



5686

# BEAM POWER TUBE

9-PIN MINIATURE TYPE

For af or rf power-amplifier

applications at frequencies up to 160 Mc

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PREMIUM TYPE

## GENERAL DATA

### Electrical:

Heater, for Unipotential Cathode:

Voltage. . . . . 6.3 . . . . . ac or dc volts

Current. . . . . 0.35 . . . . . amp

Direct Interelectrode Capacitances:

	<i>Without External Shield</i>	<i>With External Shield<sup>o</sup></i>	
Grid No.1 to plate . . . . .	0.11 max.	0.08 max.	$\mu\mu\text{f}$
Grid No.1 to cathode & grid No.3, grid No.2, and heater.	6.4	6.5	$\mu\mu\text{f}$
Plate to cathode & grid No.3, grid No.2, and heater.	4	8.5	$\mu\mu\text{f}$

### Mechanical:

Operating Position . . . . . Any

Maximum Overall Length . . . . . 2-3/16"

Maximum Seated Length. . . . . 1-15/16"

Length, Base Seat to Bulb Top (Excluding tip). . . . . 1-9/16"  $\pm$  3/32"

Diameter . . . . . 0.750" to 0.875"

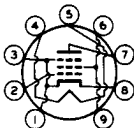
Dimensional Outline. . . . . See General Section

Bulb . . . . . T6-1/2

Base . . . . . Small-Button Noval 9-Pin (JEDEC No. E9-1)

Basing Designation for BOTTOM VIEW . . . . . 9G

- Pin 1 - Cathode,  
Grid No.3
- Pin 2 - Grid No.1
- Pin 3 - Cathode,  
Grid No.3
- Pin 4 - Heater



- Pin 5 - Heater
- Pin 6 - Grid No.2
- Pin 7 - Plate
- Pin 8 - Cathode,  
Grid No.3
- Pin 9 - Grid No.2

## AUDIO-FREQUENCY POWER AMPLIFIER — Class A<sub>1</sub>

### Maximum Ratings, Absolute Values:

PLATE VOLTAGE. . . . .	275 max.	volts
GRID-No.2 (SCREEN-GRID) VOLTAGE. . . . .	275 max.	volts
GRID-No.2 INPUT. . . . .	3.3 max.	watts
PLATE DISSIPATION. . . . .	8.25 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	100 max.	volts
Heater positive with respect to cathode.	100 max.	volts

### Typical Operation and Characteristics:

Plate Voltage. . . . .	250	volts
Grid-No.2 Voltage. . . . .	250	volts

<sup>o</sup>: See next page.



## BEAM POWER TUBE

Grid-No.1 (Control-Grid) Voltage . . . . .	-12.5	volts
Peak AF Grid-No.1 Voltage . . . . .	12.5	volts
Zero-Signal Plate Current . . . . .	27	ma
Zero-Signal Grid-No.2 Current . . . . .	3	ma
Plate Resistance (Approx.) . . . . .	45000	ohms
Transconductance . . . . .	3100	$\mu$ mhos
Load Resistance . . . . .	9000	ohms
Max.-Signal Power Output . . . . .	2.7	watts

**Maximum Circuit Values:**

## Grid-No.1-Circuit Resistance:

For fixed-bias operation . . . . .	0.1 max.	megohm
For cathode-bias operation . . . . .	0.5 max.	megohm

**RADIO-FREQUENCY POWER AMPLIFIER — Class C****Maximum Ratings, Absolute Values:**

PLATE VOLTAGE . . . . .	275 max.	volts
GRID-No.2 (SCREEN-GRID) VOLTAGE . . . . .	275 max.	volts
GRID-No.1 (CONTROL-GRID) VOLTAGE . . . . .	-165 max.	volts
PLATE CURRENT . . . . .	44 max.	ma
GRID-No.2 CURRENT . . . . .	16.5 max.	ma
GRID-No.1 CURRENT . . . . .	3.3 max.	ma
PLATE INPUT . . . . .	11 max.	watts
GRID-No.2 INPUT . . . . .	3.3 max.	watts
PLATE DISSIPATION . . . . .	8.25 max.	watts
<b>PEAK HEATER-CATHODE VOLTAGE:</b>		
Heater negative with respect to cathode.	100 max.	volts
Heater positive with respect to cathode.	100 max.	volts

**Typical Operation:***At frequencies up to 160 Mc*

Plate Voltage . . . . .	250	250	volts
Grid-No.2 Voltage . . . . .	180	250	volts
Grid-No.1 Voltage . . . . .	-30	-50	volts
From grid-No.1 resistor of . . . . .	15000	25000	ohms
Peak RF Grid-No.1 Voltage . . . . .	50	75	volts
Plate Current . . . . .	30	40	ma
Grid-No.2 Current (Approx.) . . . . .	6.5	10.5	ma
Grid-No.1 Current (Approx.) . . . . .	2	2	ma
RF Grid-No.1 Driving Power (Approx.) . . . . .	0.1	0.15	watt
Power Output (Approx.) . . . . .	5	6.5	watts
Useful Power Output at 125 Mc . . . . .	-	5.25	watts

**Maximum Circuit Values:**

Grid-No.1-Circuit Resistance . . . . .	50000 max.	ohms
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<sup>o</sup> With external shield JEDEC No.315 connected to cathode & grid No.3.



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**BEAM POWER TUBE****SPECIAL RATINGS & PERFORMANCE DATA****Shock Rating:**

This test is performed on a sample lot of tubes from each production run. Tubes are held rigid and are subjected in four different positions to an impact acceleration of 450 g.

**Fatigue Rating:**

This test is performed on a sample lot of tubes from each production run. Tubes are rigidly mounted and subjected to 2.5 g vibrational acceleration at a fixed frequency of 25 cycles per second for 100 hours in each of three positions.

**Heater-Cycling Life Performance:**

This test is performed on a sample lot of tubes from each production run. Tubes will withstand a minimum of 2000 cycles of intermittent operation under the following conditions: heater volts = 7.5 cycled one minute on and one minute off, heater 100 volts positive with respect to cathode, and all other elements connected to ground.