



ELECTRONIC TUBE REFERENCE

4B38

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

CONSOLIDATED TECHNICAL
DATA

1 SECTION
CONSTRUCTION
BEAMPOWER

Air-cooled beam-power tube designed for RF power service and Class-AB1 audio-frequency power-amplifier and modulator applications.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	6.3 V / —	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Beam Power	
TRANSCONDUCTANCE	0.02 S
MAXIMUM PLATE VOLTAGE	1250 V
MAXIMUM PLATE DISSIPATION	150 W
<i>Published maximum ratings and characteristics audited; remaining numeric data retained densely in parameter table.</i>	

The 4B38 is an air-cooled beam-power tube for RF power service and class-AB1 audio-frequency power-amplifier and modulator applications.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1971 NEC

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

1971 NEC

Section 1 · Beam Power

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Heater Voltage	6.3 V	Heater Voltage 6.3 Volts
Heater Current	4.8 A	Heater Current 4.8 Amps
Amplification Factor Grid No	2	Amplification Factor Grid No.2 s'm,""" __ T
to Grid No.1	6	to Grid No.1 6
Grid No.1 to Plate	1.5	Grid No.1 to Plate 1.5 unF
Input	50	Input 50 wuF
Output	20	Output 20 uuF
Heater to Cathode ~—mw	25	Heater to Cathode ~—mw- 25 puf
Transconductance	20	Transconductance . 20 millimhos
Maximum Frequency for Maximum Ratings	10 MHz	Maximum Frequency for Maximum Ratings - 10MHz/s FEy
Base;	1	Base; 1; Heater
Published value	2	2o Grid N,Y
Bottom Part - E3 [1]	25	Bottom Part - E325-2 4; Grid No.3 and
Bottom Part - E3 [2]	-2	Bottom Part - E325-2 4; Grid No.3 and
Bottom Part - E3 [3]	4	Bottom Part - E325-2 4; Grid No.3 and
Bottom Part - E3 [4]	3	Bottom Part - E325-2 4; Grid No.3 and
Published value	53	53 Heater
DC Plate Voltag	1250	DC Plate Voltag- 1250 Volts
DC Grid No [1]	2 V	DC Grid No.2 Voltage ———e—mmmm e 400 Volts
DC Grid No [2]	400 V	DC Grid No.2 Voltage ———e—mmmm e 400 Volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Max. Signal DC Plate Current*	600 A	Max. Signal DC Plate Current* 600 mA
Max. Signal Flute Input*	450	Max. Signal Flute Input* 450 Watts
Plate Dissipation	150 W	Plate Dissipation 150 Watts
Peak Heater to Cathode Voltage +	500 V	Peak Heater to Cathode Voltage +500 Volts
DC Plate Voltage [1]	800	DC Plate Voltage - 800 1000 Volrs
DC Plate Voltage [2]	1000	DC Plate Voltage - 800 1000 Volrs
DC Grid No [1]	2 V	DC Grid No.2 Voltage 300 300 Volx.
DC Grid No [2]	300 V	DC Grid No.2 Voltage 300 300 Volx.
DC Grid No [3]	300 V	DC Grid No.2 Voltage 300 300 Volx.
DC Grid No.1 Voltage -- = [1]	50 V	DC Grid No.1 Voltage -- =50 ~50 Volt:s
DC Grid No.1 Voltage -- = [2]	50 V	DC Grid No.1 Voltage -- =50 ~50 Volt:s
Peak AF Grid No.1 to Grid No.1 Voltupge —m—mcmmece [1]	106	Peak AF Grid No.1 to Grid No.1 Voltupge —m—mcmmece 106 106G Vi
Peak AF Grid No.1 to Grid No.1 Voltupge —m—mcmmece [2]	106	Peak AF Grid No.1 to Grid No.1 Voltupge —m—mcmmece 106 106G Vi
Zero-Signal DC Plate Current [1]	160 A	Zero-Signal DC Plate Current 160 80 ma
Zero-Signal DC Plate Current [2]	80 A	Zero-Signal DC Plate Current 160 80 ma
Max. Signal DC Grid No [1]	2 A	Max. Signal DC Grid No.2 Current 80 70 mA
Max. Signal DC Grid No [2]	80 A	Max. Signal DC Grid No.2 Current 80 70 mA
Max. Signal DC Grid No [3]	70 A	Max. Signal DC Grid No.2 Current 80 70 mA
Effective Load Resistance (Plate to Plate) —me——e—— = [1]	1900	Effective Load Resistance (Plate to Plate) —me——e—— = 1900 2800 Chms
Effective Load Resistance (Plate to Plate) —me——e—— = [2]	2800	Effective Load Resistance (Plate to Plate) —me——e—— = 1900 2800 Chms
Plate Power Cutput (approx.) [1]	380 W	Plate Power Cutput (approx.) 380 450 Wat-o
Plate Power Cutput (approx.) [2]	450 W	Plate Power Cutput (approx.) 380 450 Wat-o

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
" Plate Voltage --- -- [1]	1000 V	" Plate Voltage ---- --- 1000 V-0
" Plate Voltage --- -- [2]	0 V	" Plate Voltage ---- --- 1000 V-0
DC Grid No	2 V	DC Grid No.2 Voltage Volts
Max. Signal Peak Plate Current —	1.3 A	Max. Signal Peak Plate Current — 1.3 Amps
Zero-Signal DC Plate Current [1]	100 A	Zero-Signal DC Plate Current -- 100 80
Zero-Signal DC Plate Current [2]	80 A	Zero-Signal DC Plate Current -- 100 80
Max. Signal DC Grid No [1]	2 A	Max. Signal DC Grid No.2 Current 80 70
Max. Signal DC Grid No [2]	80 A	Max. Signal DC Grid No.2 Current 80 70
Max. Signal DC Grid No [3]	70 A	Max. Signal DC Grid No.2 Current 80 70
Peak AF Cathode to Cathode Voltage [1]	1200 V	Peak AF Cathode to Cathode Voltage - 1200 1600 Volts
Peak AF Cathode to Cathode Voltage [2]	1600 V	Peak AF Cathode to Cathode Voltage - 1200 1600 Volts
Plate Power Output (approx.) [1]	380 W	Plate Power Output (approx.) 380 450 Watts
Plate Power Output (approx.) [2]	450 W	Plate Power Output (approx.) 380 450 Watts
Note; Peak Cathode to Grid No.1 Voltage should never exceed +	300 V	Note; Peak Cathode to Grid No.1 Voltage should never exceed +300 Volts.
PLATE CHARACTERISTICS (	1	PLATE CHARACTERISTICS (1)
DC PLATE CURRENT	1 A	DC PLATE CURRENT 1b(A)
PLATE CHARACTERISITCS (	2	PLATE CHARACTERISITCS (2)
DC GRID NO [1]	2	DC GRID NO.2 CURR:NT 1c2(mA)
DC GRID NO [2]	1	DC GRID NO.2 CURR:NT 1c2(mA)
GRID NO	1	GRID NO.1 VCOLTAGE i.~