Compactron Beam Pentode

6LB6

FOR TV HORIZONTAL-DEFLECTION AMPLIFIER APPLICATIONS

The 6LB6 is a compactron beam-power pentode primarily designed for use as the horizontal-deflection amplifier in color television receivers. It is characterized by having a very low knee voltage, high plate-to-screen ratio, and high peak current capability. These efficiency factors make the 6LB6 widely adaptable for use in circuits using shunt or variable-bias type regulation with B+ supply voltages from 240 to over 400 volts. Its low knee minimizes "snivets" without the necessity of supplying special voltages to the beam plates.

GENERAL

ELECTRICAL

Cathode - Coated Unipotential

Heater Characteristics and Ratings

Heater Voltage, AC or DC*. . . .	6.3±0.6	Volts
Heater Current‡	2.25	Amperes

Direct Interelectrode Capacitances, approximate§

Grid-Number 1 to Plate: (g1 to p) .	0.44	pf
Input: g1 to (h + k + g2 + b.p.) .	33	pf
Output: p to (h + k + g2 + b.p.) .	18	pf

MECHANICAL

Operating Position - Any
Envelope - T-12, Glass
Base - E12-74, Button 12-Pin
Top Cap - C1-2, Skirted Miniature
Outline Drawing - EIA 12-90

Maximum Diameter	1.563	Inches
Minimum Diameter	1.437	Inches
Maximum Over-all Length. . . .	4.375	Inches
Maximum Seated Height	4.000	Inches
Minimum Seated Height	3.750	Inches

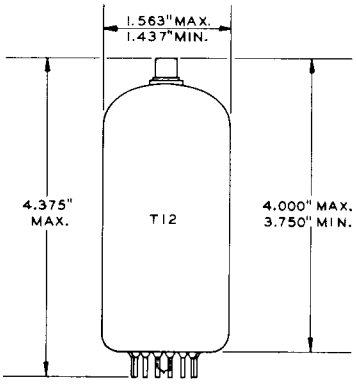
MAXIMUM RATINGS

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.

PHYSICAL DIMENSIONS

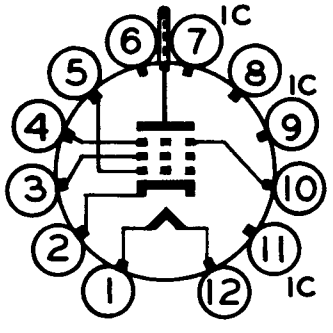


EIA 12-90

TERMINAL CONNECTIONS

Pin 1 - Heater
Pin 2 - Cathode
Pin 3 - Grid Number 2 (Screen)
Pin 4 - Beam Plates
Pin 5 - Grid Number 1
Pin 6 - No Connection
Pin 7 - Internal Connection - Do Not Use
Pin 8 - No Connection
Pin 9 - Internal Connection - Do Not Use
Pin 10 - Beam Plates
Pin 11 - Internal Connection - Do Not Use
Pin 12 - Heater
Cap - Plate

BASING DIAGRAM



EIA 12GJ

MAXIMUM RATINGS (Cont'd)

HORIZONTAL-DEFLECTION AMPLIFIER SERVICE¶—

DESIGN-MAXIMUM VALUES UNLESS OTHERWISE INDICATED

DC Plate-Supply Voltage (Boost + DC Power Supply)	990	Volts
Peak Positive Pulse Plate Voltage (Absolute Maximum Value)	7000	Volts
Peak Negative Pulse Plate Voltage	100	Volts
Positive DC Beam Plate Voltage	0	Volts
Screen Voltage	200	Volts
Peak Negative Grid-Number 1 Voltage	300	Volts
Plate Dissipation# (Absolute Maximum Value)	30	Watts
Screen Dissipation	5.0	Watts
DC Cathode Current	315	Milliamperes
Peak Cathode Current	1100	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		
With Feedback-Type High Voltage Regulation	1.2	Megohms
With Shunt-Type High Voltage Regulation (Switching Mode)	10.0	Megohms
Beam Plate Circuit Resistance	0	Ohms
Bulb Temperature△	200	C

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Plate Voltage	5000	45	50	150	Volts
Beam Plates Connected to Cathode at Socket					
Screen Voltage	110	160	110	110	Volts
Grid-Number 1 Voltage	---	0	---	-20	Volts
Plate Resistance, approximate	---	---	---	6600	Ohms
Transconductance	---	---	---	13400	Micromhos
Plate Current	---	900**	560**	105	Milliamperes
Screen Current	---	110**	46**	2.0	Milliamperes
Grid-Number 1 Voltage, approximate					
Ib = 1.0 Milliamperes	-125	---	---	-40	Volts
Triode Amplification Factor‡‡	---	---	---	4.0	

NOTES

* 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 Ef = 6.3 volts.

§ 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.

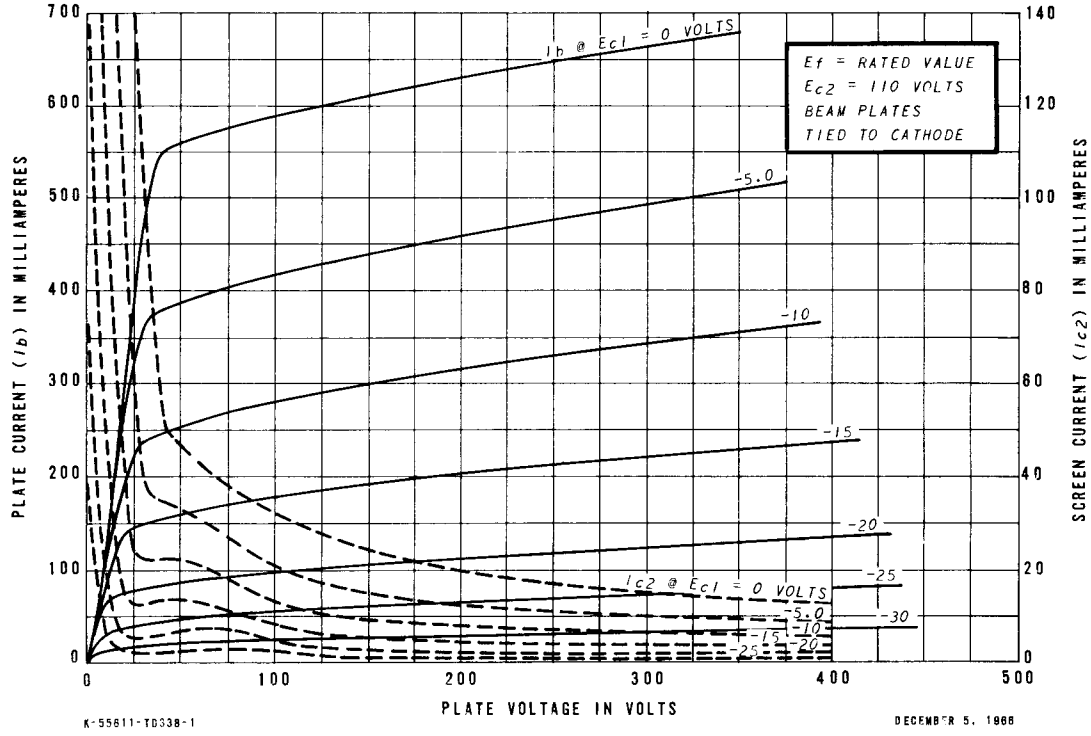
\# In stages operating with grid-leak bias, an adequate cathode-bias resistor or other suitable means is required to protect the tube in the absence of excitation.

△ Measured using a thermocouple attached to a 0.1-inch wide phosphor-bronze ring placed at the hottest location on the bulb.

** Values measured by a method involving a recurrent waveform such that the plate and screen dissipation will be kept within ratings in order to prevent damage to the tube.

‡‡ Triode connection (screen tied to plate) with Eb = Ec2 = 125 volts, and Ec1 = -25 volts.

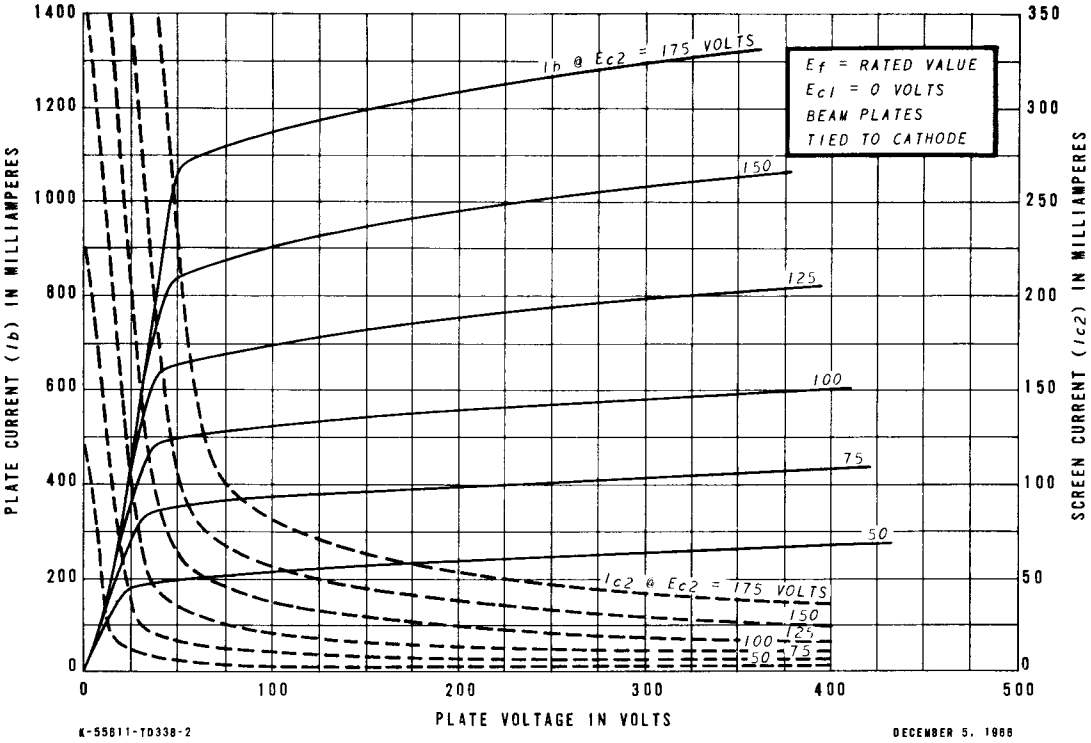
AVERAGE PLATE CHARACTERISTICS



K-55811-TD338-1

DECEMBER 5, 1966

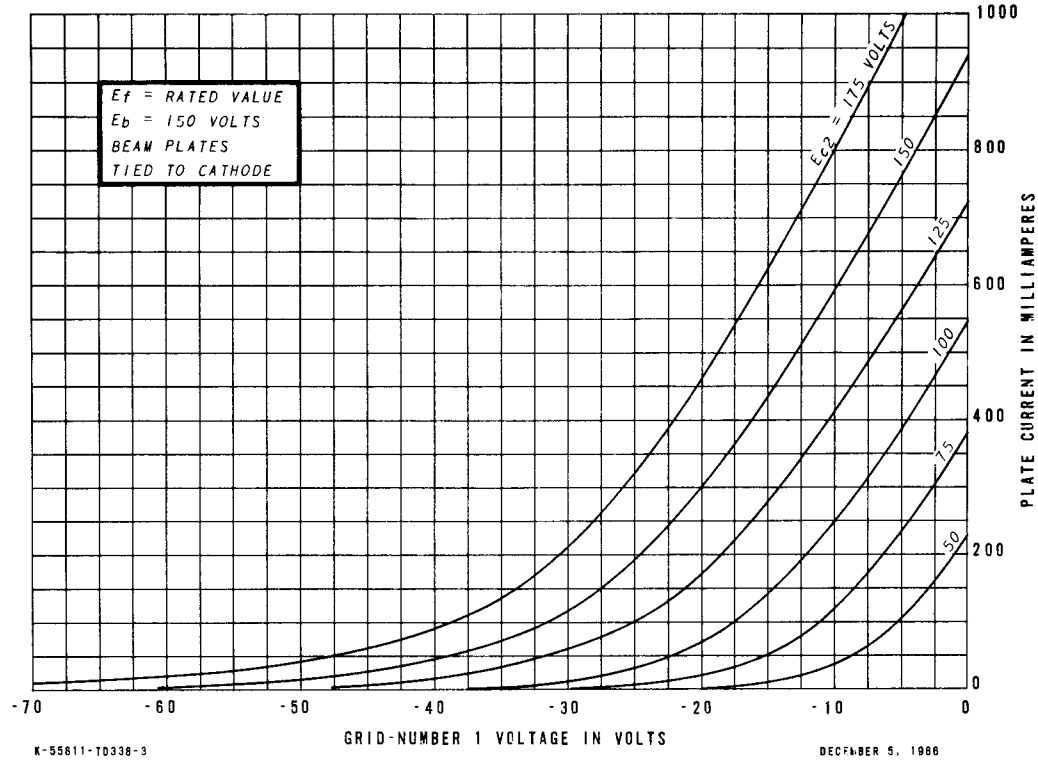
AVERAGE PLATE CHARACTERISTICS



K-55811-TD338-2

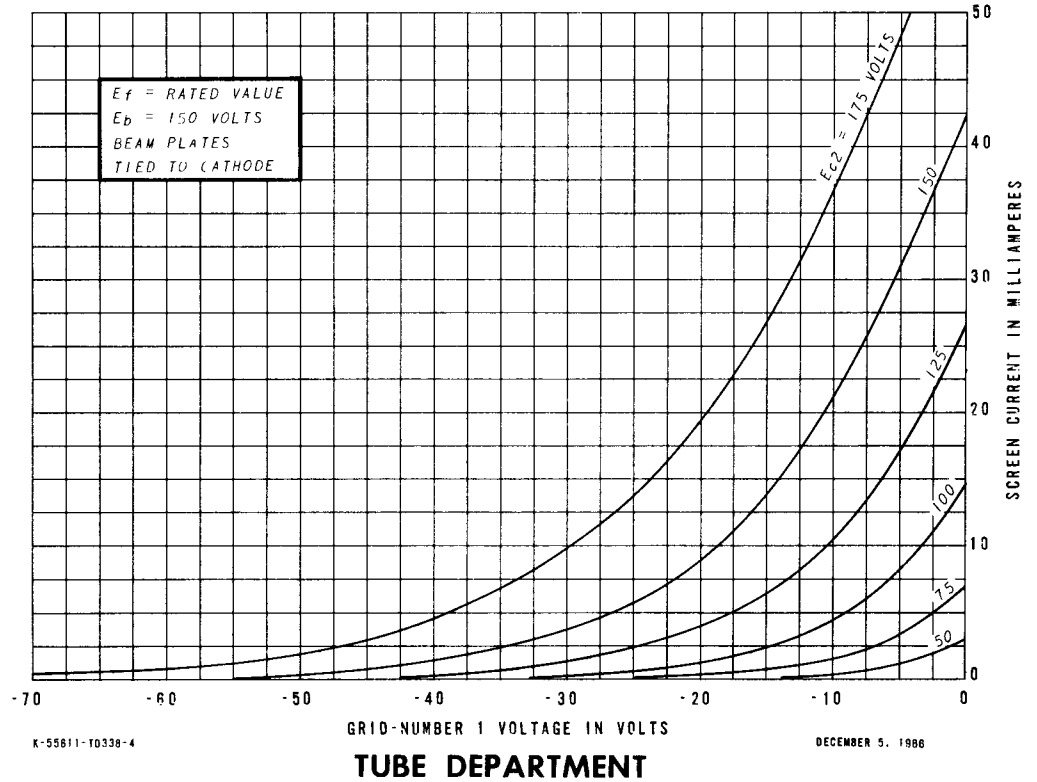
DECEMBER 5, 1966

AVERAGE TRANSFER CHARACTERISTICS



K-55611-TD338-3 DECEMBER 5, 1986

AVERAGE TRANSFER CHARACTERISTICS



K-55611-TD338-4 DECEMBER 5, 1986

TUBE DEPARTMENT

GENERAL ELECTRIC

Owensboro, Kentucky