

DESCRIPTION AND RATING

The 12GC6 is a beam-power pentode primarily designed for use as the horizontal-deflection amplifier in television receivers. Its high zero-bias plate current at low plate and screen voltages makes the tube well suited for use in receivers that operate at low plate-supply voltages.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC.....	12.6	Volts
Heater Current.....	$0.6 \pm 6\%$	Amperes
Heater Warm-up Time*.....	11	Seconds

Direct Interelectrode Capacitances, approximate†

Grid-Number 1 to Plate: (g1 to p).....	0.55	$\mu\mu\text{f}$
Input: g1 to (h+k+g2+b.p.).....	15	$\mu\mu\text{f}$
Output: p to (h+k+g2+b.p.).....	7.0	$\mu\mu\text{f}$

MECHANICAL

Mounting Position—Any

Envelope—T-12, Glass

Base—B6-122, Short Medium-Shell Octal 6-Pin

Top Cap—C1-3, Skirted Miniature

MAXIMUM RATINGS

HORIZONTAL-DEFLECTION AMPLIFIER SERVICE—DESIGN-MAXIMUM VALUES†

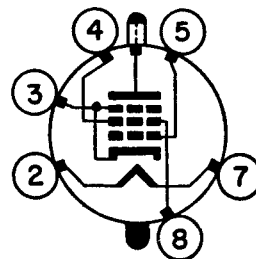
DC Plate-Supply Voltage (Boost+DC Power Supply).....	770	Volts
Peak Positive Pulse Plate Voltage.....	6500	Volts
Peak Negative Pulse Plate Voltage.....	1500	Volts
Screen Voltage.....	220	Volts
Peak Negative Grid-Number 1 Voltage.....	330	Volts
Plate Dissipation§.....	17.5	Watts
Screen Dissipation.....	4.5	Watts
DC Cathode Current.....	175	Milliamperes
Peak Cathode Current.....	550	Milliamperes

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The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or elements. In the absence of an express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of the tubes with other devices or elements by any purchaser of tubes or others.

GENERAL  ELECTRIC

BASING DIAGRAM

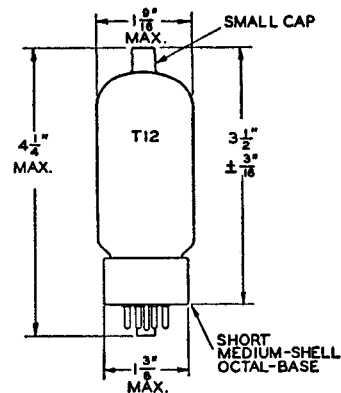


EIA 8JX

TERMINAL CONNECTIONS

Pin 2—Heater	
Pin 3—Cathode and Beam Plates	
Pin 4—Grid Number 2 (Screen)	2
Pin 5—Grid Number 1	
Pin 7—Heater	
Pin 8—Grid Number 2 (Screen)	2
Cap—Plate	

PHYSICAL DIMENSIONS



EIA 12-19

MAXIMUM RATINGS (Cont'd)

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
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Grid-Number 1 Circuit Resistance	1.0	Megohms
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Bulb Temperature at Hottest Point	220	C
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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	5000	60	250	Volts
Screen Voltage	150	150	150	Volts
Grid-Number 1 Voltage	—	0†	—22.5	Volts
Plate Resistance, approximate	—	—	20,000	Ohms
Transconductance	—	—	6600	Micromhos
Plate Current	—	345	75	Milliamperes
Screen Current	—	30	2.4	Milliamperes
Grid-Number 1 Voltage, approximate				
$I_b = 1.0$ Milliampere	—100	—	—46	Volts
Triode Amplification Factor #	—	—	4.1	

* 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.

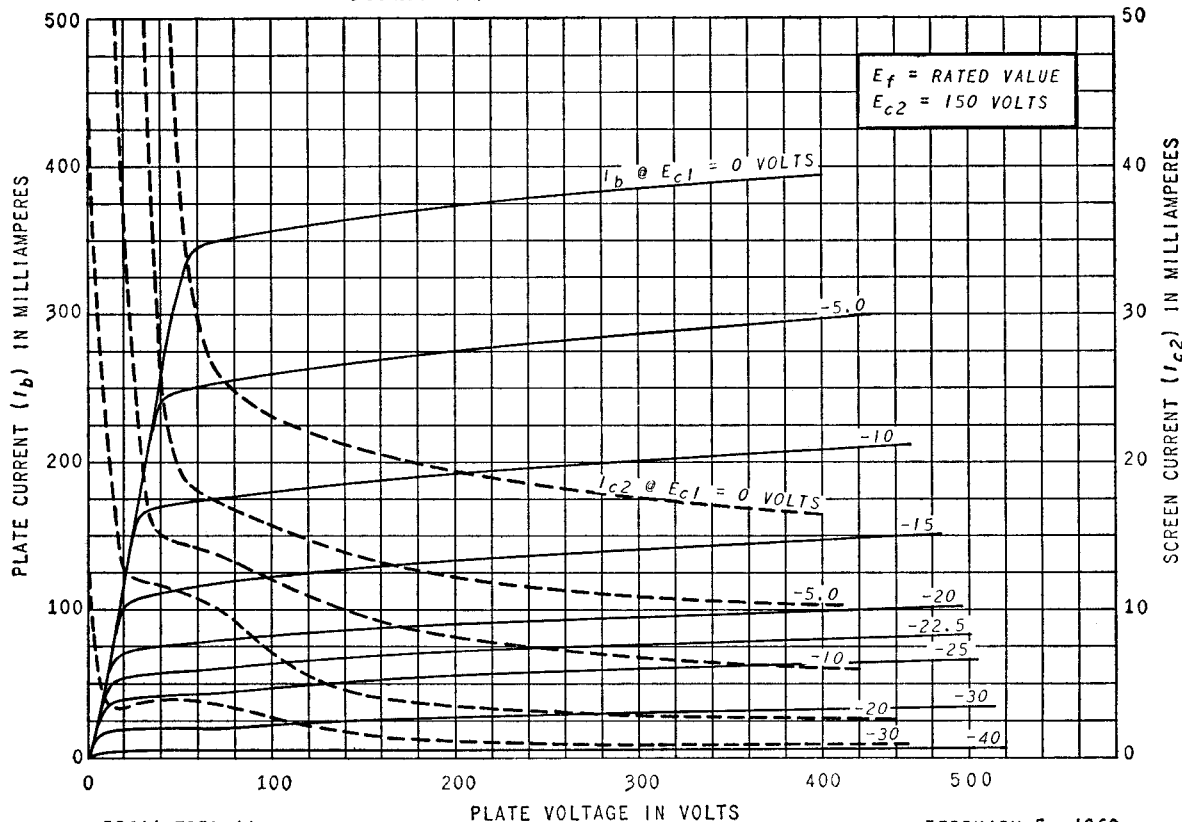
‡ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations," Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

§ 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.

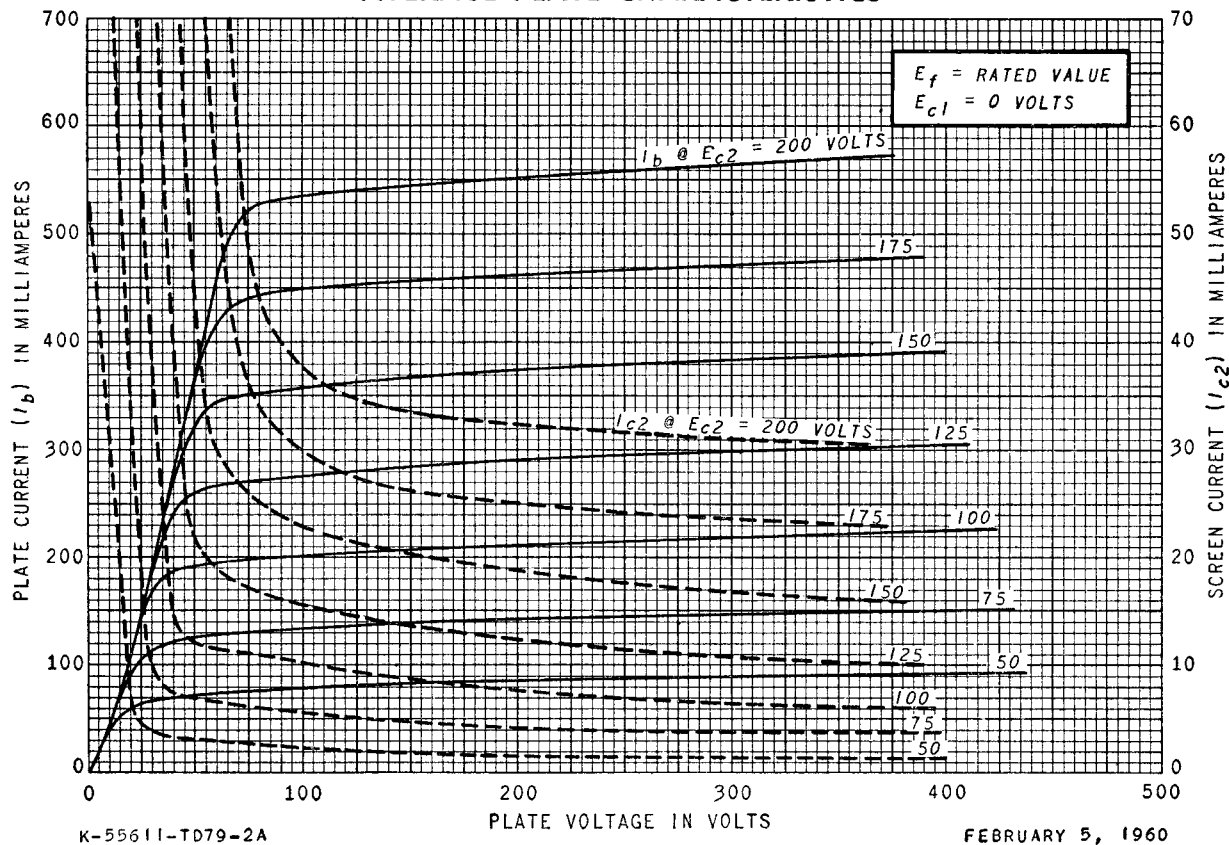
¶ Applied for short interval (two seconds maximum) so as not to damage tube.

Triode Connection (screen tied to plate) with $E_b = E_{c2} = 150$ volts, and $E_{c1} = -22.5$ volts.

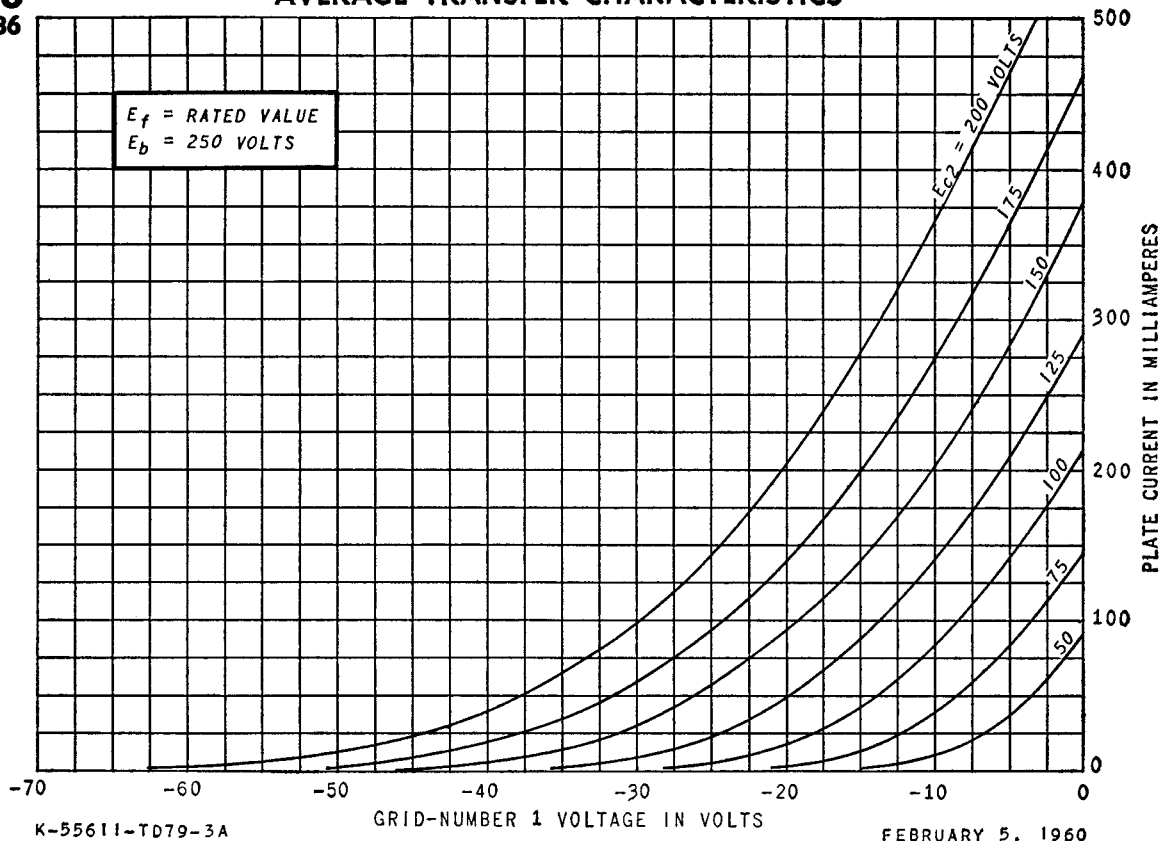
AVERAGE PLATE CHARACTERISTICS



AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS

