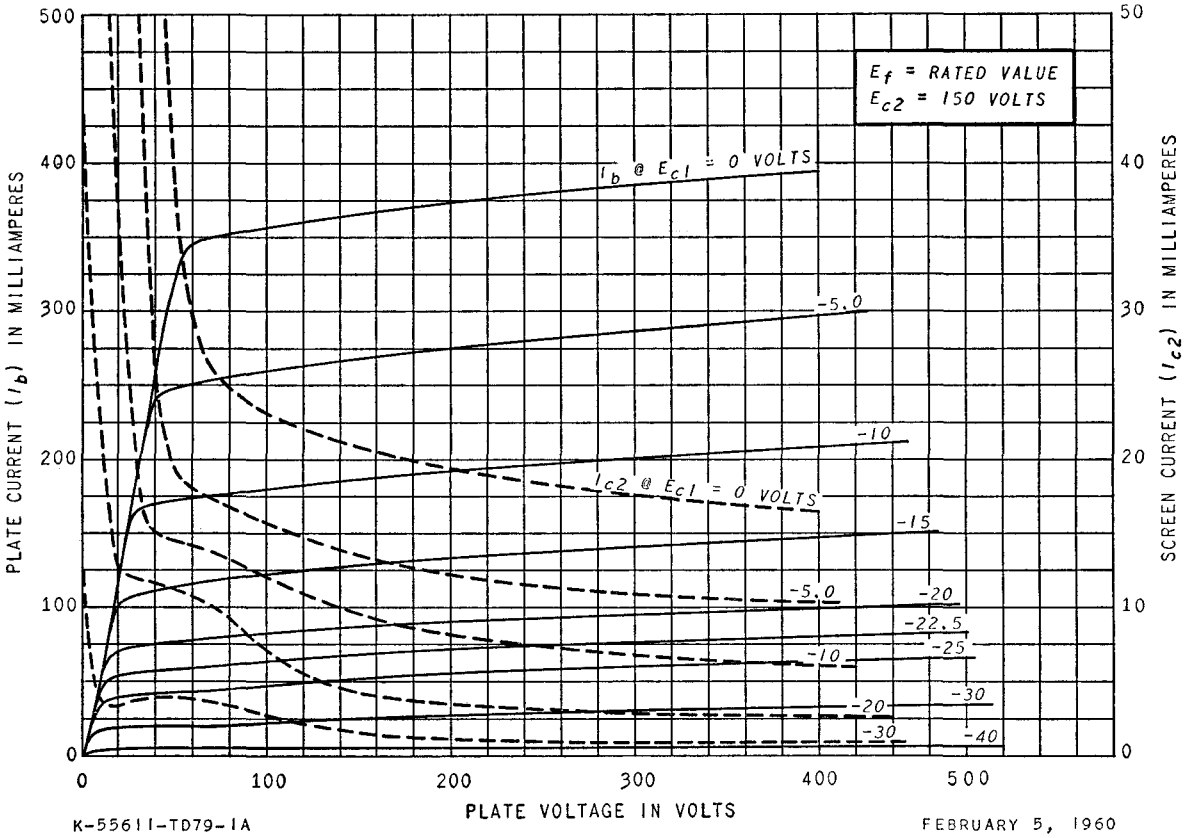
‡ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

§ 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 (two seconds maximum) so as not to damage tube.

Triode connection (screen tied to plate) with Eb = Ec2 = 150 volts and Ec1 = −22.5 volts.

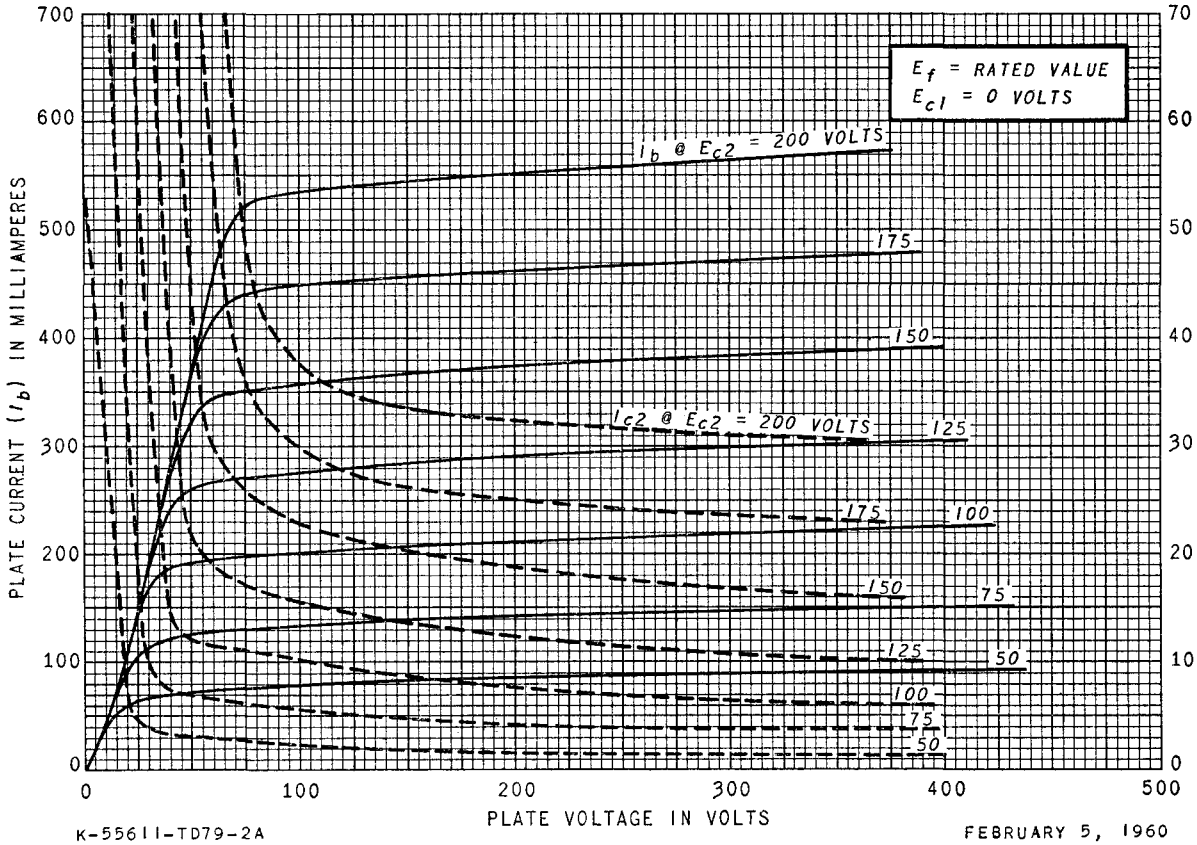
AVERAGE PLATE CHARACTERISTICS



K-5561I-TD79-1A

FEBRUARY 5, 1960

AVERAGE PLATE CHARACTERISTICS



K-5561I-TD79-2A

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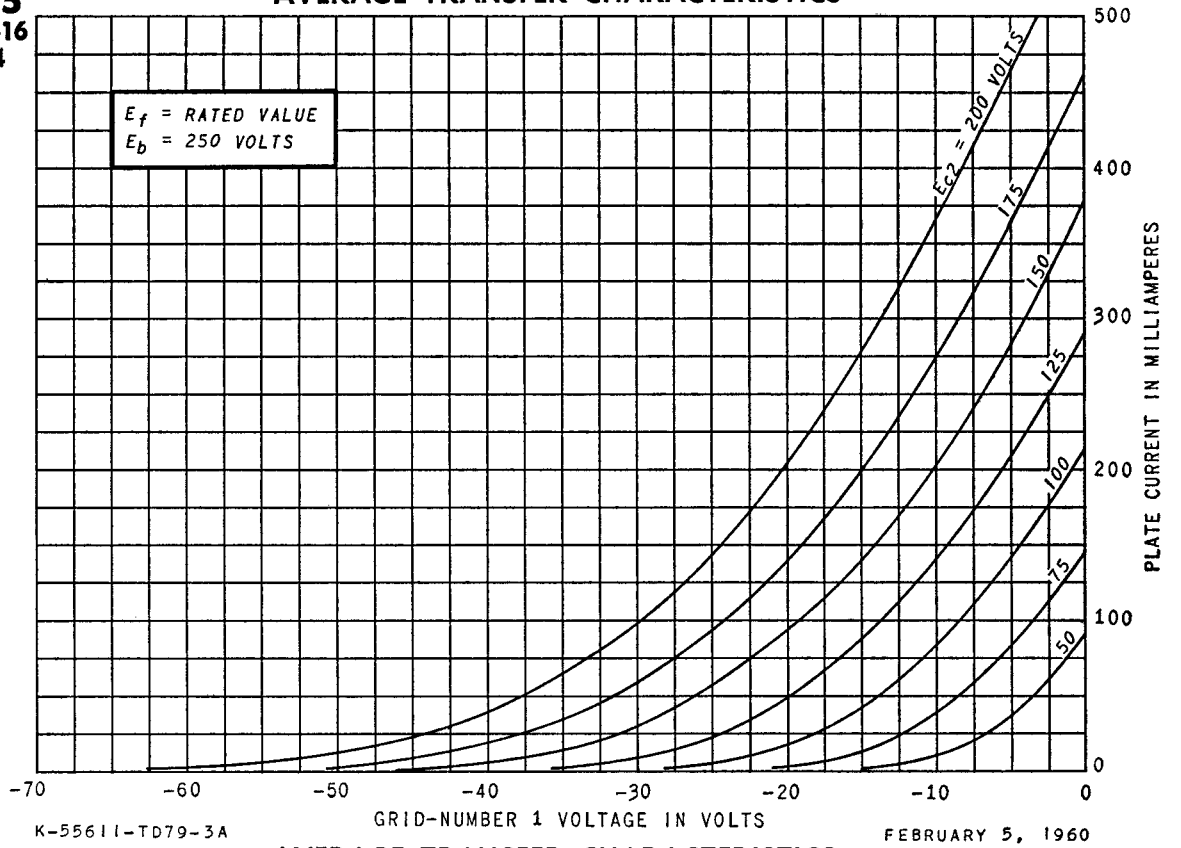
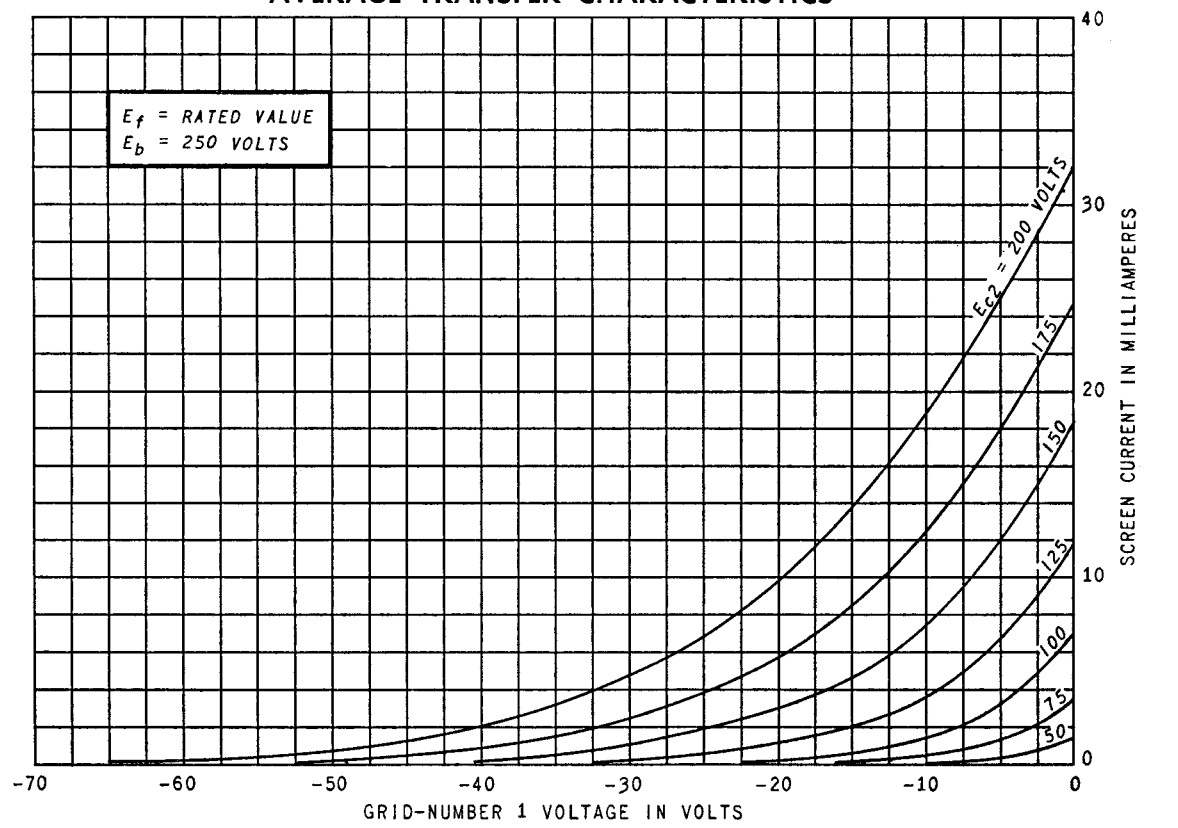
AVERAGE TRANSFER CHARACTERISTICS



K-5561I-TD79-3A

FEBRUARY 5, 1960

AVERAGE TRANSFER CHARACTERISTICS



K-5561I-TD79-4A

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ELECTRONIC COMPONENTS DIVISION

GENERAL ELECTRIC

Schenectady 5, N. Y.