



ELECTRONIC TUBE REFERENCE

P250A

Power - Pentode (NOT beam) (over 1000V 100W) electronic tube

CONSOLIDATED TECHNICAL
DATA

1 SECTION
CONSTRUCTION
PENTODE

Naturally air-cooled power pentode for RF power amplification, oscillator, modulator, and suppressor-grid-modulated service to approximately 25 MHz. Designed for versatile transmitting applications.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	12 V / 11 A	PARALLEL HEATER	— / —
HEATING	Direct	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION 1 Pentode	
TRANSCONDUCTANCE	0.051 S
AMPLIFICATION FACTOR	6.5
MAXIMUM PLATE VOLTAGE	3000 V
MAXIMUM PLATE DISSIPATION	420 W
<i>Published maximum ratings and characteristics audited; remaining numeric data retained densely in parameter table.</i>	

The P250A is a naturally air-cooled power pentode for RF power-amplifier, oscillator, modulator, and suppressor-grid-modulated service at frequencies up to about 25 MHz.

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 · Pentode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Power Amplifier, Oscillator, Modulator, or Grid No	3 W	Power Amplifier, Oscillator, Modulator, or Grid No.3
Voltage	12 V	Voltage 12 Volts
Current (at nominal voltage)	8.5 V	Current (at nominal voltage) - 8.5 Amps
Current (at nominal voltage)	17 V	Current (at nominal voltage) 17
Amplification Factor, Grid No.1 to Grid No.)	6.5	Amplification Factor, Grid No.1 to Grid No.) . 6.5
Grid No [1]	1	Grid No.1 to Plate . 0.16
Grid No [2]	0.16	Grid No.1 to Plate . 0.16
Frequency for max. Ratings	25	Frequency for max. Ratings 25
Published value [1]	1	1: Grid No.2 G - 5: Filament
Published value [2]	2	1: Grid No.2 G - 5: Filament
Published value [3]	5	1: Grid No.2 G - 5: Filament
Published value [1]	2	2: Filament Common Point _3 6: Grid No.1
Published value [2]	3	2: Filament Common Point _3 6: Grid No.1
Published value [3]	6	2: Filament Common Point _3 6: Grid No.1
G3: Grid No	3	G3: Grid No.3(upper base)

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Published value [1]	3	3: Grid No.3
Published value [2]	3	3: Grid No.3
Published value	4	4: Filament
Maximum Upper Base Temperature coecees sovecesssse	180	Maximum Upper Base Temperature coecees sovecesssse 180°C
DC Plate Voltage ceveeeveoanssarsessossecasscssnsess	3000 V	DC Plate Voltage ceveeeveoanssarsessossecasscssnsess 3000 Volts
DC Grid No [1]	3 V	DC Grid No.3 Voltage ..civeeecs vresesscossasasssaeeceass 100 Volts
DC Grid No [2]	100 V	DC Grid No.3 Voltage ..civeeecs vresesscossasasssaeeceass 100 Volts
DC Grid No [1]	2 V	DC Grid No.2 Voltage covvereiesevveencecnscncscnaaas 000 Volts
DC Grid No [2]	0 V	DC Grid No.2 Voltage covvereiesevveencecnscncscnaaas 000 Volts
Voxe=Xrenal D Plate current (nobe	1 A	Voxe=Xrenal D Plate current (nobe 1) vuteee vevneens Ho A
Max.-Signal Plate Input (note [1]	1	Max.-Signal Plate Input (note 1) seeeeev sereceaeas.. 1000 Watts
Max.-Signal Plate Input (note [2]	1000	Max.-Signal Plate Input (note 1) seeeeev sereceaeas.. 1000 Watts
Plate Dissipation {(note [1]	1 W	Plate Dissipation {(note 1) tieeereeeecaerveiseiecasas 420 Watts
Plate Dissipation {(note [2]	420 W	Plate Dissipation {(note 1) tieeereeeecaerveiseiecasas 420 Watts
Grid No [1]	2 W	Grid No.2 Dissipation (note 1) sevevieviosnsneeesass TO Watts
Grid No [2]	1 W	Grid No.2 Dissipation (note 1) sevevieviosnsneeesass TO Watts
DC Grid No [1]	3	DC Grid No.3 Voltlame .. iieeteeoeeraneissoansesanea O 0 Volts
DC Grid No [2]	0	DC Grid No.3 Voltlame .. iieeteeoeeraneissoansesanea O 0 Volts
DC Grid No	2 V	DC Grid No.2 Voltage,

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DO Grid No.1 Voltage c.ieiiieneititicencssenoncesnee = [1]	70 V	DO Grid No.1 Voltage c.ieiiieneititicencssenoncesnee =70 -70 Volts
DO Grid No.1 Voltage c.ieiiieneititicencssenoncesnee = [2]	-70 V	DO Grid No.1 Voltage c.ieiiieneititicencssenoncesnee =70 -70 Volts
Peak AF Grid No.1-to-Grid No.1 Voltage ...c.eee [1]	210 V	Peak AF Grid No.1-to-Grid No.1 Voltage ...c.eee. 210 200 Volts
Peak AF Grid No.1-to-Grid No.1 Voltage ...c.eee [2]	200 V	Peak AF Grid No.1-to-Grid No.1 Voltage ...c.eee. 210 200 Volts
Loro= [1]	3 A	Loro=Signal DO Plate Current oevieeeecvencasaas 160 130 mA
Loro= [2]	160 A	Loro=Signal DO Plate Current oevieeeecvencasaas 160 130 mA
Loro= [3]	130 A	Loro=Signal DO Plate Current oevieeeecvencasaas 160 130 mA
Max.-Signal DC Plate Current ..eecesssecesesssss [1]	800 A	Max.-Signal DC Plate Current ..eecesssecesesssss 800 800
Max.-Signal DC Plate Current ..eecesssecesesssss [2]	800 A	Max.-Signal DC Plate Current ..eecesssecesesssss 800 800
Iero-Signal DC Grid No [1]	2 A	Iero-Signal DC Grid No.2 Current ...cvvececonans 4
Iero-Signal DC Grid No [2]	4 A	Iero-Signal DC Grid No.2 Current ...cvvececonans 4
Max.-Signal DC Grid No [1]	2 A	Max.-Signal DC Grid No.2 Current (approx.) 25 mA
Max.-Signal DC Grid No [2]	25 A	Max.-Signal DC Grid No.2 Current (approx.) 25 mA
Max.-Signal DC Grid No.1 Current (approx.) « [1]	21 A	Max.-Signal DC Grid No.1 Current (approx.) «.... 21 17 mA
Max.-Signal DC Grid No.1 Current (approx.) « [2]	17 A	Max.-Signal DC Grid No.1 Current (approx.) «.... 21 17 mA
Effective Load Resistance (Plate-to-Plate) [1]	5080	Effective Load Resistance (Plate-to-Plate) 5080 6400 Ohms
Effective Load Resistance (Plate-to-Plate) [2]	6400	Effective Load Resistance (Plate-to-Plate) 5080 6400 Ohms
Max.-Signal Driving Power (approx.) e.eeeee [1]	2.1 W	Max.-Signal Driving Power (approx.) e.eeeee. 2.1 1.6 Watts
Max.-Signal Driving Power (approx.) e.eeeee [2]	1.6 W	Max.-Signal Driving Power (approx.) e.eeeee. 2.1 1.6 Watts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Max.-Signal Power Output (approx.) « [1]	1000 W	Max.-Signal Power Output (approx.) «..... 1000 1200 Watts
Max.-Signal Power Output (approx.) « [2]	1200 W	Max.-Signal Power Output (approx.) «..... 1000 1200 Watts
Grid No	3 W	Grid No.3 Modulated RF Power Amplifier - Class C Telephony
DC Grid No [1]	2	DC Grid No.2 VOLTiage eeeeeeceesececcascanssecenas 600 Volts
DC Grid No [2]	600	DC Grid No.2 VOLTiage eeeeeeceesececcascanssecenas 600 Volts
DC Grid No.1 Volbtage ceeeevereeveccnasssossnecnees =	400	DC Grid No.1 Volbtage ceeeevereeveccnasssossnecnees =400 Volts
DC Plate CUTEENT o eeivsseovssesvasasreasaasossaea	250	DC Plate CUTEENT o eeivsseovssesvasasreasaasossaea 250 mA
DC Grid No.1 Current ... ceeseeseive cossneccoscace	40 A	DC Grid No.1 Current ... ceeseeseive cossneccoscace 40 mA
Plate Dissipation ceeeeeiesseesacreonnonessaaees	420 W	Plate Dissipation ceeeeeiesseesacreonnonessaaees 420 Watts
Please refer to *he "grid No	3	Please refer to *he "grid No.3 modulated characteristics,"
I Plate Voltage o4 e s e o	3000	I Plate Voltage o4 e s e o 3000
x urid No [1]	2 V	x urid No.2 Voltage 600
x urid No [2]	600 V	x urid No.2 Voltage 600
S Grid No.1 Voltage ~	-100 V	S Grid No.1 Voltage ~--100
"Plate Current	500 A	"Plate Current 500 &
ne Grid No.1 Current .,	10 A	ne Grid No.1 Current ., 10 mA
Plate Input	1500	Plate Input 1500 Watts
Plate Dissipation	420 W	Plate Dissipation 420 Wattls
DC Plate Voltage [1]	2000 V	DC Plate Voltage ... 2000 3000 Volts
DC Plate Voltage [2]	3000 V	DC Plate Voltage ... 2000 3000 Volts
DU Grid Noo3 Voltage [1]	0 V	DU Grid Noo3 Voltage . 00 0 Voltus
DU Grid Noo3 Voltage [2]	0 V	DU Grid Noo3 Voltage . 00 0 Voltus
DC Grid No [1]	2	DC Grid No.2 Voltuge . 0 500 Volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Grid No [2]	0	DC Grid No.2 Voltage . 0 500 Volts
DC Grid No [3]	500	DC Grid No.2 Voltage . 0 500 Volts
DC Grid No. I Voltage [1]	-200 V	DC Grid No. I Voltage . -200 =200 Volts
DC Grid No. I Voltage [2]	200 V	DC Grid No. I Voltage . -200 =200 Volts
Peak RF Grid No.1 Voltage [1]	300 V	Peak RF Grid No.1 Voltage 300 300 Volts
Peak RF Grid No.1 Voltage [2]	300 V	Peak RF Grid No.1 Voltage 300 300 Volts
D Plate Current s e o & [1]	0 mA	D Plate Current s e o & 0 e e o s 00 0 500 130 mA
D Plate Current s e o & [2]	0 mA	D Plate Current s e o & 0 e e o s 00 0 500 130 mA
D Plate Current s e o & [3]	0 mA	D Plate Current s e o & 0 e e o s 00 0 500 130 mA
D Plate Current s e o & [4]	500 A	D Plate Current s e o & 0 e e o s 00 0 500 130 mA
D Plate Current s e o & [5]	130 A	D Plate Current s e o & 0 e e o s 00 0 500 130 mA
Power Output (approx.) * o [1]	0 W	Power Output (approx.) * o 0 00 00 « 200 710 1050 Wit
Power Output (approx.) * o [2]	0 W	Power Output (approx.) * o 0 00 00 « 200 710 1050 Wit
Power Output (approx.) * o [3]	0 W	Power Output (approx.) * o 0 00 00 « 200 710 1050 Wit
Power Output (approx.) * o [4]	200 W	Power Output (approx.) * o 0 00 00 « 200 710 1050 Wit
Power Output (approx.) * o [5]	710 W	Power Output (approx.) * o 0 00 00 « 200 710 1050 Wit
Power Output (approx.) * o [6]	1050 W	Power Output (approx.) * o 0 00 00 « 200 710 1050 Wit
Load FPower Output (approx.) (note [1])	2 W	Load FPower Output (approx.) (note 2) o0 6H3i) 95 Watt s,
Load FPower Output (approx.) (note [2])	6 W	Load FPower Output (approx.) (note 2) o0 6H3i) 95 Watt s,
Load FPower Output (approx.) (note [3])	95 W	Load FPower Output (approx.) (note 2) o0 6H3i) 95 Watt s,

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
ot e Vidliie	1 W	ot e Vidliie 1= reduced by Jdriv Ny power for o=cijlator.
= FILAMENT VOLTAGE (E _f)=	12 V	= FILAMENT VOLTAGE (E _f)= 12Vac
= DC PLATE VOLTAGE=	2000 V	= DC PLATE VOLTAGE=2000vdc
& T DC GRID NO [1]	2 V	& T DC GRID NO.2 VOLTAGE (E _{cc2}) =1000Vde I