

2B33

Power - Beam (NOT sweep) electronic tube

Beam-power transmitting tetrode for driver and RF power-amplifier service to about 60 MHz; triode-connected data also support Class-AB audio power-amplifier and modulator operation.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	6.3 V / 900 mA	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Beam Power	
TRANSCONDUCTANCE	0.006 S
MAXIMUM PLATE VOLTAGE	600 V
MAXIMUM SCREEN VOLTAGE	300 V
MAXIMUM PLATE DISSIPATION	25 W
MAXIMUM SCREEN DISSIPATION	3.5 W
Published maximum ratings and characteristics audited; remaining numeric data retained densely in parameter table.	

The 2B33 is an indirectly heated beam-power tetrode for transmitter driver and RF power-amplifier service up to about 60 MHz. In triode connection it is also suitable for audio-frequency power-amplifier and modulator service.

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
Published value [1]	2 W	2B33 is » beam power tetrode having an indirectly heated
Published value [2]	3 W	2B33 is » beam power tetrode having an indirectly heated
unipotential cathode. t	4	unipotential cathode. t 4
Published value [1]	2 W	2B33 is used as a driver or a power amplifier of a brans- £ H
Published value [2]	3 W	2B33 is used as a driver or a power amplifier of a brans- £ H
mitter up to a frequency of	60	mitter up to a frequency of 60 Milz.
Heater Voltage evevvevn [1]	5.7 V	Heater Voltage evevvevn. 5.7 6.3 6.9 v
Heater Voltage evevvevn [2]	6.3 V	Heater Voltage evevvevn. 5.7 6.3 6.9 v
Heater Voltage evevvevn [3]	6.9 V	Heater Voltage evevvevn. 5.7 6.3 6.9 v
Heater Current (ot [1]	6.3 A	Heater Current (ot 6.3 volts) - 0.9 - A
Heater Current (ot [2]	900 mA	Heater Current (ot 6.3 volts) - 0.9 - A
Transconductance ..eeeoves.os	6000	Transconductance ..eeeoves.os - 6000 -]
Grid No [1]	1	Grid No. 1 to Flate (Note 1) - - 0.2 PP W * //
Grid No [2]	1	Grid No. 1 to Flate (Note 1) - - 0.2 PP W * //
Grid No [3]	0.2	Grid No. 1 to Flate (Note 1) - - 0.2 PP W * //
Published value	3	3 Grid Lol
AF Power Amplifier and Modulator-Class AB1 (Note	3 W	AF Power Amplifier and Modulator-Class AB1 (Note 3)
(Triode~connection, grid No	2	(Triode~connection, grid No. 2 is connected to plate)
DC Plate Voltage ccciuvrnnnnn e et N	400 V	DC Plate Voltage ccciuvrnnnnn e et N 400 Vdc

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Max-Signal DC Plate Current (Note [1])	4 A	Max-Signal DC Plate Current (Note 4) ve.oc.. e tececteee s 125 mAde
Max-Signal DC Plate Current (Note [2])	125 A	Max-Signal DC Plate Current (Note 4) ve.oc.. e tececteee s 125 mAde
Max-Signal Plate Input (Note [1])	4	Max-Signal Plate Input (Note 4) L ieieiennnnnnn. ettt . 50 W
Max-Signal Plate Input (Note [2])	50	Max-Signal Plate Input (Note 4) L ieieiennnnnnn. ettt . 50 W
Plate Dissipation (Note [1])	1 W	Plate Dissipation (Note 1) t eennnns Creeee et rer e 25 W
Plate Dissipation (Note [2])	25 W	Plate Dissipation (Note 1) t eennnns Creeee et rer e 25 W
Peak Heater to Cathode Voltage ceertrtasensan Cieeaetenaa +	135 V	Peak Heater to Cathode Voltage ceertrtasensan Cieeaetenaa +135 V
DC Plate Voltage ...i.iivieieiinrreanneonnasoaaanaans cieeeeesesaa .o	400 V	DC Plate Voltage ...i.iivieieiinrreanneonnasoaaanaans cieeeeesesaa .o 400 Vdc
DC Grid No [1]	1 V	DC Grid No. 1 Voltage ..ot iiieeerinnnnnsacnnncnannnnns ceeeesa ceanena -45 Vdc
DC Grid No [2]	-45 V	DC Grid No. 1 Voltage ..ot iiieeerinnnnnsacnnncnannnnns ceeeesa ceanena -45 Vdc
Peak AF Grid No [1]	1 V	Peak AF Grid No. 1 to Grid No. 1 Voltage Geeneeceeranan 90 V
Peak AF Grid No [2]	1 V	Peak AF Grid No. 1 to Grid No. 1 Voltage Geeneeceeranan 90 V
Peak AF Grid No [3]	90 V	Peak AF Grid No. 1 to Grid No. 1 Voltage Geeneeceeranan 90 V
Zero—Siéna DC Plate Current ...uiiieevecaancaennaans ceesessasann v e	64 A	Zero—Siéna DC Plate Current ...uiiieevecaancaennaans ceesessasann v e 64 mAdc
Max-Signal DC Plate Current ...e..ececeeeeeeensens ceiesseecnaan .o	140 A	Max-Signal DC Plate Current ...e..ececeeeeeeensens ceiesseecnaan .o 140 mAdc
ective Load Resistance (Plate to Plate) e teeceaeane [1]	3000	ective Load Resistance (Plate to Plate) e teeceaeane 3000 2
ective Load Resistance (Plate to Plate) e teeceaeane [2]	2	ective Load Resistance (Plate to Plate) e teeceaeane 3000 2
Maximum Grid No	1	Maximum Grid No. 1 Circutt Rezistance:
AF Power Amplifier and Modulator-Class AB1 (Yote	3 W	AF Power Amplifier and Modulator-Class AB1 (Yote 3)

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Plate Voltage ...oieiiiiirinnnnnnss cesenen Ceeereatncsenasnesans ceens	600 V	DC Plate Voltage ...oieiiiiirinnnnnnss cesenen Ceeereatncsenasnesans ceens 600 Vdc
DC Grid No [1]	2 V	DC Grid No. 2 Voltage ...ttt iienenntocannonens cies e ceeree-ensoas 300 Vdc
DC Grid No [2]	300 V	DC Grid No. 2 Voltage ...ttt iienenntocannonens cies e ceeree-ensoas 300 Vdc
Max.-Signal Plate Input (Note [1])	4	Max.-Signal Plate Input (Note 4) ...veieenvnenas N S 60 W
Max.-Signal Plate Input (Note [2])	60	Max.-Signal Plate Input (Note 4) ...veieenvnenas N S 60 W
Max.-Signal Grid No [1]	2	Max.-Signal Grid No. 2 Input (Note 4) et e, 3.5 W
Max.-Signal Grid No [2]	4	Max.-Signal Grid No. 2 Input (Note 4) et e, 3.5 W
Max.-Signal Grid No [3]	3.5	Max.-Signal Grid No. 2 Input (Note 4) et e, 3.5 W
Plate Dissipation (Note [1])	4 W	Plate Dissipation (Note 4) e et e e Ceeeeeaaen 25 W
Plate Dissipation (Note [2])	25 W	Plate Dissipation (Note 4) e et e e Ceeeeeaaen 25 W
DC Grid No [1]	2 V	DC Grid No. 2 Voltage (Note 6) Ceeeeeaaen eeean . 300 300 300 Vde
DC Grid No [2]	6 V	DC Grid No. 2 Voltage (Note 6) Ceeeeeaaen eeean . 300 300 300 Vde
DC Grid No [3]	300 V	DC Grid No. 2 Voltage (Note 6) Ceeeeeaaen eeean . 300 300 300 Vde
DC Grid No [4]	300 V	DC Grid No. 2 Voltage (Note 6) Ceeeeeaaen eeean . 300 300 300 Vde
DC Grid No [5]	300 V	DC Grid No. 2 Voltage (Note 6) Ceeeeeaaen eeean . 300 300 300 Vde
DC Grid No [1]	1 V	DC Grid No. 1 Voltage (Note T) tiiiinnnrnennnnnnanas =30 -32 -34 Vde
DC Grid No [2]	30 V	DC Grid No. 1 Voltage (Note T) tiiiinnnrnennnnnnanas =30 -32 -34 Vde
DC Grid No [3]	-32 V	DC Grid No. 1 Voltage (Note T) tiiiinnnrnennnnnnanas =30 -32 -34 Vde
DC Grid No [4]	-34 V	DC Grid No. 1 Voltage (Note T) tiiiinnnrnennnnnnanas =30 -32 -34 Vde
Pealkk AP Grid No [1]	1 V	Pealkk AP Grid No. 1 to Grid No, 1 Voltage cesaan 60 64 68 V

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Pealkk AP Grid No [2]	1 V	Pealkk AP Grid No. 1 to Grid No, 1 Voltage cesaan 60 64 68 V
Pealkk AP Grid No [3]	60 V	Pealkk AP Grid No. 1 to Grid No, 1 Voltage cesaan 60 64 68 V
Pealkk AP Grid No [4]	64 V	Pealkk AP Grid No. 1 to Grid No, 1 Voltage cesaan 60 64 68 V
Pealkk AP Grid No [5]	68 V	Pealkk AP Grid No. 1 to Grid No, 1 Voltage cesaan 60 64 68 V
Zero—Signal DC Plate Current ... iirinenennanns e [1]	50 A	Zero—Signal DC Plate Current ... iirinenennanns e 50 44 39 mAdc
Zero—Signal DC Plate Current ... iirinenennanns e [2]	44 A	Zero—Signal DC Plate Current ... iirinenennanns e 50 44 39 mAdc
Zero—Signal DC Plate Current ... iirinenennanns e [3]	39 A	Zero—Signal DC Plate Current ... iirinenennanns e 50 44 39 mAdc
Max-Signal DC Plate Current Chersessecatareases .o [1]	143 A	Max-Signal DC Plate Current Chersessecatareases .o 143 141 139 mAdc
Max-Signal DC Plate Current Chersessecatareases .o [2]	141 A	Max-Signal DC Plate Current Chersessecatareases .o 143 141 139 mAdc
Max-Signal DC Plate Current Chersessecatareases .o [3]	139 A	Max-Signal DC Plate Current Chersessecatareases .o 143 141 139 mAdc
Zero-Signal DC Grid No [1]	2 A	Zero-Signal DC Grid No. 2 Current e 'e 2 1 0.6 mAdc
Zero-Signal DC Grid No [2]	2 A	Zero-Signal DC Grid No. 2 Current e 'e 2 1 0.6 mAdc
Zero-Signal DC Grid No [3]	1 A	Zero-Signal DC Grid No. 2 Current e 'e 2 1 0.6 mAdc
Zero-Signal DC Grid No [4]	600 mA	Zero-Signal DC Grid No. 2 Current e 'e 2 1 0.6 mAdc
Max-Signal DC Grid No [1]	2 A	Max-Signal DC Grid No. 2 Current 16 15 15 mAdc
Max-Signal DC Grid No [2]	16 A	Max-Signal DC Grid No. 2 Current 16 15 15 mAdc
Max-Signal DC Grid No [3]	15 A	Max-Signal DC Grid No. 2 Current 16 15 15 mAdc
Max-Signal DC Grid No [4]	15 A	Max-Signal DC Grid No. 2 Current 16 15 15 mAdc
Effective Load Resistance (Plate to Plate) [1]	5800	Effective Load Resistance (Plate to Plate) 5800 8200 10000 Q
Effective Load Resistance (Plate to Plate) [2]	8200	Effective Load Resistance (Plate to Plate) 5800 8200 10000 Q

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Effective Load Resistance (Plate to Plate) [3]	10000	Effective Load Resistance (Plate to Plate) 5800 8200 10000 Q
Max-Signal Driving Power (approx.) veieecenn. cees [1]	0 W	Max-Signal Driving Power (approx.) veieecenn. cees 0 0w
Max-Signal Driving Power (approx.) veieecenn. cees [2]	0 W	Max-Signal Driving Power (approx.) veieecenn. cees 0 0w
Max-Signal Plate Power Output (approx.) ieievane [1]	36 W	Max-Signal Plate Power Output (approx.) ieievane. 36 46 56 W
Max-Signal Plate Power Output (approx.) ieievane [2]	46 W	Max-Signal Plate Power Output (approx.) ieievane. 36 46 56 W
Max-Signal Plate Power Output (approx.) ieievane [3]	56 W	Max-Signal Plate Power Output (approx.) ieievane. 36 46 56 W
Grid No	1	Grid No. 1 Circuii Resistance '
AF Power Amplifier and Modulator- Class AB2 (Note	5 W	AF Power Amplifier and Modulator-Class AB2 (Note 5)
DC Plate Voltage Ceeectereacaannnan cetecteseesennsan	600 V	DC Plate Voltage Ceeectereacaannnan cetecteseesennsan 600G Vde
DC Grid No [1]	2	DC Grid No. 2 Vollage ...ccveerensoaeoaasooscscssasscannnosasavsesnsnnsas 300 Vdc
DC Grid No [2]	300	DC Grid No. 2 Vollage ...ccveerensoaeoaasooscscssasscannnosasavsesnsnnsas 300 Vdc
Max-Signal DC Plate Current (Note [1]	4 A	Max-Signal DC Plate Current (Note 4). tuivuerierrioneiesocnnanancocnnns 120 mAdc
Max-Signal DC Plate Current (Note [2]	120 A	Max-Signal DC Plate Current (Note 4). tuivuerierrioneiesocnnanancocnnns 120 mAdc
Max-Signal Grid No [1]	2	Max-Signal Grid No. 2 Input (Note 4) ..uiueuini niiieeiinenionnnnnns 3.5 W
Max-Signal Grid No [2]	4	Max-Signal Grid No. 2 Input (Note 4) ..uiueuini niiieeiinenionnnnnns 3.5 W
Max-Signal Grid No [3]	3.5	Max-Signal Grid No. 2 Input (Note 4) ..uiueuini niiieeiinenionnnnnns 3.5 W
Plate Dissipation (Note [1]	4 W	Plate Dissipation (Note 4) ..u.veeeecvrnenennnnnnns Ceeaeanaacas Ceesean 25 W
Plate Dissipation (Note [2]	25 W	Plate Dissipation (Note 4) ..u.veeeecvrnenennnnnnns Ceeaeanaacas Ceesean 25 W
Peak Heater to Cathode Voltage c.... teerssscacsenanasaanas cee. I3	5 V	Peak Heater to Cathode Voltage c.... teerssscacsenanasaanas cee. I35V

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Plate Voltage t Ceetstasteesaes cecaseanse.a [1]	400 V	DC Plate Voltage t Ceetstasteesaes cecaseanse.a. 400 500 600 Vdc
DC Plate Voltage t Ceetstasteesaes cecaseanse.a [2]	500 V	DC Plate Voltage t Ceetstasteesaes cecaseanse.a. 400 500 600 Vdc
DC Plate Voltage t Ceetstasteesaes cecaseanse.a [3]	600 V	DC Plate Voltage t Ceetstasteesaes cecaseanse.a. 400 500 600 Vdc