

25EC6

BEAM PENTODE

DESCRIPTION AND RATING

The 25EC6 is a beam-power pentode designed for use as the horizontal-deflection amplifier in television receivers that employ 110-degree-deflection picture tubes. Designed especially for use in receivers that operate from off-the-line rectifiers, the tube features high performance capabilities at relatively low supply voltages. It has electrical characteristics similar to those of the 25CD6-GB. In addition, the 25EC6 features a controlled heater warm-up characteristic to make it especially suited for use in television receivers that employ 600-milliampere series-connected heaters.

ELECTRICAL

Cathode—Coated Unipotential	
Heater Voltage, AC or DC	25 Volts
Heater Current	$0.6 \pm 6\%$ Amperes
Heater Warm-up Time*	11 Seconds
Direct Interelectrode Capacitances, approximate†	
Grid-Number 1 to Plate	0.6 $\mu\mu\text{f}$
Input	24 $\mu\mu\text{f}$
Output	10 $\mu\mu\text{f}$

GENERAL

MECHANICAL

- Mounting Position—Any
- Envelope—T-12, Glass
- Base—B8-110, Short Medium-Shell Octal 8-Pin
- Top Cap—C1-1, Small

MAXIMUM RATINGS

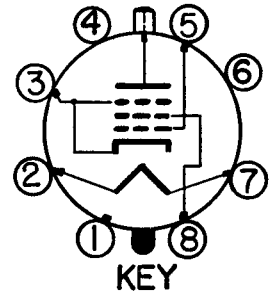
HORIZONTAL-DEFLECTION AMPLIFIER SERVICE‡

DESIGN-MAXIMUM VALUES

DC Plate-Supply Voltage (Boost+DC Power Supply)	700 Volts
Peak Positive Pulse Plate Voltage	7000 Volts
Peak Negative Pulse Plate Voltage	1500 Volts
Screen Voltage	175 Volts
Peak Negative Grid-Number 1 Voltage	300 Volts
Plate Dissipation§	10 Watts
Screen Dissipation	4.0 Watts
DC Cathode Current	200 Milliamperes
Peak Cathode Current	700 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 Grid-Leak Bias	1.5 Megohms
Bulb Temperature at Hottest Point	225 C

Design-Maximum Ratings are the limiting values expressed with respect to bogie tubes at which satisfactory tube life can be expected to occur for the types of service for which the tube is rated. Therefore, the equipment designer must establish the circuit design so that initially and throughout equipment life no design-maximum value is exceeded with a bogie tube under the worst probable operating conditions with respect to supply-voltage variation, equipment component variation, equipment control adjustment, load variation, and environmental conditions.

BASING DIAGRAM

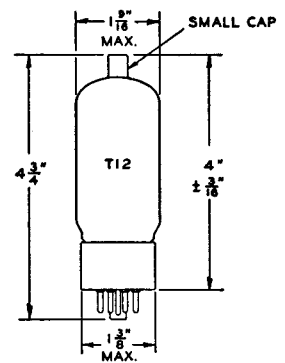


RETMA 5BT

TERMINAL CONNECTIONS

- Pin 1—No Connection
- Pin 2—Heater
- Pin 3—Cathode and Beam Plates
- Pin 4—No Connection
- Pin 5—Grid Number 1
- Pin 6—No Connection
- Pin 7—Heater
- Pin 8—Grid Number 2 (Screen)
- Cap —Plate

PHYSICAL DIMENSIONS



CHARACTERISTICS AND TYPICAL OPERATION**AVERAGE CHARACTERISTICS**

Plate Voltage	60	135 Volts
Screen Voltage	135	135 Volts
Grid-Number 1 Voltage	0	-22.5 Volts
Plate Resistance, approximate		4700 Ohms
Transconductance		7500 Micromhos
Plate Current	350	70 Milliamperes
Screen Current	40	4.5 Milliamperes
Grid-Number 1 Voltage, approximate I _b = 1.0 Milliampere		-42 Volts
Triode Amplification Factor¶		3.8

* 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.

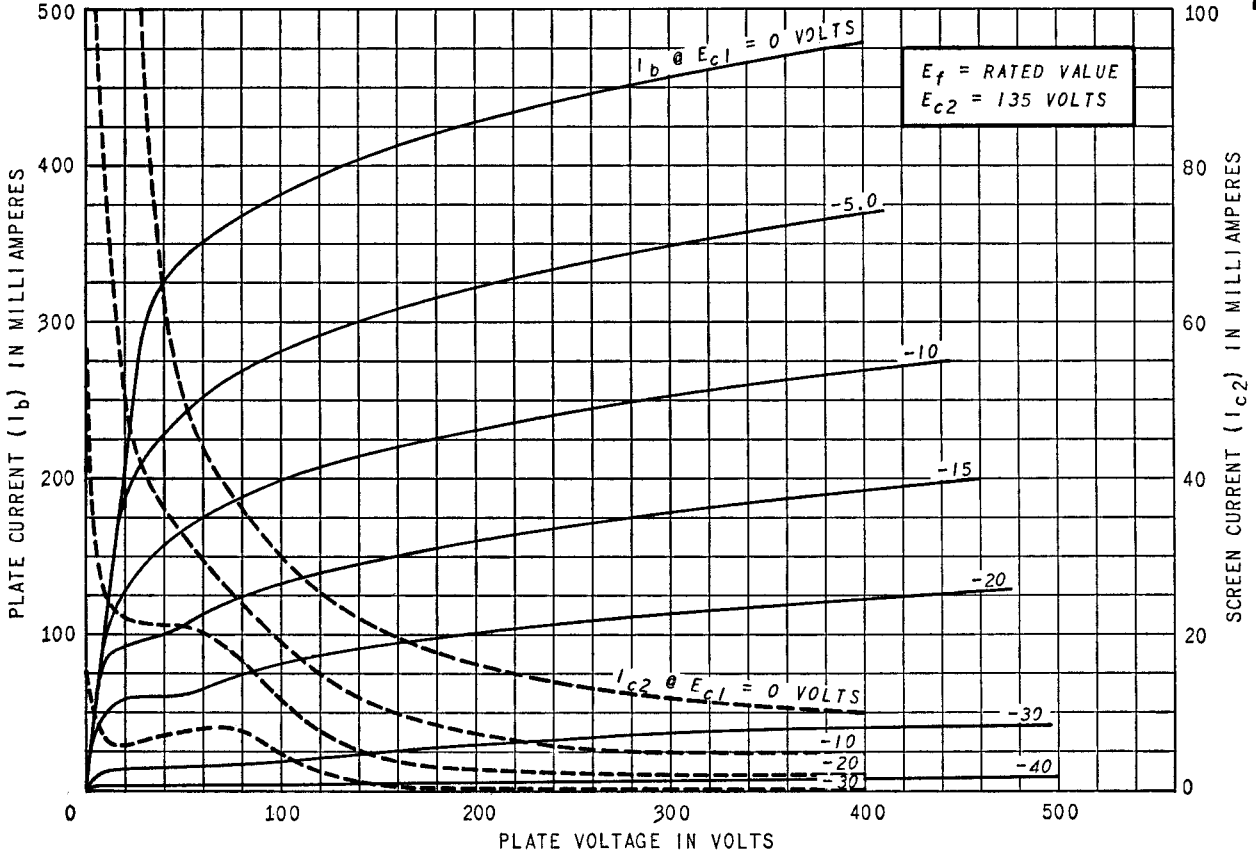
‡ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

§ 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.

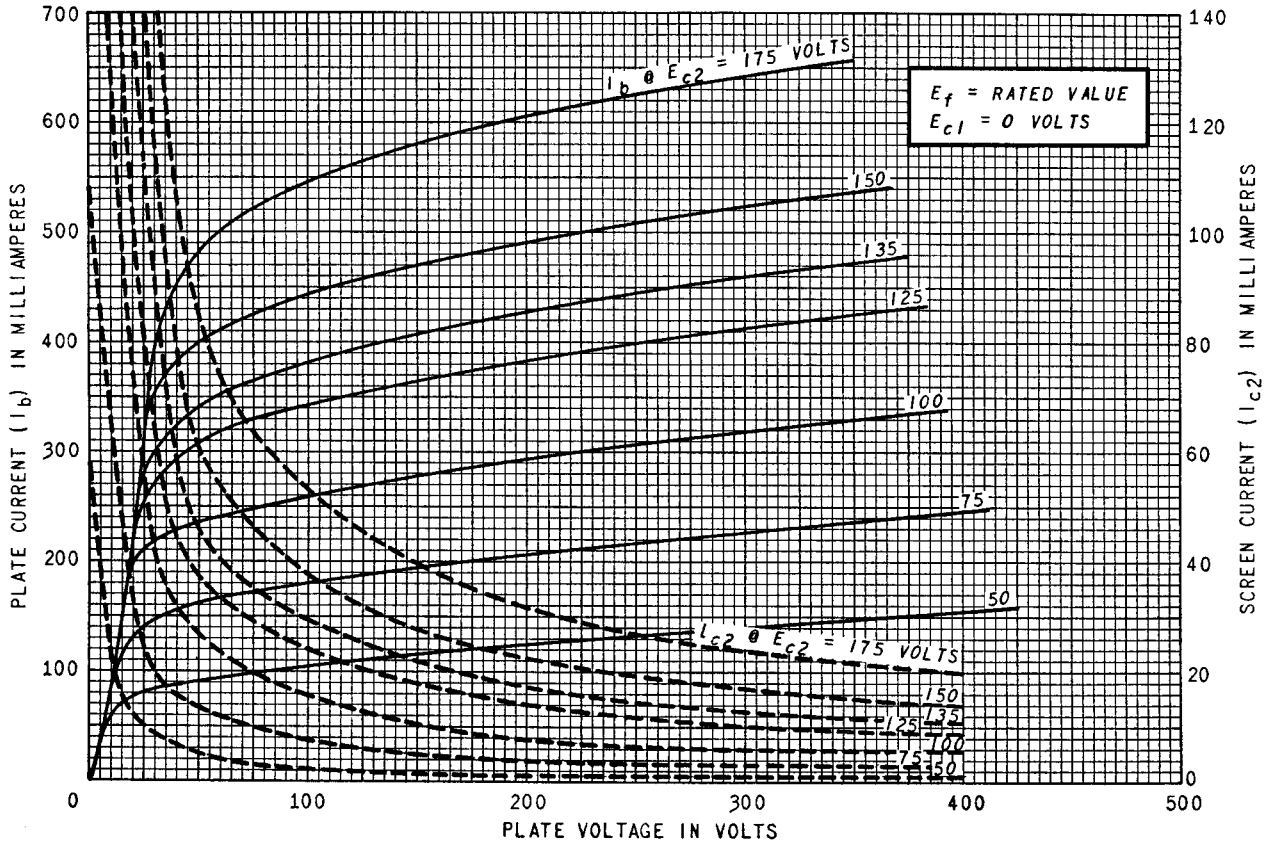
|| Applied for short interval (two seconds maximum) so as not to damage tube.

¶ Triode connection (screen tied to plate) with E_b = E_{c2} = 135 volts and E_{c1} = -22.5 volts.

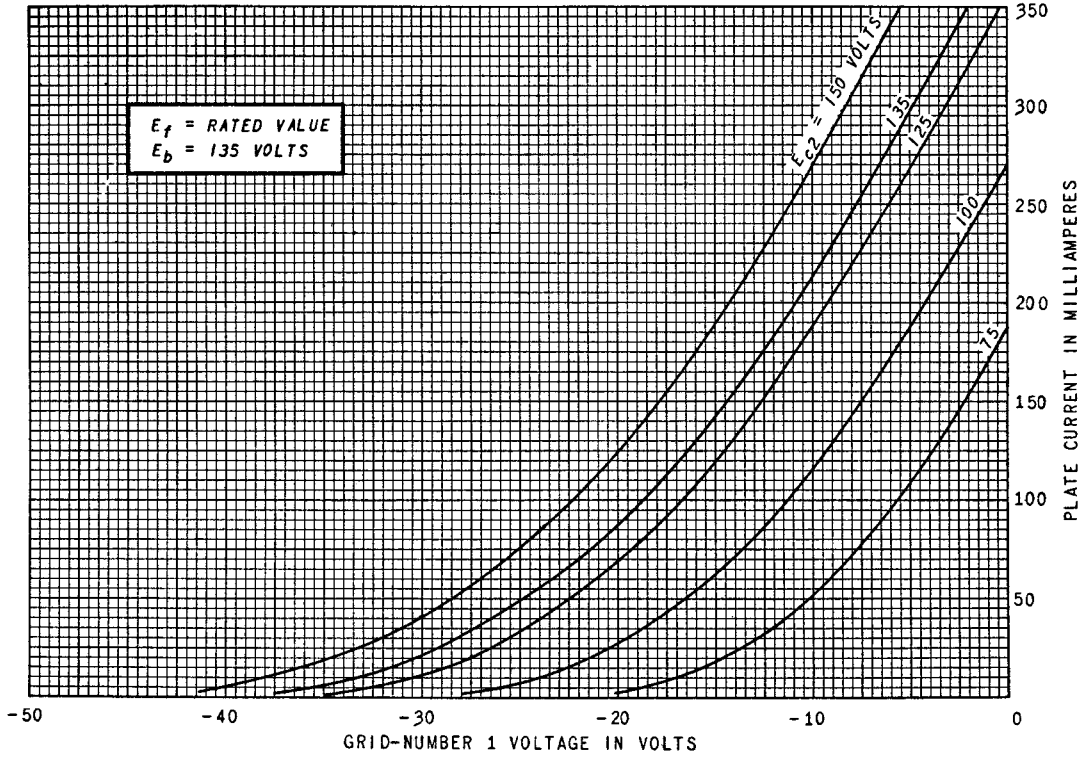
AVERAGE PLATE CHARACTERISTICS



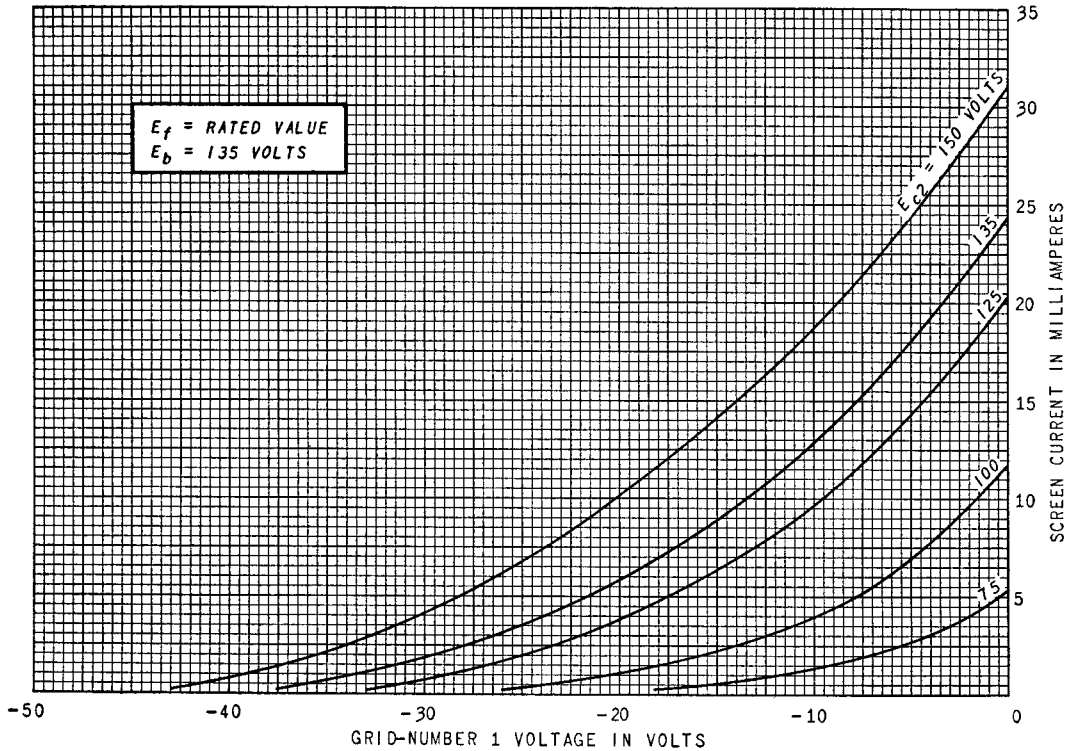
AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



ELECTRONIC COMPONENTS DIVISION



Schenectady 5, N. Y.