



ELECTRONIC TUBE REFERENCE

4600A

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

CONSOLIDATED TECHNICAL
DATA

1 SECTION
CONSTRUCTION
BEAMPOWER

Forced-air-cooled high-power beam tube designed primarily for voltage-regulator service, with high-current and pulse capabilities for demanding industrial regulated supplies.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	5.5 V / 17.3 A	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Beam Power	
AMPLIFICATION FACTOR	17
MAXIMUM PLATE VOLTAGE	3500 V
MAXIMUM SCREEN VOLTAGE	1000 V
MAXIMUM PLATE DISSIPATION	1750 W
MAXIMUM CATHODE CURRENT	1 A
<i>Published maximum ratings/general electrical characteristics promoted directly; pulse, RF, capacitance, cooling, and service-specific values retained in TUBE_SECTION_PARAMETER.</i>	

Forced-air-cooled beam power tube for high-power voltage-regulator 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	3500 V	PromotedValue
Maximum screen-grid voltage	1000 V	PromotedValue
Maximum plate dissipation	1750 W	PromotedValue
Maximum cathode/plate current	1 A	PromotedValue
Voltage (AC or DC)	5.5 V	Published datasheet value
cathode, and heater)	250 mA	Published datasheet value
specified maximum value of 2500 C. An air flow of 10 cfm – published value 1	2.5 A	Published datasheet value
specified maximum value of 2500 C. An air flow of 10 cfm – published value 2	10 mA	Published datasheet value
DC PLATE VOLTAGE	3.5 A	Published datasheet value
DC GRID-No.2 VOLTAGE	1 A	Published datasheet value
DC PLATE CURRENT	1 mA	Published datasheet value
GRID-No.2 INPUT	50 mA	Published datasheet value
PLATE DISSIPATION	1.75 A	Published datasheet value
MAXIMUM PLATE –TERMINAL TEMPERATURE=250° C	250	Published datasheet value

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Mu / amplification factor	17	PromotedValue
Heater/filament voltage	5.5 V	Nominal operating value
Heater/filament current	17.3 A	Nominal operating value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Current at heater volts = 5.5 – published value 1	5.5 A	Published datasheet value
Current at heater volts = 5.5 – published value 2	17.3 A	Published datasheet value
heater volts = 5.5 – published value 1	5 V	Published datasheet value
heater volts = 5.5 – published value 2	5 V	Published datasheet value
heater volts = 5.5 – published value 3	5 V	Published datasheet value
Mu-Factor, Grid No.2 to Grid No. 1,	1	Published datasheet value
for plate volts = 2500, grid No.2	2500 V	Published datasheet value
volts = 600, and plate ma. = 600 – published value 1	600 mA	Published datasheet value
volts = 600, and plate ma. = 600 – published value 2	600 mA	Published datasheet value
volts = 600, and plate ma. = 600 – published value 3	17 mA	Published datasheet value
terminal temperature to 250° C should be delivered by a	250	Published datasheet value
1. Heater Current – published value 1	1 A	Published datasheet value
1. Heater Current – published value 2	16.3 A	Published datasheet value
1. Heater Current – published value 3	18.2 A	Published datasheet value
2. Direct Interelectrode Capacitances	2	Published datasheet value
Grid No.1 to cathode – published value 1	37	Published datasheet value
Grid No.1 to cathode – published value 2	46	Published datasheet value
Grid No.1 to grid No.2 – published value 1	46	Published datasheet value
Grid No.1 to grid No.2 – published value 2	62	Published datasheet value
Grid No.1 to plateb	0.17	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No.2 to cathodes	1.4	Published datasheet value
Grid No.2 to plate – published value 1	14.6	Published datasheet value
Grid No.2 to plate – published value 2	17.8	Published datasheet value
Plate to cathodeb~e	0.017	Published datasheet value
3. Grid-No.1 Voltages (1) – published value 1	3 V	Published datasheet value
3. Grid-No.1 Voltages (1) – published value 2	1 V	Published datasheet value
3. Grid-No.1 Voltages (1) – published value 3	5 V	Published datasheet value
3. Grid-No.1 Voltages (1) – published value 4	30 V	Published datasheet value
4. Grid-No.1 Voltage° (2) – published value 1	4 V	Published datasheet value
4. Grid-No.1 Voltage° (2) – published value 2	2 V	Published datasheet value
4. Grid-No.1 Voltage° (2) – published value 3	5 V	Published datasheet value
4. Grid-No.1 Voltage° (2) – published value 4	30 V	Published datasheet value
5. Grid-No.2 Currents (1) – published value 1	5 mA	Published datasheet value
5. Grid-No.2 Currents (1) – published value 2	1 mA	Published datasheet value
5. Grid-No.2 Currents (1) – published value 3	-15 mA	Published datasheet value
5. Grid-No.2 Currents (1) – published value 4	0 mA	Published datasheet value
6. Grid-No.2 Current° (2) – published value 1	6 mA	Published datasheet value
6. Grid-No.2 Current° (2) – published value 2	2 mA	Published datasheet value
6. Grid-No.2 Current° (2) – published value 3	-30 mA	Published datasheet value
6. Grid-No.2 Current° (2) – published value 4	0 mA	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
7. Pulse Emission Voltage _f – published value 1	7 V	Pulse
7. Pulse Emission Voltage _f – published value 2	650 V	Pulse
d Ml th do plate voltage 3500 volts, do grid-N o.2 voltage oP 000 volts, – published value 1	3500 V	Published datasheet value
d Ml th do plate voltage 3500 volts, do grid-N o.2 voltage oP 000 volts, – published value 2	0 V	Published datasheet value
grid-No.1-cl rcuit resistance of 30,000 hm s, and do grl a-No.1 voltage	30000 V	Published datasheet value
atlj ustetl to give a tic plate current of 0.25 ampere	250 mA	Published datasheet value
° wl lh do plate voltage of 600 volts, tic grf 0-X0.2 voltage Of Y00 volts, – published value 1	600 V	Published datasheet value
° wl lh do plate voltage of 600 volts, tic grf 0-X0.2 voltage Of Y00 volts, – published value 2	0 V	Published datasheet value
grid-No.1-cl rcuit resistance of 30,000 ohms, and do grid-N o.1 voltage	30000 ohm	Published datasheet value
adjusted to gl ve a tic plate current of 0.5 ampere	500 mA	Published datasheet value
f WI to grid No. 1, grid No.2, and plate tl ed log ether; and a pulsg-voltage	1 V	Published datasheet value
pulse Is 2 microseconds between the two points on the pulse at which	2 us	Pulse
the instantaneous value is 50f of the Deak value, pulse-repetltl on	50	Pulse
frequency Is 60 cps, antl tlu ty factor is 0.00012. The voltage-pulse – published value 1	6 V	Pulse

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
frequency Is 60 cps, antl tlu ty factor is 0.00012. The voltage-pulse – published value 2	0.00012 V	Pulse
amplitude Is adjusted until a peek cathode Current of 90 amperes Is	90 A	Published datasheet value
o btalnetl. After 2 minutes at this value, the voltage- pulse amplitude	2 A	Pulse
tion. With heater voltage of 5.5 voltsac, do plate supply	5.5 V	Published datasheet value
voltage of 450 volts, do grid-No.2 supply voltage of 300 volts, – published value 1	450 V	Published datasheet value
voltage of 450 volts, do grid-No.2 supply voltage of 300 volts, – published value 2	300 V	Published datasheet value
of 10 ma. Plate load resistor = 2000 ohms, grid- No.2 resistor – published value 1	10 mA	Published datasheet value
of 10 ma. Plate load resistor = 2000 ohms, grid- No.2 resistor – published value 2	2 A	Published datasheet value
WITH INCOMING –AIR TEMPERATURE OF 45 ° C	45	Published datasheet value
HEATER VOLTS=5.5	5.5 V	Published datasheet value
PLATE AMPERES – published value 1	92 A	Published datasheet value
PLATE AMPERES – published value 2	11098 A	Published datasheet value
GRID-No.2 VOLTS=400	400 V	Published datasheet value
GRID-No.1 VOLTS=ECI	0 V	Published datasheet value
GRID-No.2 AMPERES – published value 1	92 A	Published datasheet value
GRID-No.2 AMPERES – published value 2	11103 A	Published datasheet value

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