

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-milliamperere 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 μf
Input 24 μf
Output 10 μf

MECHANICAL

Mounting Position—Any

Envelope—T-12, Glass

Base—B8-110, Short Medium-Shell Octal 8-Pin

Top Cap—C1-1, Small

GENERAL

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

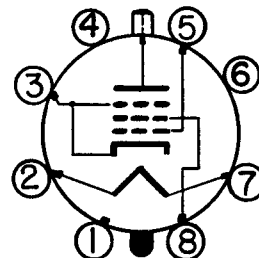
Grid-Number 1 Circuit Resistance

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



KEY

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

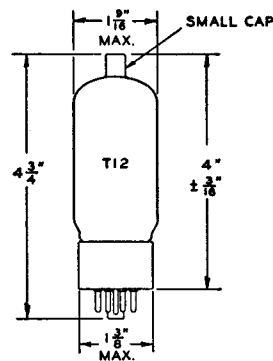
Pin 6—No Connection

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 Ib = 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.

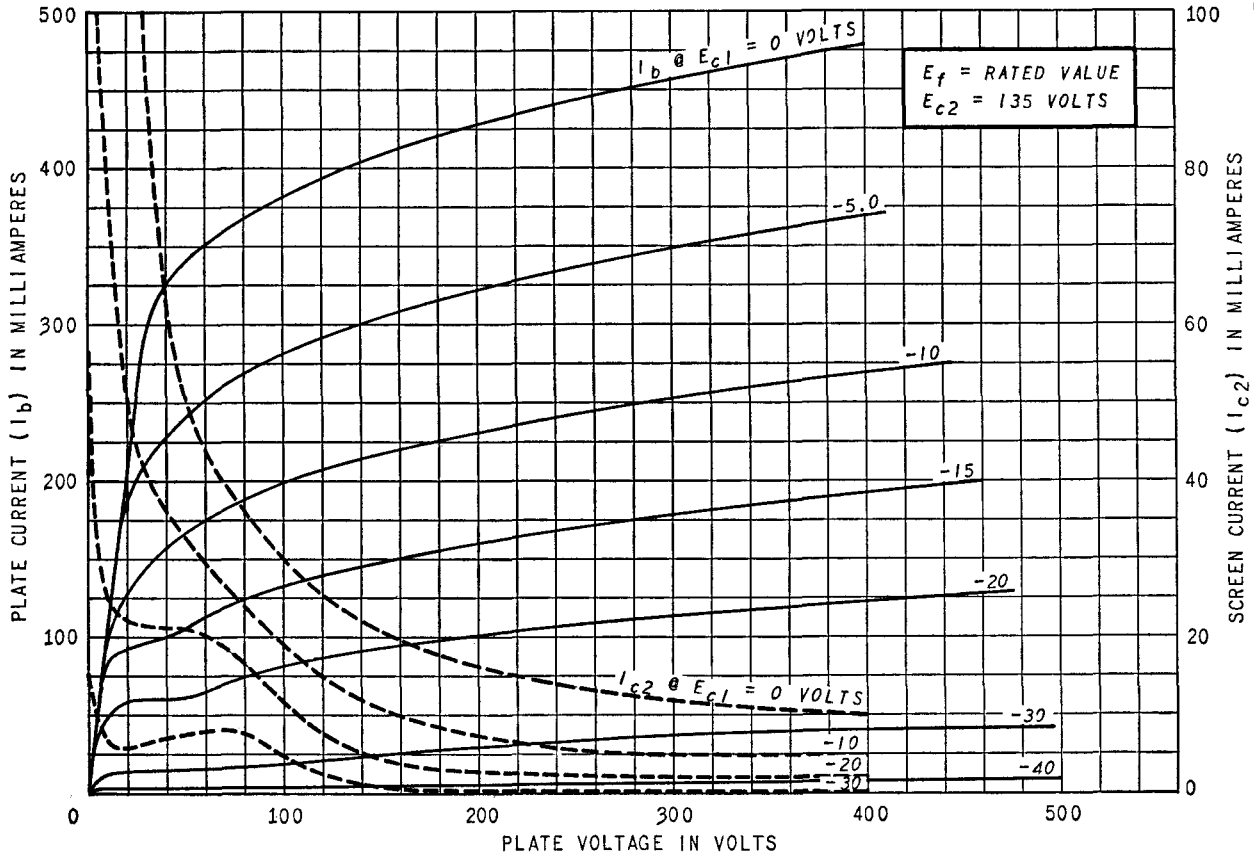
‡ For operation in a 525-line, 30-frame television system as described in "Standards of Good Engineering Practice Concerning Television Broadcast Stations", Federal Communications Commission. The duty cycle of the voltage pulse must not exceed 15 percent of one scanning cycle.

§ 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.

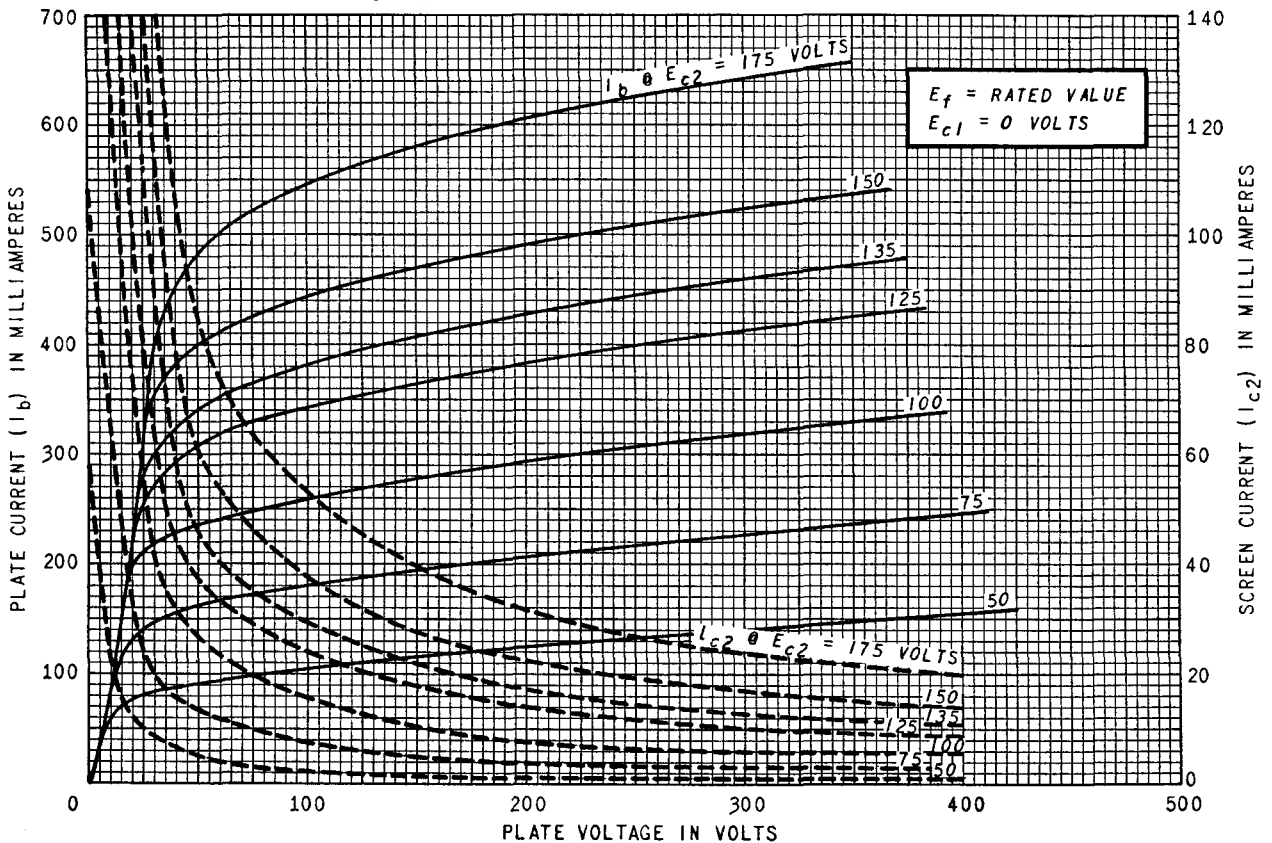
|| Applied for short interval (two seconds maximum) so as not to damage tube.

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

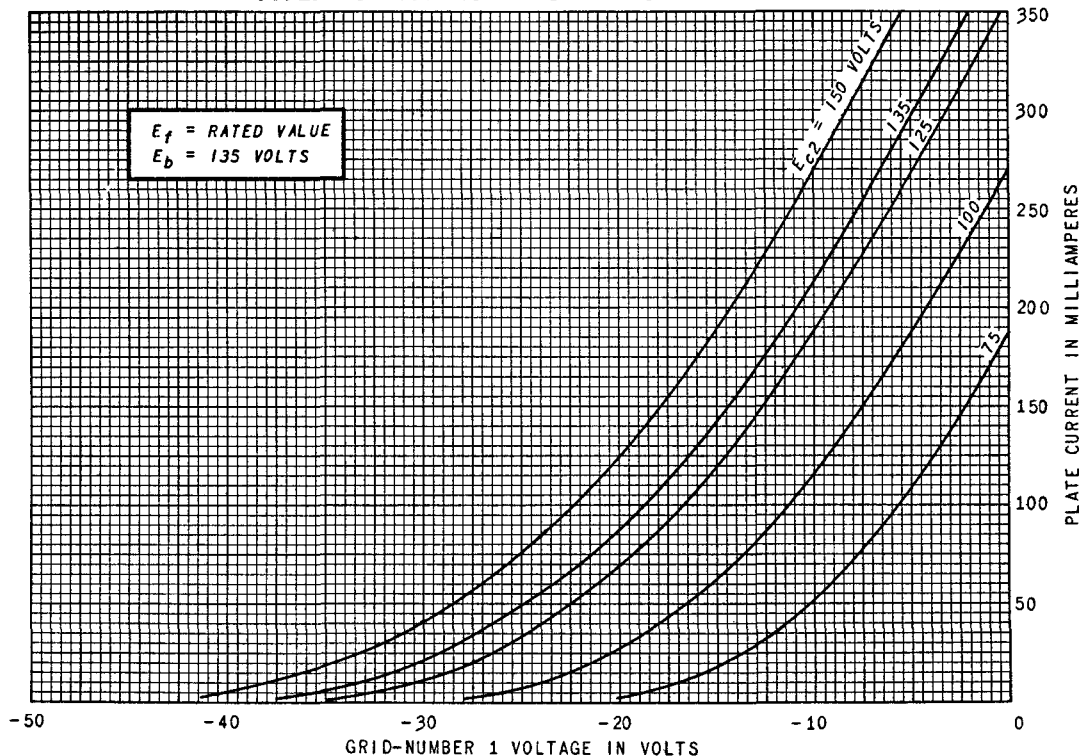
AVERAGE PLATE CHARACTERISTICS



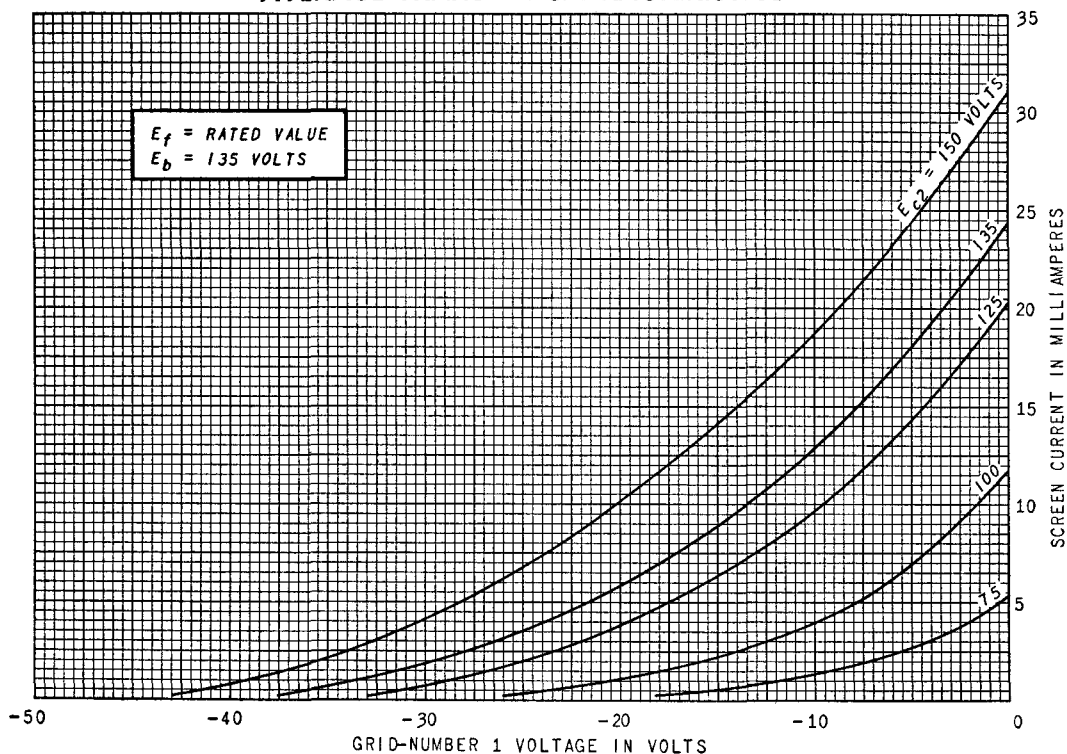
AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



ELECTRONIC COMPONENTS DIVISION



Schenectady 5, N. Y.