

BEAM PENTODE

FOR TV HORIZONTAL-DEFLECTION AMPLIFIER APPLICATIONS

DESCRIPTION AND RATING

The 25DN6 is a beam-power pentode designed primarily for use as the horizontal-deflection amplifier in television receivers which incorporate large-deflection-angle picture tubes. Features of the tube include high perveance, high plate current at low plate and screen voltages, and a high ratio of plate to screen current. As a result of its controlled heater warm-up characteristic, the 25DN6 is especially suited for use in television receivers that employ 600-milliamperere, series-connected heaters.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential		
Heater Voltage, AC or DC	25.0	Volts
Heater Current	0.6	Amperes
Heater Warm-up Time*	11	Seconds
Direct Interelectrode Capacitances, approximate†		
Grid-Number 1 to Plate	0.8	μf
Input	22	μf
Output	11.5	μf

MECHANICAL

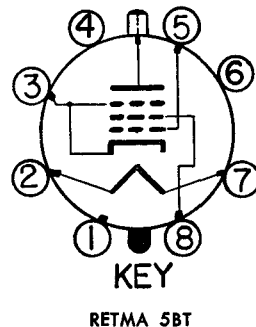
Mounting Position—Vertical‡
Envelope—T-12, Glass
Base—B8-118, Short Medium-Shell Octal 8-Pin
Top Cap—C1-1, Small

MAXIMUM RATINGS

HORIZONTAL-DEFLECTION AMPLIFIER SERVICE§ DESIGN-CENTER VALUES UNLESS OTHERWISE INDICATED

DC Plate-Supply Voltage (Boost+DC Power Supply)	700	Volts
Peak Positive Pulse Plate Voltage	6600 Δ	Volts
Peak Negative Pulse Plate Voltage	1500	Volts
Screen Voltage	175	Volts
Peak Negative Grid-Number 1 Voltage	200	Volts
Plate Dissipation¶	15	Watts
Screen Dissipation	3.0	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	0.47	Megohms
Bulb Temperature at Hottest Point	225	C

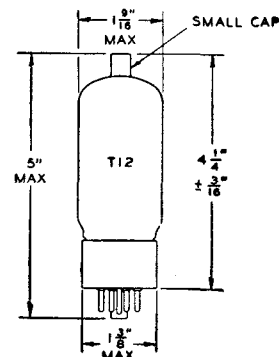
BASING DIAGRAM



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	50	125	Volts
Screen Voltage	100	125	Volts
Grid-Number 1 Voltage	0 ϕ	-18	Volts
Plate Resistance, approximate		4000	Ohms
Transconductance		9000	Micromhos
Plate Current	240	70	Milliamperes
Screen Current	30	6.3	Milliamperes
Grid-Number 1 Voltage, approximate Ib = 0.5 Milliampere		-36	Volts
Triode Amplification Factor**		4.35	

* The time required for the voltage across the heater to reach 80 per cent 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.

‡ Horizontal operation is permitted if pins 2 and 7 are in a vertical plane.

§ 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.

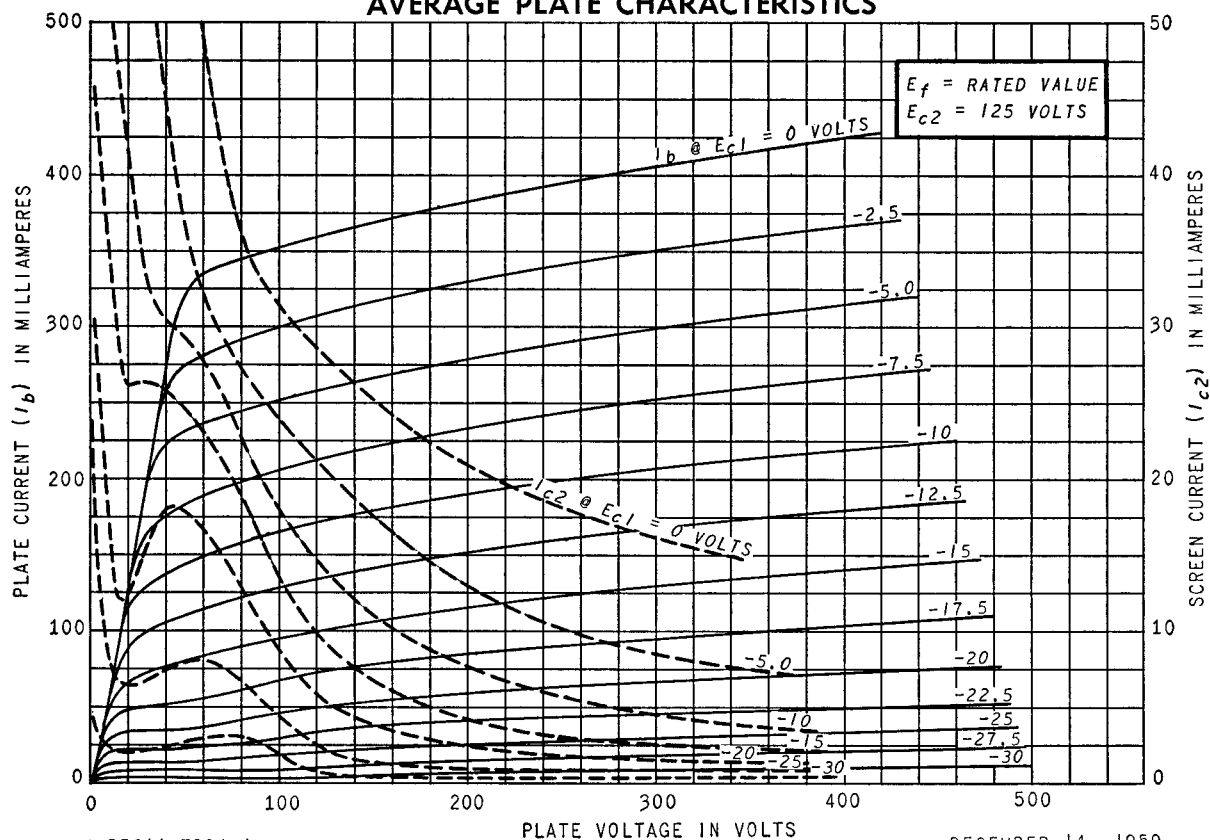
△ Value given is to be considered as an Absolute Maximum Rating. In this case, the combined effect of supply voltage variation, manufacturing variation including components in the equipment, and adjustment of equipment controls should not cause the rated value to be exceeded.

◆ 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.

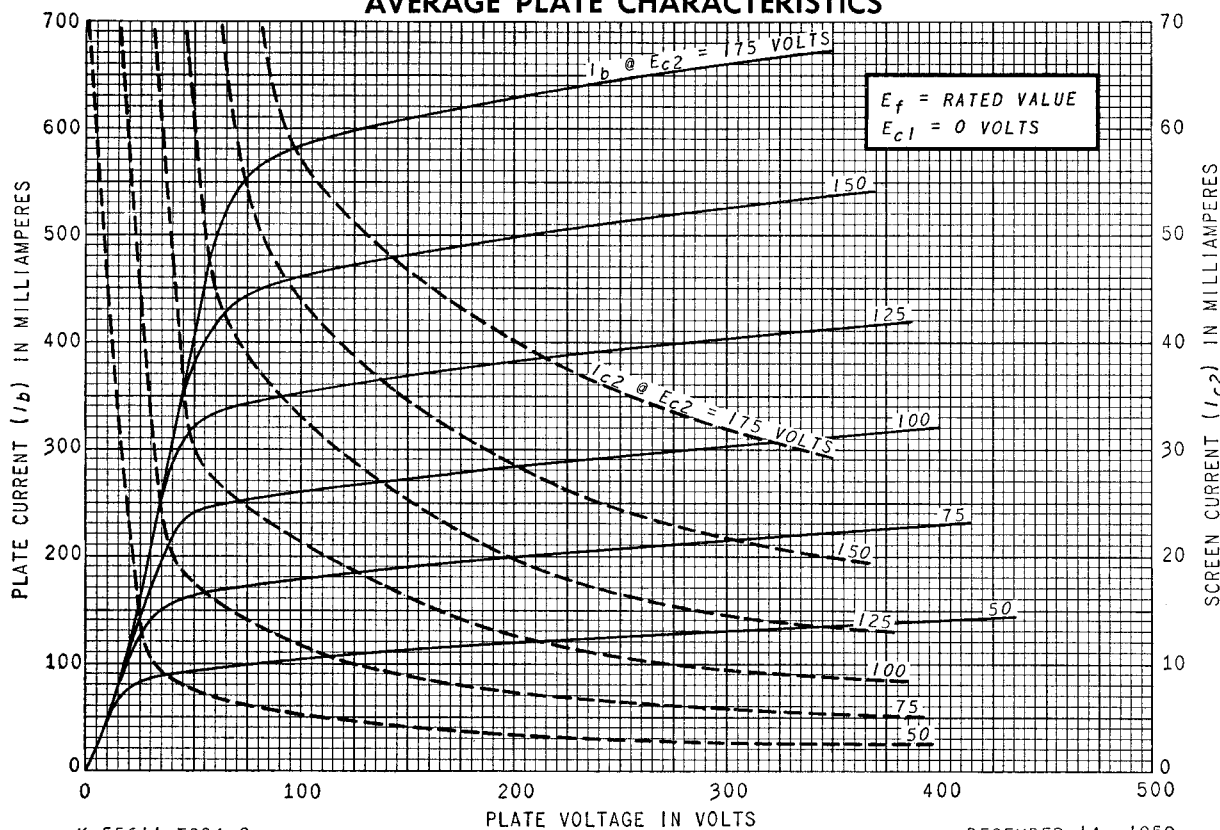
ϕ Applied for short interval (2 seconds maximum) so as not to damage tube.

**Triode connection (screen tied to plate) with $E_b = E_{c2} = 125$ volts and $E_{c1} = -18$ volts.

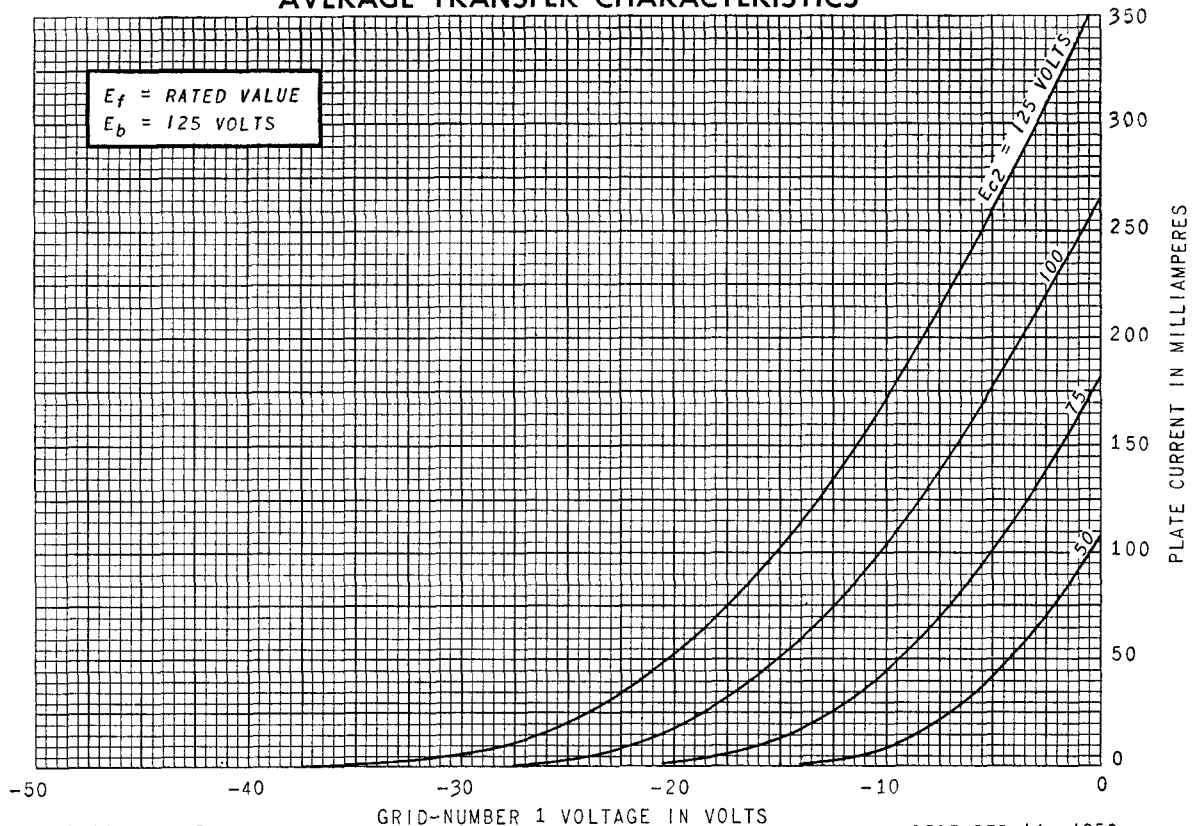
AVERAGE PLATE CHARACTERISTICS



AVERAGE PLATE CHARACTERISTICS

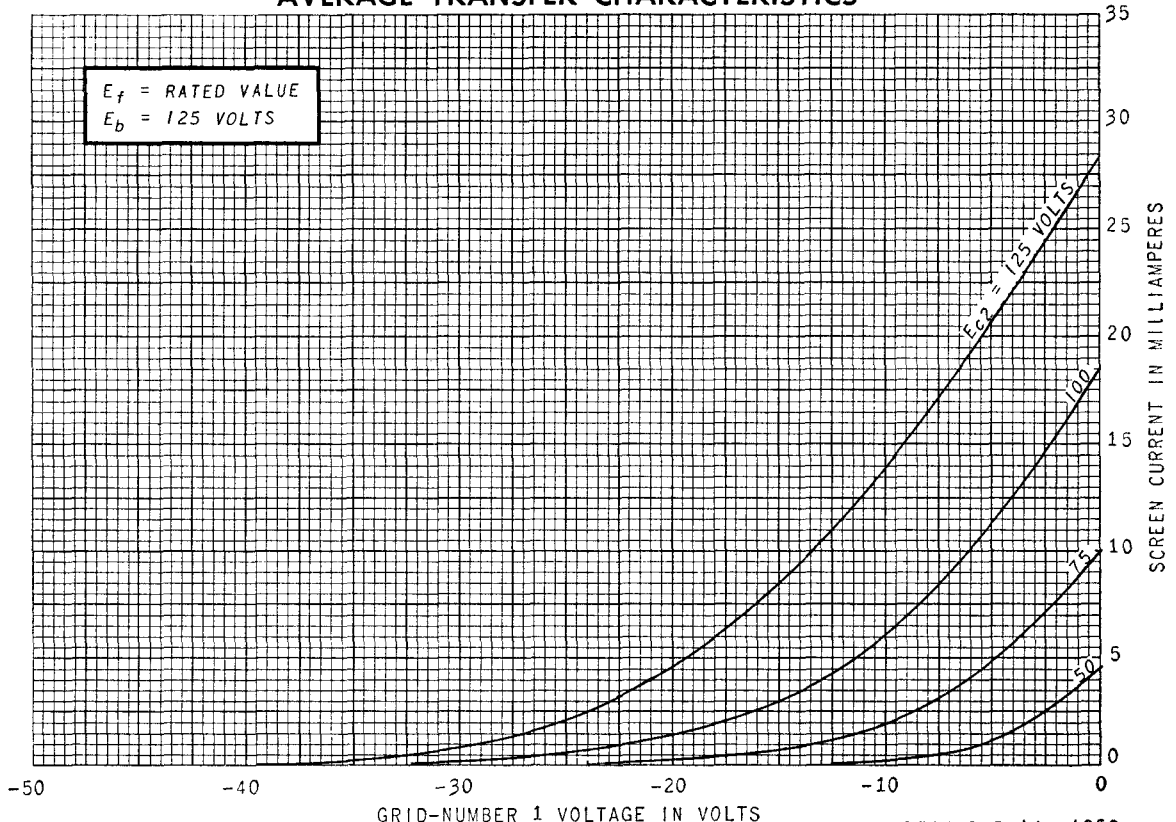


AVERAGE TRANSFER CHARACTERISTICS



DECEMBER 14, 1959

AVERAGE TRANSFER CHARACTERISTICS



DECEMBER 14, 1959

ELECTRONIC COMPONENTS DIVISION

GENERAL  **ELECTRIC**

Schenectady 5, N. Y.