



# 6BQ6-GA—12BQ6-GA—25BQ6-GA

**6BQ6-GA**  
**12BQ6-GA**  
**25BQ6-GA**  
 ET-T837A  
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## BEAM PENTODE

FOR TV HORIZONTAL-DEFLECTION AMPLIFIER APPLICATIONS

### DESCRIPTION AND RATING

The 6BQ6-GA is a beam-power pentode designed primarily for use as horizontal-deflection amplifier in television receivers. The tube exhibits high permeance, high plate current at low plate and screen voltages, and a high ratio of plate to screen current.

Except for heater ratings, the 12BQ6-GA and 25BQ6-GA are identical to the 6BQ6-GA. In addition, the 12BQ6-GA features a controlled heater warm-up characteristic to make it especially suited for use in television receivers which employ 600-milliampere, series-connected heaters.

#### GENERAL

##### ELECTRICAL

	6BQ6-GA	12BQ6-GA	25BQ6-GA	
Cathode—Coated Unipotential				
Heater Voltage, AC or DC	6.3	12.6	25.0	Volts
Heater Current	1.2	0.6	0.3	Amperes
Heater Warm-up Time*	—	11	—	Seconds
Direct Interelectrode Capacitances†				
Grid-Number 1 to Plate		0.6		μμf
Input		15		μμf
Output		7.0		μμf

##### MECHANICAL

Mounting Position—Any  
 Envelope—T-11 or T-12, Glass  
 Base—B7-12, Medium Shell Octal 7-Pin or B7-111 or B7-119, Short Medium Shell Octal 7-Pin or B6-122, Short Medium Shell Octal 6-Pin.  
 Top Cap—C1-3 or C1-33, Skirted Miniature

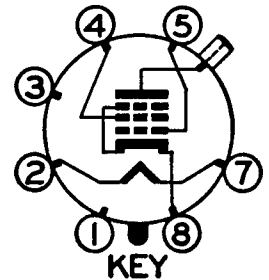
#### MAXIMUM RATINGS

##### HORIZONTAL-DEFLECTION AMPLIFIER SERVICE‡

##### DESIGN-CENTER VALUES UNLESS OTHERWISE INDICATED

DC Plate-Supply Voltage (Boost + DC Power Supply)	600	Volts
Peak Positive Pulse Plate Voltage	6000§	Volts
Peak Negative Pulse Plate Voltage	1250	Volts
Screen Voltage	200	Volts
Peak Negative Grid-Number 1 Voltage	300	Volts
Plate Dissipation Δ	11	Watts
Screen Dissipation	2.5	Watts
DC Cathode Current	110	Milliamperes
Peak Cathode Current	400	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	220	C

#### BASING DIAGRAM

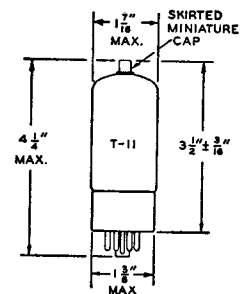


RTMA 6AM

#### 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
- Pin 1 omitted on Base Number B6-122.

#### PHYSICAL DIMENSIONS



T-11 Version

T-12 version is identical except that the maximum bulb diameter is  $1 \frac{1}{16}$  inches.

**GENERAL ELECTRIC**

Supersedes ET-T837, dated 2-54

## 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 . . . . .	—	14500	Ohms
Transconductance . . . . .	—	5900	Micromhos
Plate Current . . . . .	.260	57	Milliamperes
Screen Current . . . . .	.26	2.1	Milliamperes
Grid-Number 1 Voltage, approximate $I_b = 1.0$ Milliampere . . . . .	—	-43	Volts
Triode Amplification Factor** . . . . .	—	4.3	

\* 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.

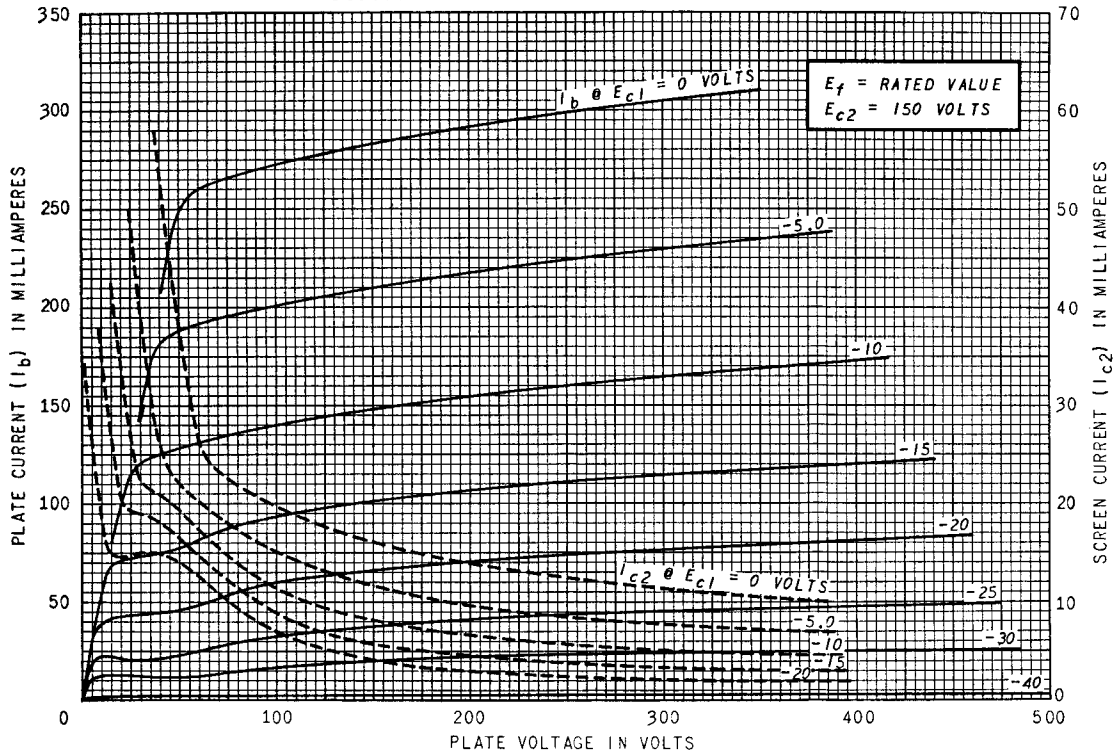
§ Value given is to be considered as an Absolute Maximum Rating. In this case, the combined effect of supply voltage variation, manufacturing variation including components in the equipment, and adjustment of equipment controls should not cause the rated value to be exceeded.

△ 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.

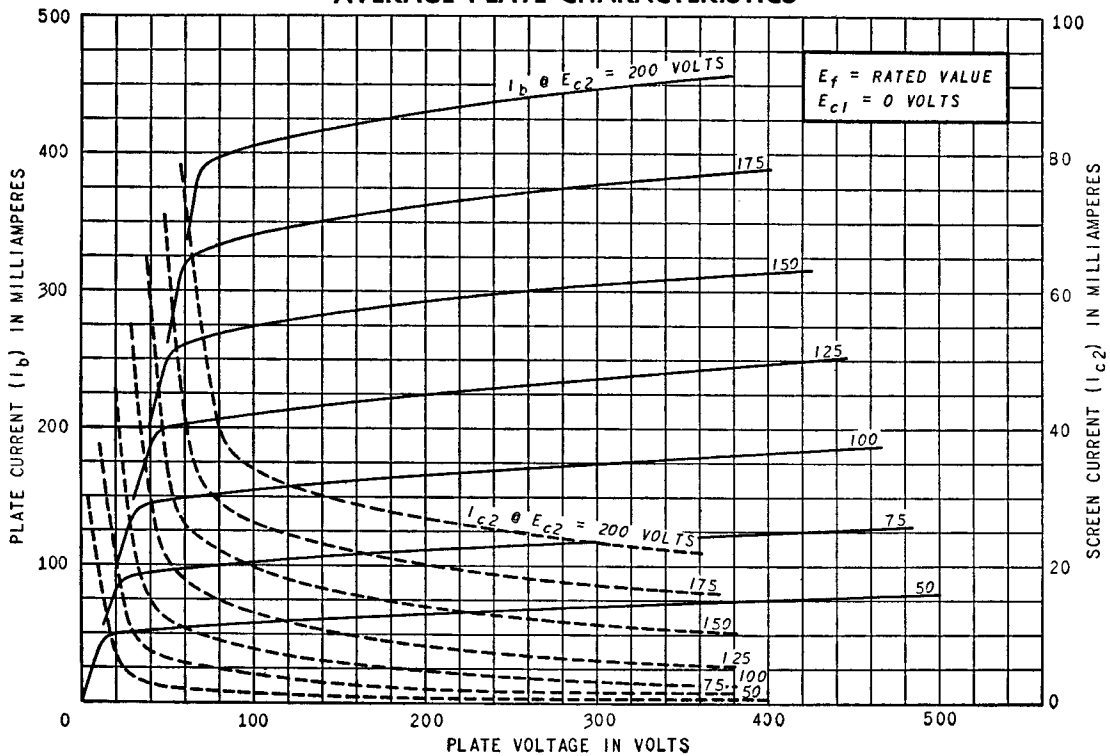
¶ Applied for short interval (two seconds maximum) so as not to damage tube.

\*\*Triode connection (screen tied to plate) with  $E_b = E_{c2} = 150$  volts and  $E_{c1} = -22.5$  volts.

**AVERAGE PLATE CHARACTERISTICS**



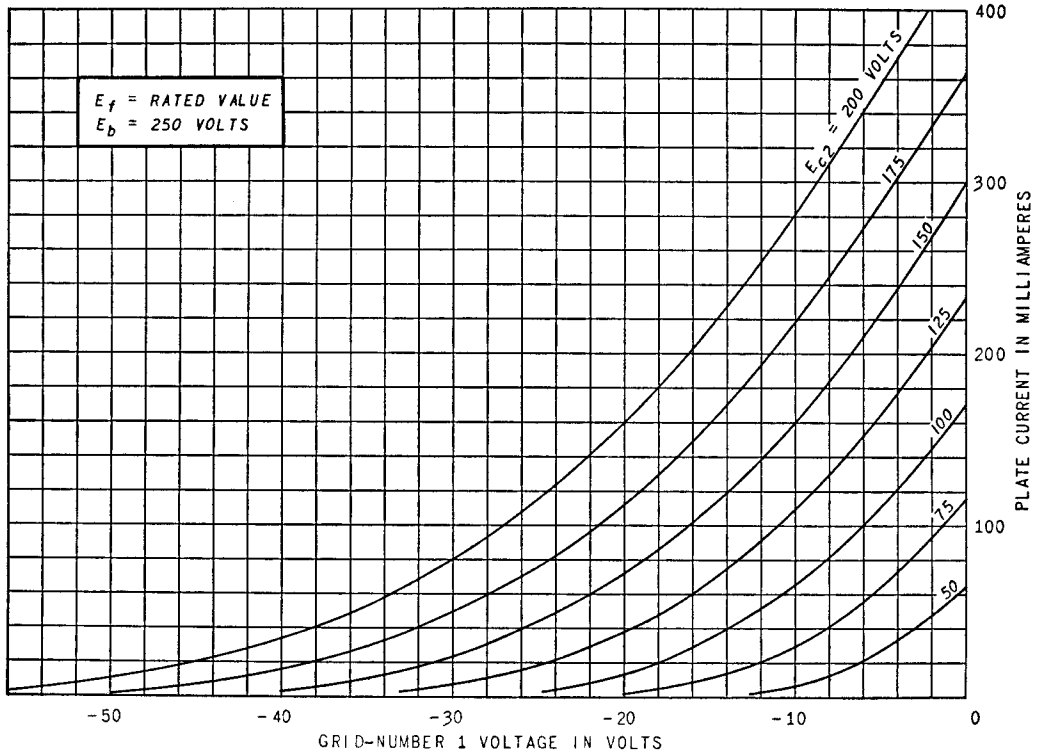
**AVERAGE PLATE CHARACTERISTICS**



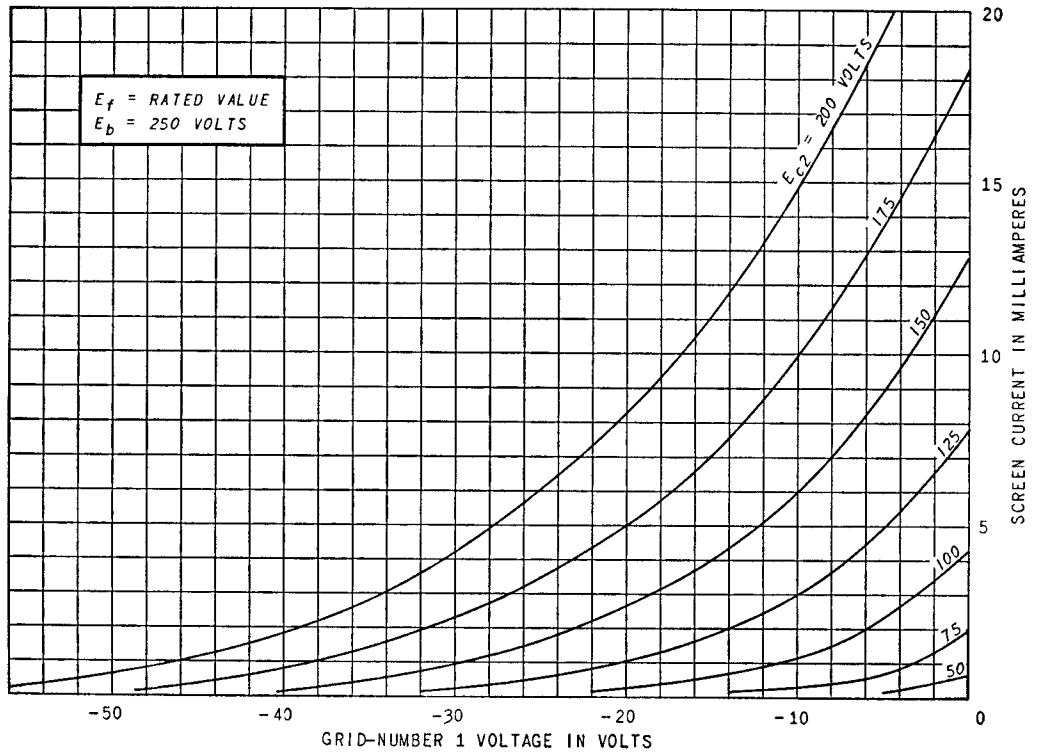
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**AVERAGE TRANSFER CHARACTERISTICS**



**AVERAGE TRANSFER CHARACTERISTICS**



**ELECTRONIC COMPONENTS DIVISION**



**Schenectady 5, N. Y.**