

DESCRIPTION AND RATING

The 7EY6 is a beam-power pentode designed for use as the vertical-deflection amplifier in television receivers that employ 110-degree-deflection picture tubes. Features of the tube include high perveance and high plate dissipation. In addition, the 7EY6 incorporates a controlled heater warm-up characteristic which makes it especially suited for use in television receivers that employ series-connected heaters.

GENERAL

ELECTRICAL

Cathode—Coated Unipotential

Heater Voltage, AC or DC. 7.2 Volts

Heater Current. $0.6 \pm 6\%$ Amperes

Heater Warm-up Time*. 11 Seconds

Direct Interelectrode Capacitances, approximate†

Grid-Number 1 to Plate. 0.7 $\mu\mu\text{f}$

Input. 8.5 $\mu\mu\text{f}$

Output. 7.0 $\mu\mu\text{f}$

MECHANICAL

Mounting Position—Any

Envelope—T-9, Glass

Base—B6-81, Intermediate-Shell Octal 6-Pin

MAXIMUM RATINGS

VERTICAL-DEFLECTION AMPLIFIER SERVICE‡

DESIGN-MAXIMUM VALUES

DC Plate Voltage. 350 Volts

Peak Pulse Plate Voltage. 2500 Volts

Screen Voltage. 300 Volts

Plate Dissipation§. 11 Watts

Screen Dissipation§. 2.75 Watts

DC Cathode Current. 60 Milliamperes

Peak Cathode Current. 180 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 Cathode Bias. 2.2 Megohms

With Fixed Bias. 1.0 Megohms

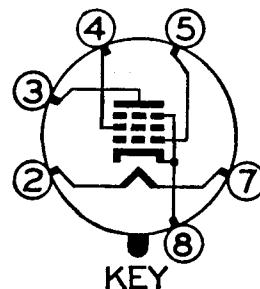
Bulb Temperature at Hottest Point. 200 C

Design-Maximum ratings are limiting values of operating and environmental conditions applicable to a bogey 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, taking responsibility for the effects of changes in operating conditions due to variations in tube characteristics.

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, and environmental conditions.

BASING DIAGRAM



KEY

EIA 7AC

TERMINAL CONNECTIONS

Pin 2—Heater

Pin 3—Plate

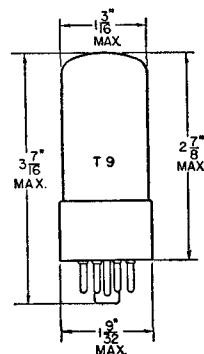
Pin 4—Grid Number 2
(Screen)

Pin 5—Grid Number 1

Pin 7—Heater

Pin 8—Cathode and Beam
Plates

PHYSICAL DIMENSIONS



EIA 9-15

CHARACTERISTICS AND TYPICAL OPERATION

AVERAGE CHARACTERISTICS

Plate Voltage	50	250	Volts
Screen Voltage	250	250	Volts
Grid-Number 1 Voltage	0†	−17.5	Volts
Plate Resistance, approximate	...	60000	Ohms
Transconductance	...	4400	Micromhos
Plate Current	153	44	Milliamperes
Screen Current	21	3.0	Milliamperes
Grid-Number 1 Voltage, approximate Ib = 100 Microamperes	...	−48	Volts

* 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.

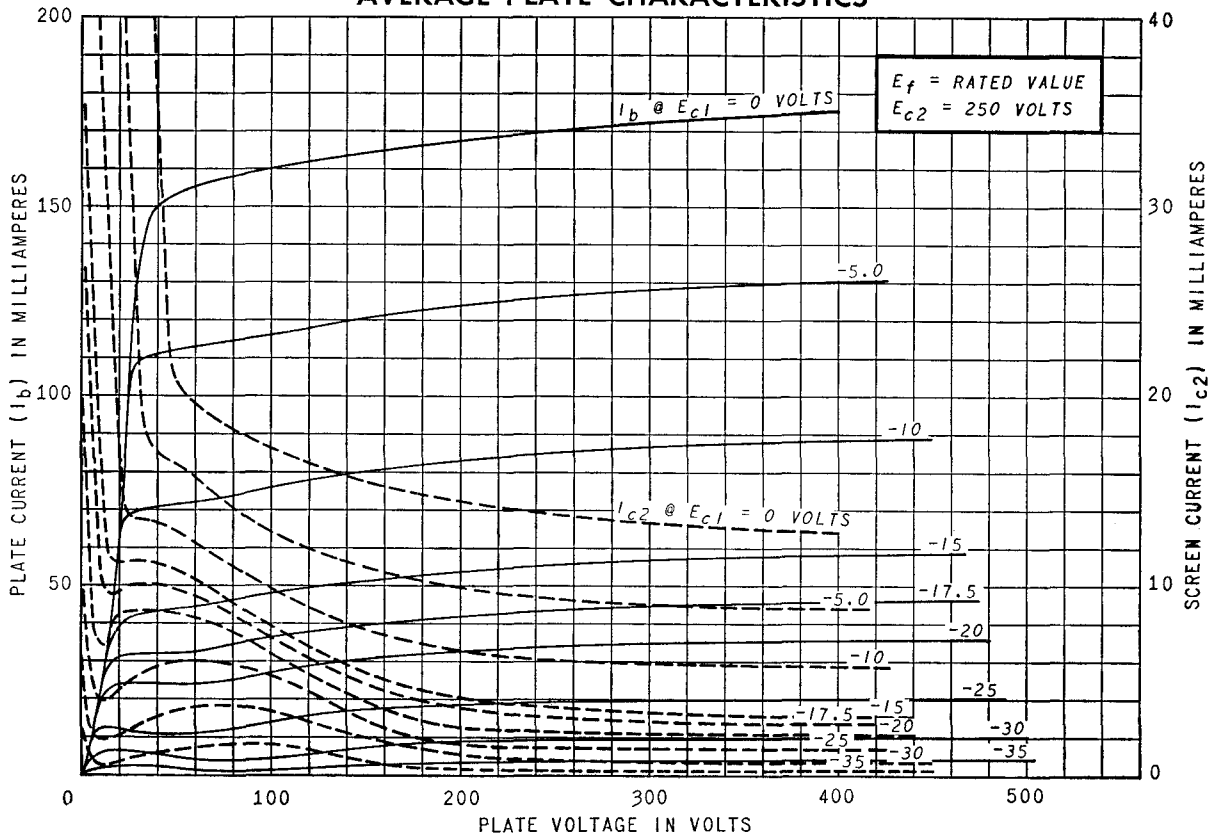
† Without external shield.

‡ 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.

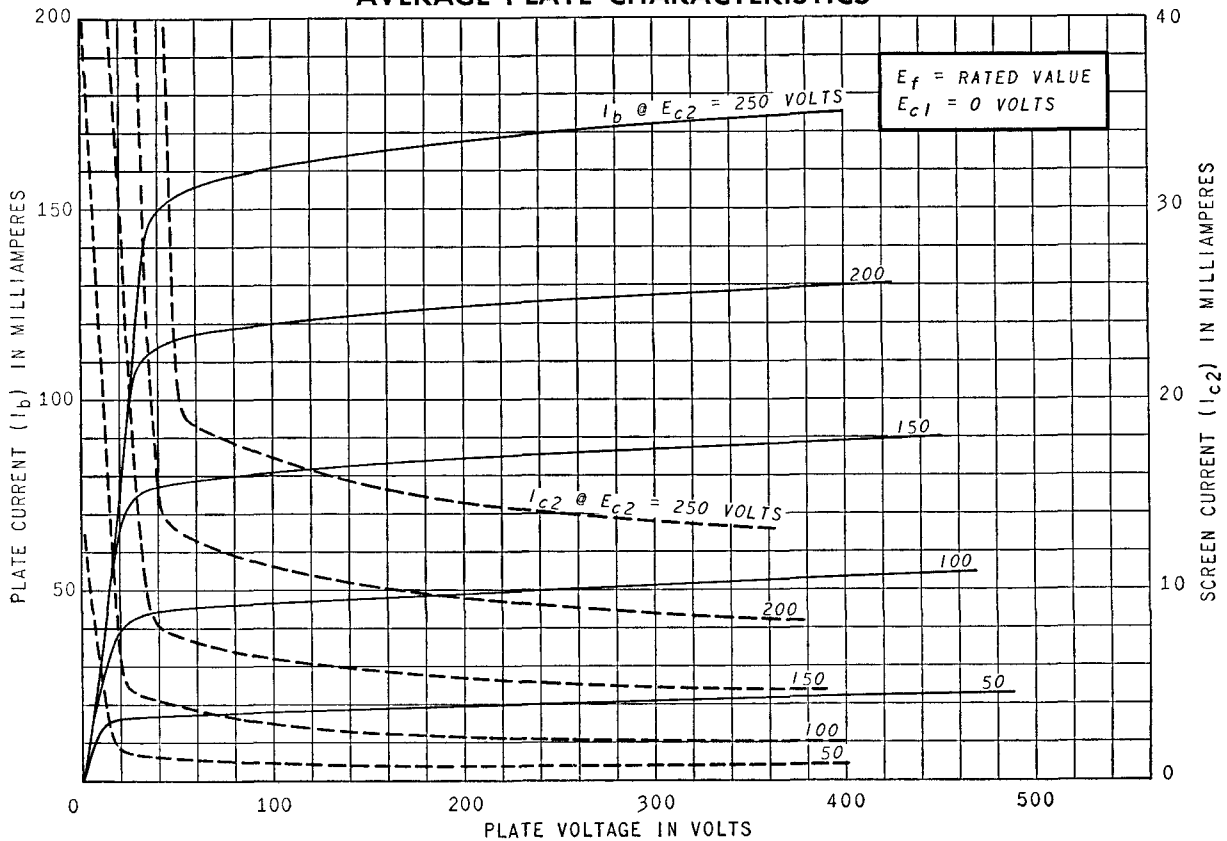
§ In stages operating with grid leak bias, an adequate cathode-bias resistor or other suitable means is required to protect the tube in the absence of excitation.

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

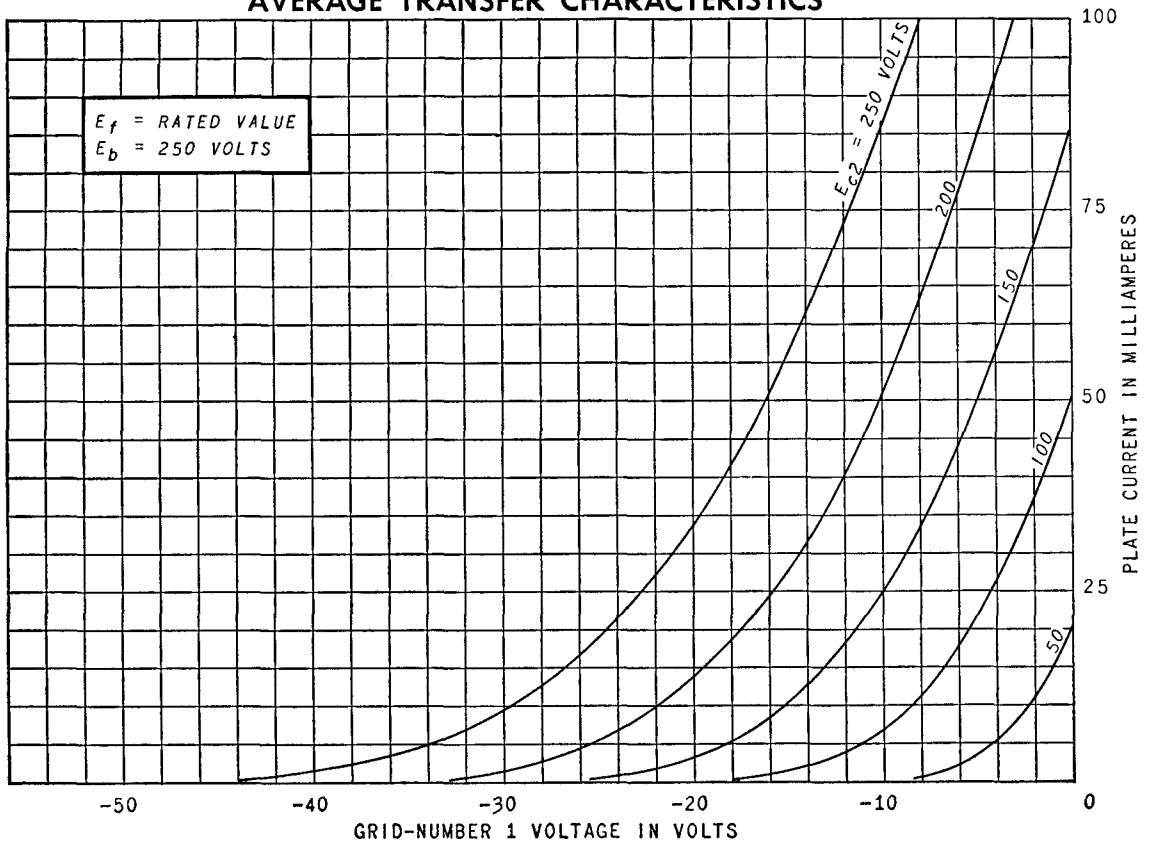
AVERAGE PLATE CHARACTERISTICS



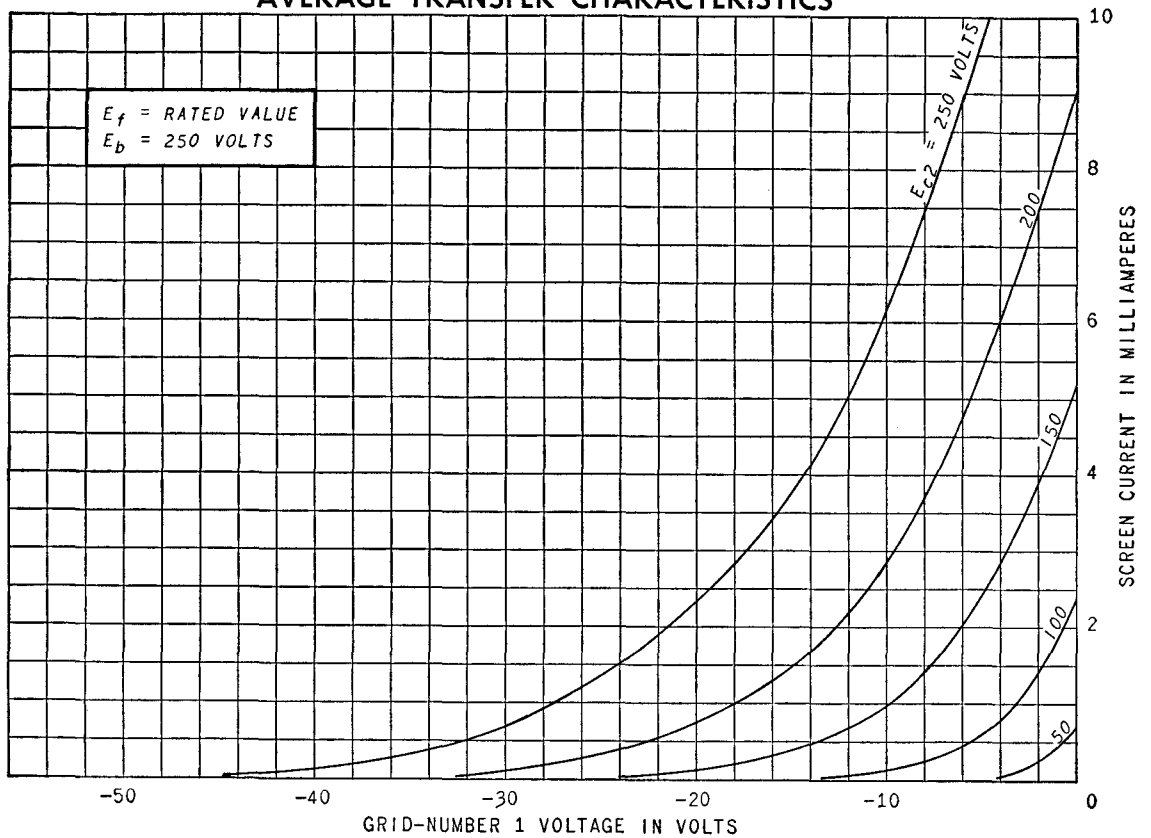
AVERAGE PLATE CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



AVERAGE TRANSFER CHARACTERISTICS



ELECTRONIC COMPONENTS DIVISION