



ELECTRONIC TUBE REFERENCE

4616

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

CONSOLIDATED TECHNICAL
DATA

1 SECTION
CONSTRUCTION
BEAMPOWER

RCA high-power beam-power transmitting tube for RF, pulse, modulation, and related transmitter service, with 30000-watt maximum plate dissipation and application-specific operating limits.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	0.95 V / 495 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Beam Power	
AMPLIFICATION FACTOR	7
MAXIMUM PLATE VOLTAGE	25000 V
MAXIMUM SCREEN VOLTAGE	2200 V
MAXIMUM PLATE DISSIPATION	30000 W
MAXIMUM CATHODE CURRENT	2.5 A
<i>Published maximum ratings/general electrical characteristics promoted directly; pulse, RF, capacitance, cooling, and service-specific values retained in TUBE_SECTION_PARAMETER.</i>	

High-power beam power tube for RF, pulse, modulation, or transmitting service. The RCA source was reviewed for heater/filament data, maximum ratings, RF and pulse operating conditions, capacitances, cooling requirements, and application-specific 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

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Maximum plate voltage	25000 V	PromotedValue
Maximum screen-grid voltage	2200 V	PromotedValue
Maximum plate dissipation	30000 W	PromotedValue
Maximum cathode/plate current	2.5 A	PromotedValue
Grid No.i to plate – published value 1	0 mA	Published datasheet value
Grid No.i to plate – published value 2	15 mA	Published datasheet value
capacitors)	18 A	Published datasheet value
Ceramic-Insulator Temperature	150 mA	Published datasheet value
Metal -Surface Temperature	100 mA	Published datasheet value
Water Temperature from any outlet	70 mA	Published datasheet value
In Class B service at 425 A1Hz with a rectangular waveshape pulse	425	Pulse; ClassB

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Mu / amplification factor	7	PromotedValue
Heater/filament voltage	0.95 V	Nominal operating value
Heater/filament current	495 A	Nominal operating value
2-MW SHORT-PULSE POWER, 275-kW LONG-PULSE POWER – published value 1	2	Pulse

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
2-MW SHORT-PULSE POWER, 275- kW LONG-PULSE POWER – published value 2	275	Pulse
For RF-Pulse Power Amplifier at Frequencies from 195 to 600 MRz – published value 1	195 A	Pulse
For RF-Pulse Power Amplifier at Frequencies from 195 to 600 MRz – published value 2	600 A	Pulse
voltage	30 V	Published datasheet value
voltage before other voltages are appl ied	90 V	Published datasheet value
Mu-Factor, Grid No.2 to Grid No 1 – published value 1	1	Published datasheet value
Mu-Factor, Grid No.2 to Grid No 1 – published value 2	7	Published datasheet value
Grid No.1 to grid No.2 and cathode	500 pF	Published datasheet value
Plate to cathode and grid No 2 – published value 1	2 pF	Published datasheet value
Plate to cathode and grid No 2 – published value 2	30 pF	Published datasheet value
Minimum Storage Temperatures	-65 degC	Published datasheet value
Through filament block – published value 1	1.2	Published datasheet value
Through filament block – published value 2	0.8	Published datasheet value
Through filament block – published value 3	18	Published datasheet value
Through grid-No.1 block – published value 1	1.2	Published datasheet value
Through grid-No.1 block – published value 2	0.8	Published datasheet value
Through grid-No.1 block – published value 3	14	Published datasheet value
Peak Positive-Pulse Plate Voltaged	55000 V	Pulse
DC Plate Voltagee	25 V	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Positive-Pulse Grid-No.2 Voltage f'9 – published value 1	9000 V	Pulse
Peak Positive-Pulse Grid-No.2 Voltage f'9 – published value 2	2200 V	Pulse
Peak Positive-Pulse Grid-No.2 Voltage f'9 – published value 3	2200 V	Pulse
DC or Peak Negative-Pulse Grid-No. 1 Voltage – published value 1	400 V	Pulse
DC or Peak Negative-Pulse Grid-No. 1 Voltage – published value 2	400 V	Pulse
Peak Plate Current – published value 1	80	Published datasheet value
Peak Plate Current – published value 2	30	Published datasheet value
Peak Grid-No.2 Current – published value 1	15	Published datasheet value
Peak Grid-No.2 Current – published value 2	2	Published datasheet value
Peak Rectified Grid-No. 1 Current – published value 1	15	Published datasheet value
Peak Rectified Grid-No. 1 Current – published value 2	2	Published datasheet value
DC Plate Current – published value 1	0.32	Published datasheet value
DC Plate Current – published value 2	2.5	Published datasheet value
DC Grid-No.2 Current – published value 1	0.06	Published datasheet value
DC Grid-No.2 Current – published value 2	0.2	Published datasheet value
DC Grid-No. 1 Current – published value 1	0.06	Published datasheet value
DC Grid-No. 1 Current – published value 2	0.2	Published datasheet value
Plate Input (Average)	70000 W	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Plate Dissipation (Average) – published value 1	8000 W	Published datasheet value
Plate Dissipation (Average) – published value 2	30000 W	Published datasheet value
Peak Positive-Pulse Plate Voltaged	50000 V	Pulse
Peak Negative-Pulse Grid-No. 1 Voltageh	325 V	Pulse
Peak Plate Current	75	Published datasheet value
Peak Grid-No.2 Current	8	Published datasheet value
Peak Rectified Grid-No. 1 Current	10	Published datasheet value
DC Plate Current	0.3	Published datasheet value
DC Grid-No.2 Current – published value 1	0	Published datasheet value
DC Grid-No.2 Current – published value 2	3	Published datasheet value
DC Grid-No. 1 Current – published value 1	0	Published datasheet value
DC Grid-No. 1 Current – published value 2	4	Published datasheet value
~"~	20000 W	Published datasheet value
Useful Peak Power Output	2	Published datasheet value
waveshape pulse of 2000 microseconds and a duty factor of 0.06 – published value 1	2000 us	Pulse
waveshape pulse of 2000 microseconds and a duty factor of 0.06 – published value 2	0.06 us	Pulse
DC Plate Vottagee – published value 1	20000 V	Published datasheet value
DC Plate Vottagee – published value 2	21000 V	Published datasheet value
Peak Positive-Pulse Grid-No.2 Voltagef – published value 1	2000 V	Pulse

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Positive-Pulse Grid-No.2 Voltagef – published value 2	2000 V	Pulse
Peak Negative-Pulse Grid-No. 1 Voltageh – published value 1	350 V	Pulse
Peak Negative-Pulse Grid-No. 1 Voltageh – published value 2	350 V	Pulse
Peak Plate Current – published value 1	27	Published datasheet value
Peak Plate Current – published value 2	26	Published datasheet value
Peak Grid-No.2 Current	1.6	Published datasheet value
Peak Rectified Grid-No. 1 Current – published value 1	1.2	Published datasheet value
Peak Rectified Grid-No. 1 Current – published value 2	1.2	Published datasheet value
DC Plate Current – published value 1	1.62	Published datasheet value
DC Plate Current – published value 2	1.56	Published datasheet value
DC Grid-No.2 Current – published value 1	0	Published datasheet value
DC Grid-No.2 Current – published value 2	96	Published datasheet value
DC Grid-No. 1 Current – published value 1	0	Published datasheet value
DC Grid-No. 1 Current – published value 2	72	Published datasheet value
DC Grid-No. 1 Current – published value 3	0.072	Published datasheet value
Peak Driver Power Output (Approx – published value 1	2700 W	Published datasheet value
Peak Driver Power Output (Approx – published value 2	2700 W	Published datasheet value
Useful Peak Power Output – published value 1	275000 W	Published datasheet value
Useful Peak Power Output – published value 2	250000 W	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid-No. 1 Circuit Resistance	500	Published datasheet value
filament voltage. At 400 cycles per second the filament leads end	400	Published datasheet value
grid negative voltage of 300 volts	300 mA	Published datasheet value
~ See 6lectrical Considerations - Filament or Heater	6	Published datasheet value
Filament Current – published value 1	460	Published datasheet value
Filament Current – published value 2	530	Published datasheet value
Input Strap-Resonant Frequency – published value 1	230 MHz	Published datasheet value
Input Strap-Resonant Frequency – published value 2	250 MHz	Published datasheet value
Output Strap-Resonant Frequency – published value 1	240 MHz	Published datasheet value
Output Strap-Resonant Frequency – published value 2	260 MHz	Published datasheet value

TUBE TINKER

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