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6669/6AQ5-A BEAM POWER TUBE

7-PIN MINIATURE TYPE

For use in mobile communications equipment

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage 6.3 ± 20%* ac or dc volts
Current at 6.3 volts. 0.45 amp

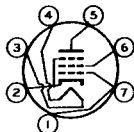
Direct Interelectrode Capacitances (Approx.):⁰

Grid No.1 to plate. 0.4 μf
Grid No.1 to cathode & grid No.3,
grid No.2, and heater 8 μf
Plate to cathode & grid No.3,
grid No.2, and heater 8.5 μf

Mechanical:

Operating Position. Any
Maximum Overall Length. 2-5/8"
Maximum Seated Length 2-3/8"
Length, Base Seat to Bulb Top (Excluding tip). 2" ± 3/32"
Diameter. 0.650" to 0.750"
Dimensional Outline See General Section
Bulb. T5-1/2
Base. Small-Button Miniature 7-Pin (JEDEC No.E7-1)
Basing Designation for BOTTOM VIEW. 7BZ

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



Pin 4-Heater
Pin 5-Plate
Pin 6-Grid No.2
Pin 7-Grid No.1

AMPLIFIER — Class A₁

Maximum Ratings, Design-Maximum Values:

PLATE VOLTAGE 250 max. volts
GRID-No.2 (SCREEN-GRID) VOLTAGE 250 max. volts
GRID-No.2 INPUT 2 max. watts
PLATE DISSIPATION 12 max. watts
PEAK HEATER-CATHODE VOLTAGE:
Heater negative with respect to cathode. 100 max. volts
Heater positive with respect to cathode. 100 max. volts
BULB TEMPERATURE (At hottest point
on bulb surface). 225 max. °C

Typical Operation and Characteristics:

Heater Voltage. 6.3 volts
Plate Voltage 250 volts
Grid-No.2 Voltage 250 volts
Grid-No.1 (Control-grid) Voltage. -12.5 volts
Peak AF Grid-No.1 Voltage 12.5 volts

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Zero-Signal Plate Current	45	ma
Max.-Signal Plate Current	47	ma
Zero-Signal Grid-No.2 Current	4.5	ma
Max.-Signal Grid-No.2 Current	7	ma
Plate Resistance (Approx.)	52000	ohms
Transconductance	4100	μ mhos
Load Resistance	5000	ohms
Total Harmonic Distortion	8	%
Max.-Signal Power Output	4.5	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

AMPLIFIER — Class AB₁**Maximum Ratings, Design-Maximum Values:**

PLATE VOLTAGE	250 max.	volts
GRID-No.2 (SCREEN-GRID) VOLTAGE	250 max.	volts
GRID-No.2 INPUT	2 max.	watts
PLATE DISSIPATION	12 max.	watts
PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode.	100 max.	volts
Heater positive with respect to cathode.	100 max.	volts
BULB TEMPERATURE (At hottest point on bulb surface)		
	225 max.	$^{\circ}$ C

Typical Push-Pull Operation:*Unless otherwise specified, values are for 2 tubes*

Heater Voltage	6.3	volts
Plate Voltage	250	volts
Grid-No.2 Voltage	250	volts
Grid-No.1 (Control-grid) Voltage	-15	volts
Peak AF Grid-No.1-to-Grid-No.1 Voltage	30	volts
Zero-Signal Plate Current	70	ma
Max.-Signal Plate Current	79	ma
Zero-Signal Grid-No.2 Current	5	ma
Max.-Signal Grid-No.2 Current	13	ma
Effective Load Resistance (Plate to plate)	10000	ohms
Total Harmonic Distortion	5	%
Max.-Signal Power Output	10	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

* When the heater is operated from storage-battery-with-charger supply or similar supplies, the normal battery-voltage fluctuation may be as much as 35 per cent or more. Although such variation in heater voltage is permissible for short periods, reliability can be increased with improved supply-voltage regulation.



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0 Without external shield.

SPECIAL RATINGS & PERFORMANCE DATA

Heater-Cycling Life Performance:

This test is performed on a sample lot of tubes from each production run. A minimum of 2000 cycles of intermittent operation is applied under the following conditions: heater volts = 7.5 cycled one minute on and one minute off, heater 135 volts positive with respect to cathode, and all other elements connected to ground. At the end of this test, tubes are checked for heater-cathode shorts and open circuits.

Power Output at Reduced Heater Voltage:

Average Value. 4.1 watts
With heater volts = 5, plate volts = 250, grid-No.2 volts = 250, grid-No.1 volts = -12.5, rms signal volts = 8.8, and load resistance (ohms) = 5000.