

ELECTRONIC TUBE REFERENCE

7007

Power - Beam (NOT sweep) (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
BEAMPOWER

Forced-air-cooled ceramic-metal coaxial beam-power transmitting tube for high-power RF and television service, capable of multi-kilowatt output to approximately 220 MHz.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	5 V / 168 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Beam Power	
AMPLIFICATION FACTOR	10
MAXIMUM PLATE VOLTAGE	25000 V
MAXIMUM SCREEN VOLTAGE	2000 V
MAXIMUM PLATE DISSIPATION	12000 W
MAXIMUM CATHODE CURRENT	50 A
Representative electrical section from supplied RCA data sheet.	

High-power beam-power tube for RF, pulse, or transmitting service. The supplied datasheet was reviewed for heater/filament data, maximum ratings, operating conditions, capacitances, pulse/RF data, and thermal limits.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

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Published test conditions and operating points. Values on this page are preserved as reported by this source.

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Section 1 · Beam Power

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
12-KW PLATE DISSIPATION IN CW OR TV SERVICE UP TO 220 Mc – published value 1	12 MHz	CW
12-KW PLATE DISSIPATION IN CW OR TV SERVICE UP TO 220 Mc – published value 2	220 MHz	CW
Voltage (AC or DC)• – published value 1	5	Published datasheet value
Voltage (AC or DC)• – published value 2	5	Published datasheet value
Current at heater volts = 5 – published value 1	5 A	Published datasheet value
Current at heater volts = 5 – published value 2	168 A	Published datasheet value
Cold resistance – published value 1	0 ohm	Published datasheet value
Cold resistance – published value 2	38 ohm	Published datasheet value
for plate volts = 2000, grid-No.2	2000	Published datasheet value
volts = 1000, and plateamperes= 2 – published value 1	1000 A	Published datasheet value
volts = 1000, and plateamperes= 2 – published value 2	2 A	Published datasheet value
volts = 1000, and plateamperes= 2 – published value 3	10 A	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to filament	42 pF	Published datasheet value
Grid No.1 to grid No 2 – published value 1	2 pF	Published datasheet value
Grid No.1 to grid No 2 – published value 2	65 pF	Published datasheet value
Grid No.2 to plate	22 pF	Published datasheet value
temperature of 45° C for various plate dissipations, as	45	Published datasheet value
Minimum air flow – published value 1	550 cfm	Published datasheet value
Minimum air flow – published value 2	350 cfm	Published datasheet value
Minimum air flow – published value 3	230 cfm	Published datasheet value
Minimum air flow – published value 4	175 cfm	Published datasheet value
To grid -Xo.2 terminal	50 cfm	Published datasheet value
and filament terminals	50 cfm	Published datasheet value
DC Plate Voltage	5800	Published datasheet value
DC Grid-No.2 Voltage	1200	Published datasheet value
DC Grid-No.1 Voltage	-130	Published datasheet value
DC Grid-No.2 Current (Pedestal Level)	207 mA	Published datasheet value
DC Plate-to-Grid-No.1 Voltage	6400	Published datasheet value
DC Grid-No.2-to-Grid-No.1 Voltage	800	Published datasheet value
DC Cathode-to-Grid-No.1 Voltage	90	Published datasheet value
DC Grid-No.2 Current (Pedestal Level)	175 mA	Published datasheet value
Peak RF Grid-No.1 Voltage	375	Published datasheet value
OC Grid-No.2 Current (Pedestal Level)	148 mA	Published datasheet value
DC Plate Voltage	7000	Published datasheet value
DC Grid-No.1 Voltage'	-125	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Zero-Signal DC Plate Current	200 mA	Published datasheet value
Zero-Signal DC Grid-No.2 Current	0 mA	Published datasheet value
Effective RF Load Resistance	1350 ohm	Published datasheet value
DC Plate Voltage	4800	Published datasheet value
DC Grid-No.2 Voltage (Modulated 100%1' – published value 1	100	Published datasheet value
DC Grid-No.2 Voltage (Modulated 100%1' – published value 2	1	Published datasheet value
DC Grid-No.2 Voltage (Modulated 100%1' – published value 3	800	Published datasheet value
DC Grid-No.1 Voltage	-300	Published datasheet value
Peak RF Grid-No.1 Voltage	550	Published datasheet value
DC Plate Current	1.8 A	Published datasheet value
DC Grid-No.2 Current	160 mA	Published datasheet value
DC Grid-No.1 Current (Approx	180 mA	Published datasheet value
Driver Power Output (Approx.)	125 W	Published datasheet value
Useful Power Output (Approx.)	6000 W	Published datasheet value
DC GRID-No.1 VOLTAGE	-1 A	Published datasheet value
DC Plate Voltage – published value 1	6600	Published datasheet value
DC Plate Voltage – published value 2	7000	Published datasheet value
DC Grid-No.2 Voltage° – published value 1	1200	Published datasheet value
DC Grid-No.2 Voltage° – published value 2	1200	Published datasheet value
DC Grid-No.1 Voltage – published value 1	-310	Published datasheet value
DC Grid-No.1 Voltage – published value 2	-310	Published datasheet value
Peak RF Grid-No.1 Voltage – published value 1	560	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak RF Grid-No.1 Voltage – published value 2	560	Published datasheet value
DC Plate Current – published value 1	2.75 A	Published datasheet value
DC Plate Current – published value 2	2.75 A	Published datasheet value
DC Grid-No.2 Current – published value 1	300 mA	Published datasheet value
DC Grid-No.2 Current – published value 2	300 mA	Published datasheet value
DC Grid-No.1 Current (Approx. 1 – published value 1	140 mA	Published datasheet value
DC Grid-No.1 Current (Approx. 1 – published value 2	140 mA	Published datasheet value
Driver Power Output (Approx.)!t – published value 1	95 W	Published datasheet value
Driver Power Output (Approx.)!t – published value 2	750 W	Published datasheet value

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.1 to plate	0.6 mA	Published datasheet value
Plate to filament	0.08 mA	Published datasheet value
Incoming-Air Temperature	50 mA	Published datasheet value
No.2, and plate	180 mA	Published datasheet value
DC PLATE VOLTAGE	7.5 A	Published datasheet value
DC GRID-No.2 VOLTAGE	2 A	Published datasheet value
DC PLATE CURRENT	4 mA	Published datasheet value
PLATE INPUT	24 A	Published datasheet value
GRID-No.2 INPUT	400 mA	Published datasheet value
PLATE DISSIPATION	12 A	Published datasheet value
GRID-No.1 DISSIPATION	300 mA	Published datasheet value
Typical Operation in Grid-Drive Circuit at 216 Mc	216 MHz	GridDrive

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Typical Operation in Cathode-Drive Circuit at 216 Mc	216 MHz	Published datasheet value
GRID-No.1 DISSIPATION	300 mA	Published datasheet value
Typical Operation in Grid-Drive Circuit at 216 Nc	216	GridDrive
MAX.-SIGNAL DC PLATE CURRENT	2.8 mA	Published datasheet value
MAX.-SIGNAL DC GRID-No.1 CURRENT	0.6 mA	Published datasheet value
MAX.-SIGNAL PLATE INPUT	20 A	Published datasheet value
MAX.-SIGNAL GRID-No.2 INPUT	400 mA	Published datasheet value
Max.-Signal DC Plate Current	2.75 A	Published datasheet value
Max.-Signal DC Grid-No.2 Current – published value 1	0 mA	Published datasheet value
Max.-Signal DC Grid-No.2 Current – published value 2	26 A	Published datasheet value
Max.-Signal DC Grid-No.1 Current	80 mA	Published datasheet value
Max.-Signal Peak RF Grid-No.1 Voltage	305	Published datasheet value
Max.-Signal Power Output (Approx)	12000 W	Published datasheet value
DC PLATE VOLTAGE	5.5 A	Published datasheet value
DC GRID-No.1 VOLTAGE	-1 A	Published datasheet value
DC PLATE CURRENT	2 mA	Published datasheet value
DC GRID-No.1 CURRENT	0.6 mA	Published datasheet value
PLATE INPUT	10 A	Published datasheet value
GRID-No.2 INPUT	270 mA	Published datasheet value
PLATE DISSIPATION	8 A	Published datasheet value
DC PLATE CURRENT	3 mA	Published datasheet value
PLATE INPUT	20 A	Published datasheet value