



# 6DQ6-A—12DQ6-A—17DQ6-A

## BEAM PENTODE

FOR TV HORIZONTAL-DEFLECTION AMPLIFIER APPLICATIONS

6DQ6-A  
12DQ6-A  
17DQ6-A  
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### DESCRIPTION AND RATING

The 6DQ6-A is a beam-power pentode primarily designed for use as the horizontal-deflection amplifier in television receivers. Its high zero-bias plate current at low plate and screen voltages makes the tube well suited for use in receivers which operate at low plate-supply voltages.

Except for heater ratings, the 12DQ6-A and 17DQ6-A are identical to the 6DQ6-A. In addition, they incorporate a controlled heater warm-up characteristic which makes them especially suited for use in television receivers that employ series-connected heaters.

### GENERAL

#### ELECTRICAL

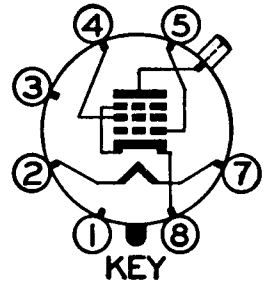
Cathode—Coated Unipotential	<b>6DQ6-A</b>	<b>12DQ6-A</b>	<b>17DQ6-A</b>	
Heater Voltage, AC or DC . . . . .	6.3	12.6	16.8	Volts
Heater Current . . . . .	1.2	0.6	0.45	Amperes
Heater Warm-up Time* . . . . .	..	11	11	Seconds
Direct Interelectrode Capacitances, approximate†				

Grid-Number 1 to Plate . . . . .	0.55	μμf
Input . . . . .	15	μμf
Output . . . . .	7.0	μμf

#### MECHANICAL

- Mounting Position—Any
- Envelope—T-12, Glass
- Base—B7-119, Short Medium-Shell Octal 7-Pin
- Top Cap—C1-3, Skirted Miniature

#### BASING DIAGRAM

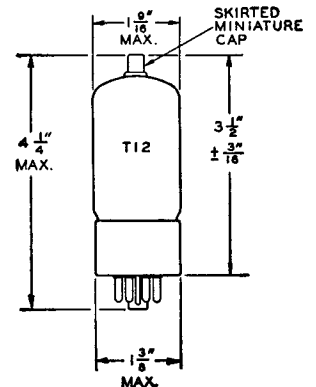


RETMA 6AM

#### TERMINAL CONNECTIONS

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

#### PHYSICAL DIMENSIONS



## 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 . . . . .	6000§	Volts
Peak Negative Pulse Plate Voltage . . . . .	1375	Volts
Screen Voltage . . . . .	200	Volts
Negative DC Grid-Number 1 Voltage . . . . .	50	Volts
Peak Negative Grid-Number 1 Voltage . . . . .	300	Volts
Plate Dissipation $\Delta$ . . . . .	15	Watts
Screen Dissipation . . . . .	3.0	Watts
DC Cathode Current . . . . .	140	Milliamperes
Peak Cathode Current . . . . .	440	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 . . . . .	1.0	Megohms
Bulb Temperature at Hottest Point . . . . .	220	C

## CHARACTERISTICS AND TYPICAL OPERATION

### AVERAGE CHARACTERISTICS

Plate Voltage . . . . .	60	250	Volts
Screen Voltage . . . . .	150	150	Volts
Grid-Number 1 voltage . . . . .	0¶	-22.5	Volts
Plate Resistance, approximate . . . . .		20000	Ohms
Transconductance . . . . .		6600	Micromhos
Plate Current . . . . .	300	75	Milliamperes
Screen Current . . . . .	27	2.4	Milliamperes
Grid-Number 1 Voltage, approximate			
I <sub>b</sub> = 1.0 Milliamperes . . . . .		-46	Volts
Triode Amplification Factor $\blacklozenge$ . . . . .		4.1	

\* 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.

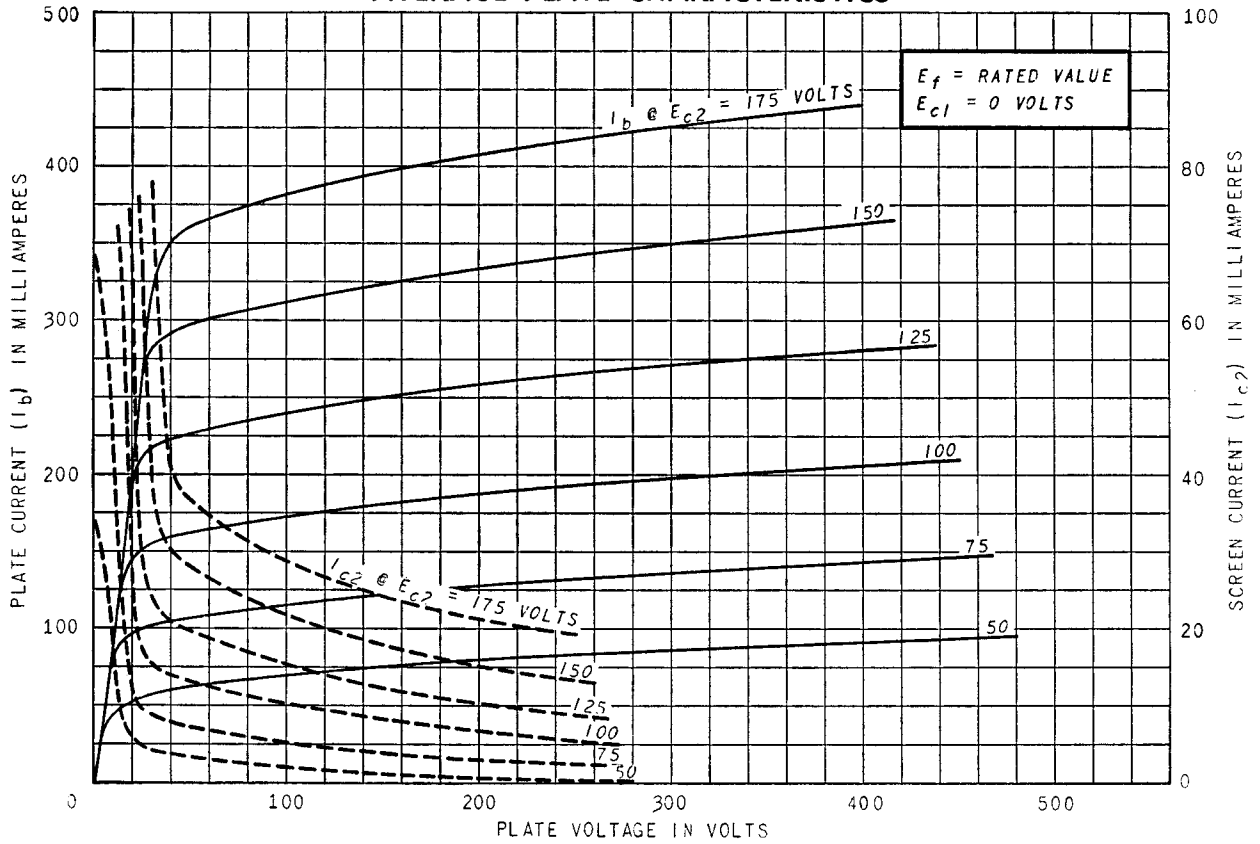
§ Value given is to be considered as an Absolute Maximum Rating. In this case, the combined effect of supply voltage variation, manufacturing variation including components in the equipment, and adjustment of equipment controls should not cause the rated value to be exceeded.

$\Delta$  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.

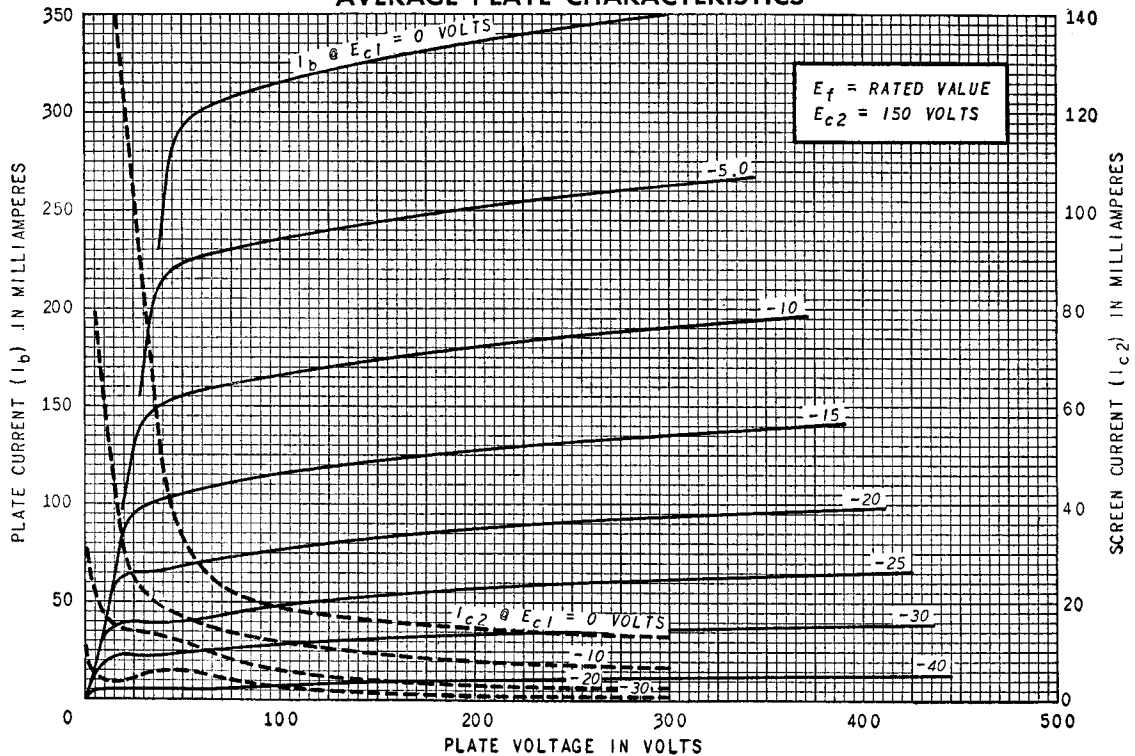
¶ Applied for short interval (2 seconds maximum) so as not to damage tube.

$\blacklozenge$  Triode connection (screen tied to plate) with E<sub>b</sub> = E<sub>c2</sub> = 150 volts, and E<sub>c1</sub> = -22.5 volts.

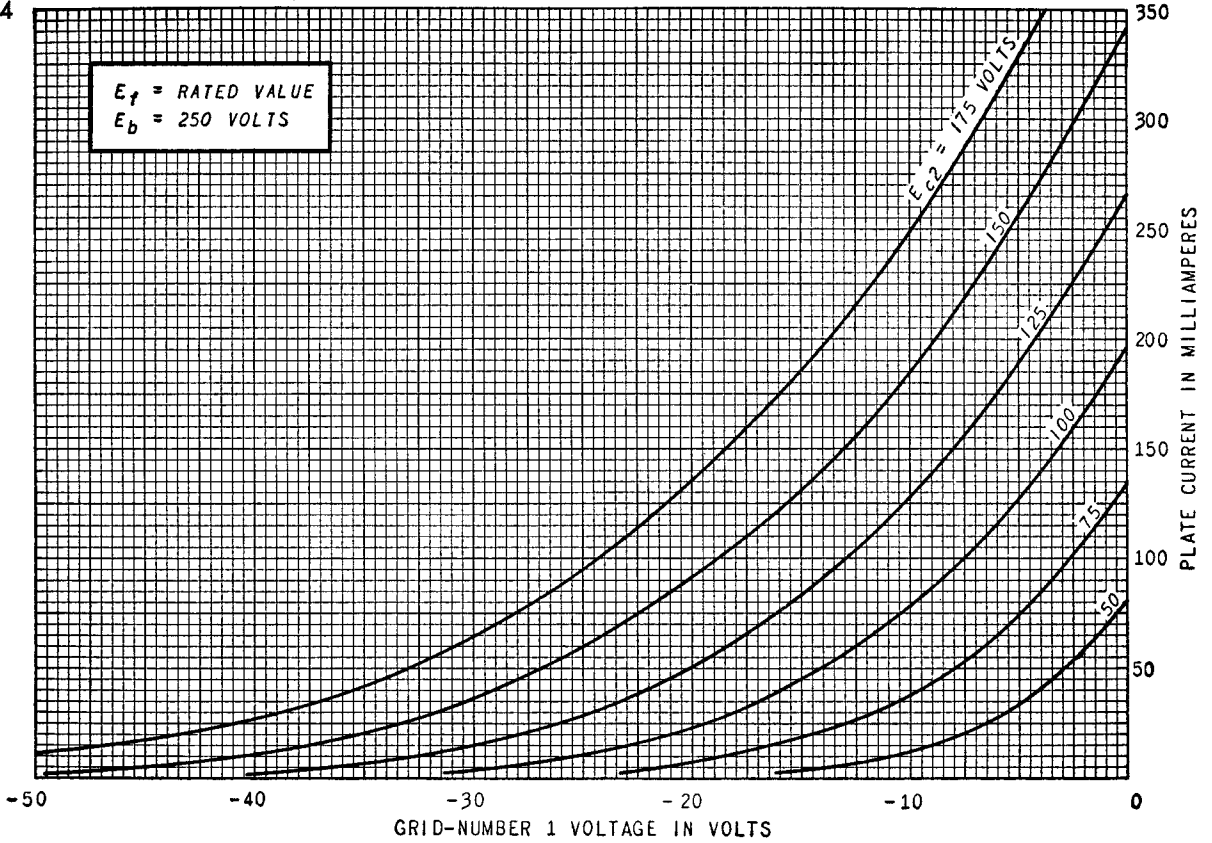
**AVERAGE PLATE CHARACTERISTICS**



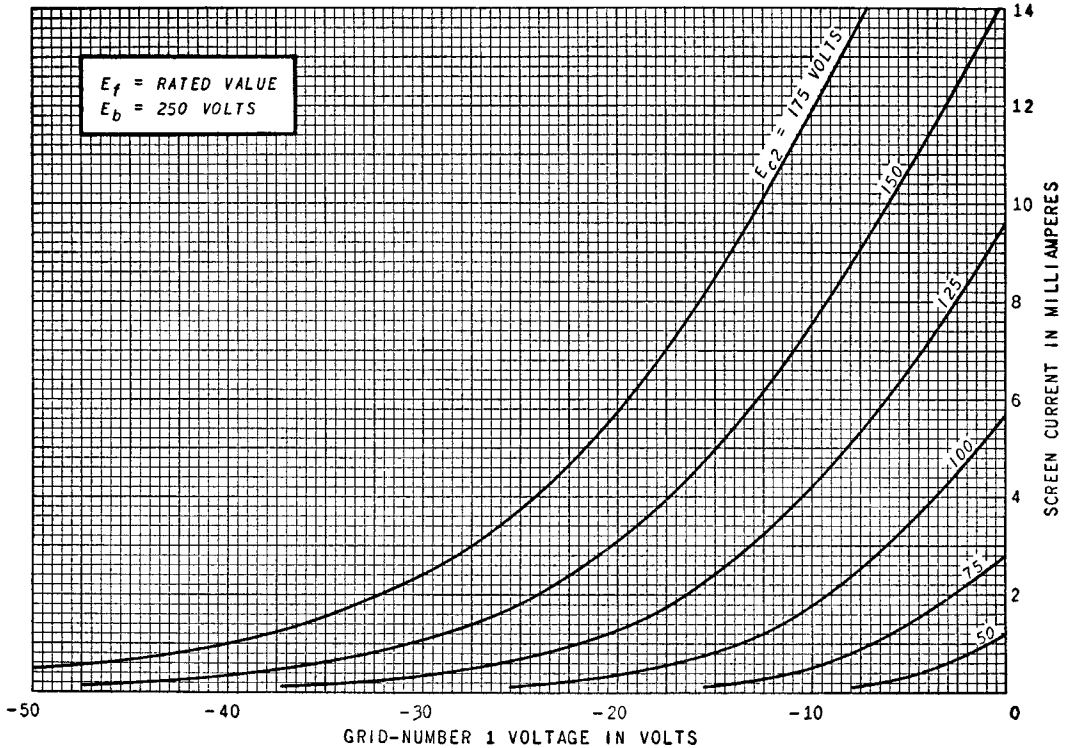
**AVERAGE PLATE CHARACTERISTICS**



### AVERAGE TRANSFER CHARACTERISTICS



### AVERAGE TRANSFER CHARACTERISTICS



ELECTRONIC COMPONENTS DIVISION



Schenectady 5, N. Y.