



DESCRIPTION AND RATING

FOR TV HORIZONTAL-DEFLECTION AMPLIFIER APPLICATIONS

The 6DQ6-B 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. It differs from the 6DQ6-A in having higher ratings and higher zero-bias plate current.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential
Heater Characteristics and Ratings
Heater Voltage, AC or DC* 6.3 ± 0.6 Volts
Heater Current† 1.2 Amperes
Direct Interelectrode Capacitances, approximate‡
Grid-Number 1 to Plate: (g1 to p) 0.5 pf
Input: g1 to (h+k+g2+b.p.) 15 pf
Output: p to (h+k+g2+b.p.) 7.0 pf

MECHANICAL

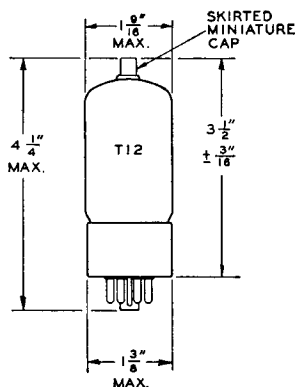
Mounting Position—Any
Envelope—T-12, Glass
Base—B6-122, Short Medium-Shell Octal 6-Pin
or B6-148, Short Medium-Shell Octal 6-Pin
or B7-111, Short Medium-Shell Octal 7-Pin
or B7-119, Short Medium-Shell Octal 7-Pin
Top Cap—C1-3, Skirted Miniature
Outline Drawing—EIA 12-51
Maximum Diameter $1\frac{9}{16}$ Inches
Maximum Over-all Length $4\frac{1}{4}$ Inches
Maximum Seated Height $3\frac{1}{16}$ Inches

MAXIMUM RATINGS

HORIZONTAL-DEFLECTION AMPLIFIER SERVICE†—DESIGN—
MAXIMUM VALUES

DC Plate-Supply Voltage (Boost + DC Power Supply)	770 Volts	Peak Cathode Current	610 Milliamperes
Peak Positive Pulse Plate Voltage . . .	6500 Volts	Heater-Cathode Voltage	
Peak Negative Pulse Plate Voltage . . .	1500 Volts	Heater Positive with Respect to Cathode	
Screen Voltage	220 Volts	DC Component	100 Volts
Peak Negative Grid-Number 1 Voltage .	330 Volts	Total DC and Peak	200 Volts
Plate Dissipation *	18 Watts	Heater Negative with Respect to Cathode	
Screen Dissipation	3.6 Watts	Total DC and Peak	200 Volts
DC Cathode Current	175 Milliamperes	Grid-Number 1 Circuit Resistance	1.0 Megohm
		Bulb Temperature at Hottest Point . . .	220 C

PHYSICAL DIMENSIONS

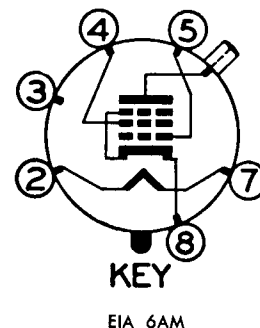


EIA 12-51

TERMINAL CONNECTIONS

Pin 1—No Connection§
Pin 2—Heater
Pin 3—No Connection
Pin 4—Grid Number 2 (Screen)
Pin 5—Grid Number 1
Pin 7—Heater
Pin 8—Cathode and Beam Plates
Cap—Plate

BASING DIAGRAM



CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Plate Voltage.....	5000	60	250	Volts
Screen Voltage.....	150	150	150	Volts
Grid-Number 1 Voltage.....		0 Δ	-22.5	Volts
Plate Resistance, approximate.....			18000	Ohms
Transconductance.....			7300	Micromhos
Plate Current.....		345	65	Milliamperes
Screen Current.....		27	1.8	Milliamperes
Grid-Number 1 Voltage, approximate				
I _b = 1.0 Milliamperes.....	-100		-42	Volts
Triode Amplification Factor ϕ			4.4	

* The equipment designer should design the equipment so that heater voltage is centered at the specified bogey value, with heater supply variations restricted to maintain heater voltage within the specified tolerance.

† Heater current of a bogey tube at $E_F = 6.3$ volts.

‡ Without external shield.

§ Pin 1 is omitted when either a B6-122 or B6-148 base is used.

¶ 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.

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

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

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey electron tube of a specified type as defined by its published data and should not be exceeded under the worst probable conditions.

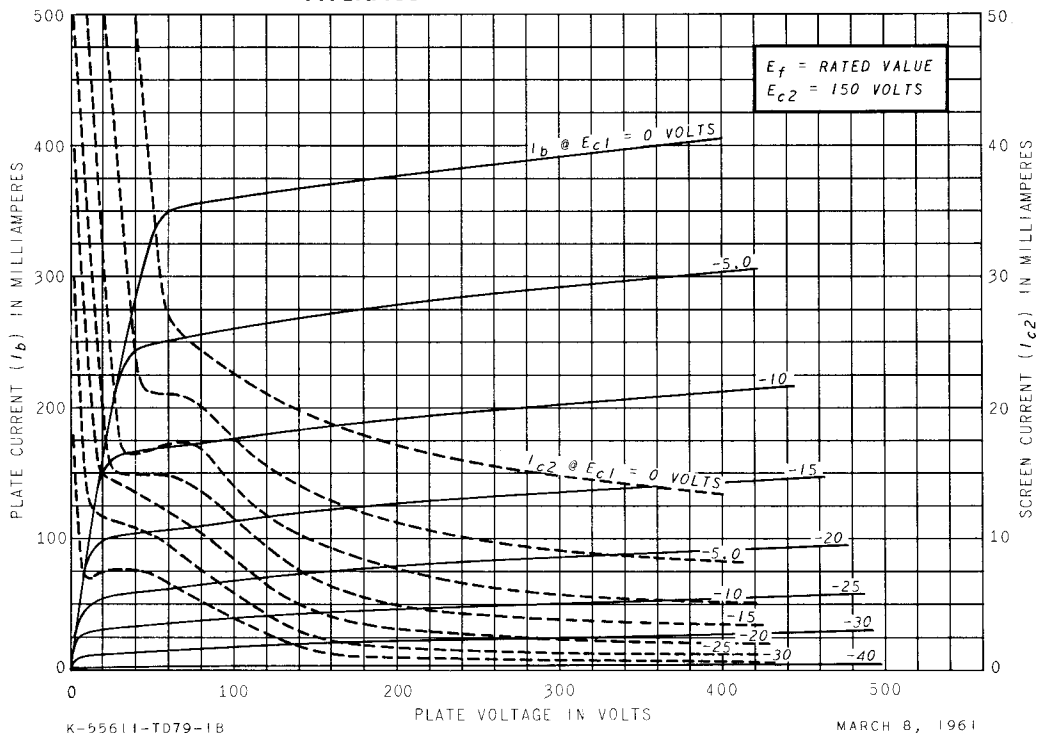
The tube manufacturer chooses these values to provide acceptable serviceability of the tube, making allowance for the effects of changes in operating conditions due to variations in the characteristics of the tube under consideration.

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

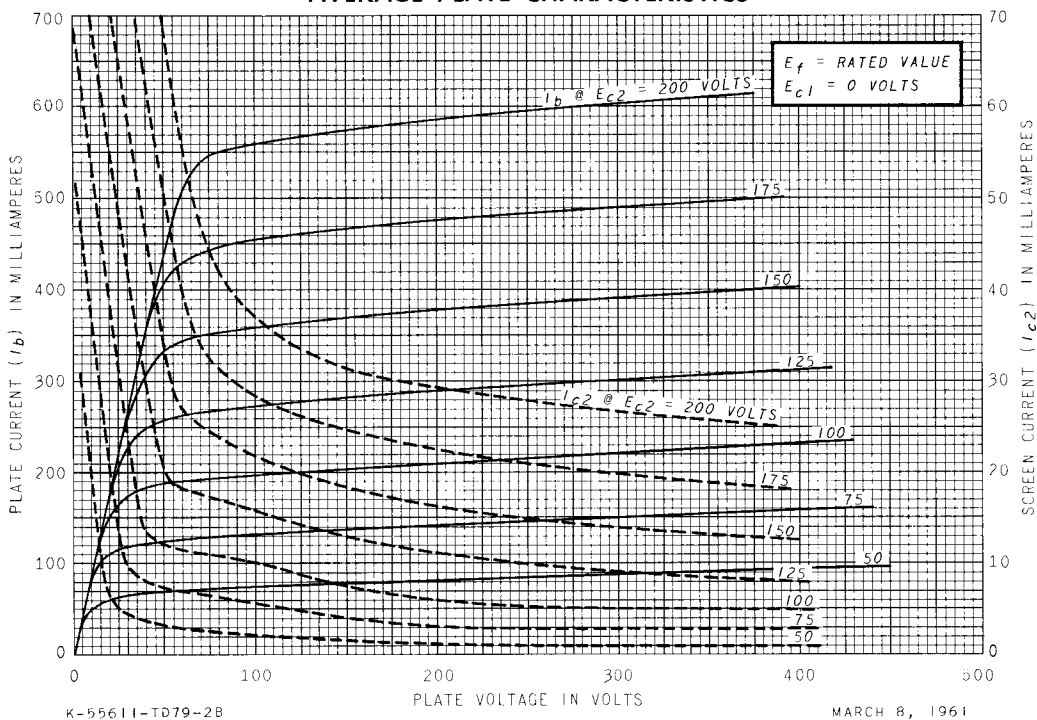
The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or

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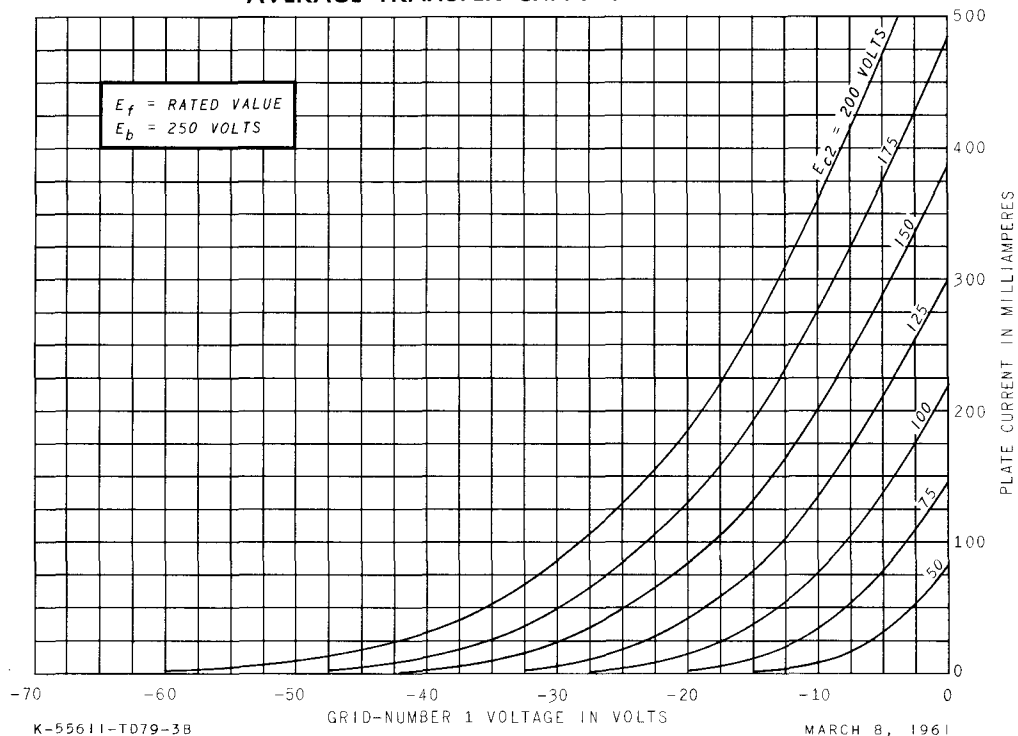
AVERAGE PLATE CHARACTERISTICS



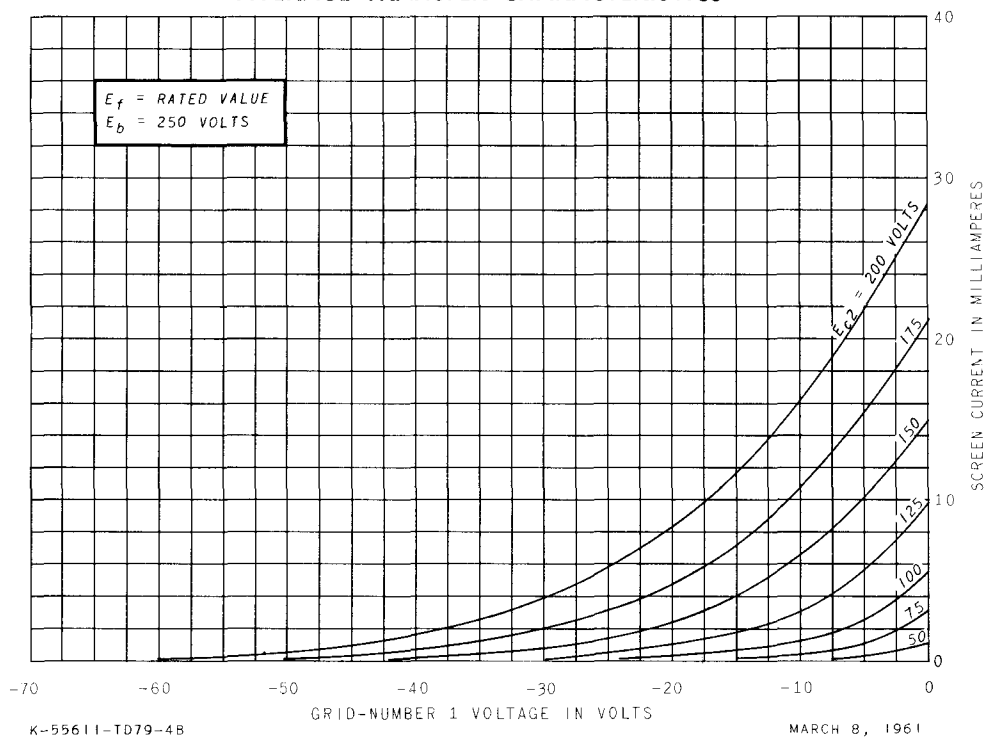
AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



RECEIVING TUBE DEPARTMENT

GENERAL  ELECTRIC

Owensboro, Kentucky