5686

BEAM POWER TUBE

9-PIN MINIATURE TYPE

For af or rf power-amplifier applications at frequencies up to 160 Mc

5686 PREMIUM TYPE

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage	6.3	ac or dc volts
Current	0.35	amp

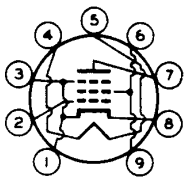
Direct Interelectrode Capacitances:

	Without External Shield	*With External Shield°*	
Grid No.1 to plate	0.11 max.	0.08 max.	μμf
Grid No.1 to cathode & grid No.3, grid No.2, and heater.	6.4	6.5	μμf
Plate to cathode & grid No.3, grid No.2, and heater.	4	8.5	μμf

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" ± 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_1

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

°: See next page.

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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	μmhos
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
PEAK HEATER-CATHODE VOLTAGE:		
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

[o] With external shield JEDEC No.315 connected to cathode & grid No.3.

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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.

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