

ELECTRONIC TUBE REFERENCE

4P55

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

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
PENTODE

Naturally air-cooled NEC pentode for RF power amplification, grid-modulated transmitters, and AF modulator service.

GENERAL CHARACTERISTICS

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

SECTION RATINGS

SECTION1 Pentode	
MAXIMUM PLATE VOLTAGE	1500 V
MAXIMUM PLATE DISSIPATION	120 W
Published maximum ratings and characteristics audited; remaining numeric data retained densely in parameter table.	

The 4P55 is a naturally air-cooled pentode designed for RF power amplification, grid-modulated RF service, and audio-frequency power-amplifier or modulator operation.

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
! as a KRF power arplifier, griad \	0 W	! as a KRF power arplifier, griad \ 0. modulated amplifior
of di=ssipating	120	of di=ssipating 120 watts and the cathode L8 an ox1de coated
Amplifi-ation Factor, Grid No	2	Amplifi-ation Factor, Grid No. 2
Grid No	1	Grid No. 1 I I P T T T N SR
Transconductance {Ib	10	Transconductance {Ib-10Cmy)
Direct Interelectrode Capacitances	3 pF	Direct Interelectrode Capacitances: 3φ ' N
Caj, plate and erid No [1]	3	Caj, plate and erid No. 3} L..... Mediam, Al43
Caj, plate and erid No [2]	3	Caj, plate and erid No. 3} L..... Mediam, Al43
DC Flate Voltage ..ovvvvvenn. ceect ettt e et aennns PR [1]	1000 V	DC Flate Voltage ..ovvvvvenn. ceect ettt e et aennns PR 1000 1250
DC Flate Voltage ..ovvvvvenn. ceect ettt e et aennns PR [2]	1250 V	DC Flate Voltage ..ovvvvvenn. ceect ettt e et aennns PR 1000 1250
DC Girid Yo [1]	2 V	DC Girid Yo. 2 Voltage c et ececeseensessacereeeaae 300 300 300 volts
DC Girid Yo [2]	300 V	DC Girid Yo. 2 Voltage c et ececeseensessacereeeaae 300 300 300 volts
DC Girid Yo [3]	300 V	DC Girid Yo. 2 Voltage c et ececeseensessacereeeaae 300 300 300 volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Grid Yo [4]	300 V	DC Grid Yo. 2 Voltage c et ececeseensessacereeeaae 300 300 300 volts
DC Grid No [1]	1 V	DC Grid No. 1 Voltage (note 2) Liuiiieiieiiiiieinnnnnnnene. ~55 -60 -60 volts
DC Grid No [2]	2 V	DC Grid No. 1 Voltage (note 2) Liuiiieiieiiiiieinnnnnnnene. ~55 -60 -60 volts
DC Grid No [3]	55 V	DC Grid No. 1 Voltage (note 2) Liuiiieiieiiiiieinnnnnnnene. ~55 -60 -60 volts
DC Grid No [4]	-60 V	DC Grid No. 1 Voltage (note 2) Liuiiieiieiiiiieinnnnnnnene. ~55 -60 -60 volts
DC Grid No [5]	-60 V	DC Grid No. 1 Voltage (note 2) Liuiiieiieiiiiieinnnnnnnene. ~55 -60 -60 volts
Peak HF tirid No [1]	1 V	Peak HF tirid No. 1 Voltage (note 2} c.iviiiiiiiinneennnnns 53 60 75 volts
Peak HF tirid No [2]	2 V	Peak HF tirid No. 1 Voltage (note 2} c.iviiiiiiiinneennnnns 53 60 75 volts
Peak HF tirid No [3]	53 V	Peak HF tirid No. 1 Voltage (note 2} c.iviiiiiiiinneennnnns 53 60 75 volts
Peak HF tirid No [4]	60 V	Peak HF tirid No. 1 Voltage (note 2} c.iviiiiiiiinneennnnns 53 60 75 volts
Peak HF tirid No [5]	75 V	Peak HF tirid No. 1 Voltage (note 2} c.iviiiiiiiinneennnnns 53 60 75 volts
DC Plate Current eiiiieiererroncosonssssnssansonssaas [1]	140 mA	DC Plate Current eiiiieiererroncosonssssnssansonssaas 140 140 200 mA
DC Plate Current eiiiieiererroncosonssssnssansonssaas [2]	140 mA	DC Plate Current eiiiieiererroncosonssssnssansonssaas 140 140 200 mA
DC Plate Current eiiiieiererroncosonssssnssansonssaas [3]	200 mA	DC Plate Current eiiiieiererroncosonssssnssansonssaas 140 140 200 mA
DC Grid No [1]	2 A	DC Grid No. 2 Current iiiiverrocscsoannnnens ceier e 10 10 18 nA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Grid No [2]	10 A	DC Grid No. 2 Current iiiiverrocscsoannnens ceier e 10 10 18 nA
DC Grid No [3]	10 A	DC Grid No. 2 Current iiiiverrocscsoannnens ceier e 10 10 18 nA
DC Grid No [4]	18 A	DC Grid No. 2 Current iiiiverrocscsoannnens ceier e 10 10 18 nA
DC Grid No [1]	1 A	DC Grid No. 1 Current approx. .eeeeeeeresscesesocoannns - - 1
DC Grid No [2]	1 A	DC Grid No. 1 Current approx. .eeeeeeeresscesesocoannns - - 1
Driving Power approx. .;	0.1 W	Driving Power approx. .;..... - 0.1 watis
Note [1]	2 V	Note 2. Grid No. 1 to Cathode peak voltage should not exceed + 300V.
Note [2]	1 V	Note 2. Grid No. 1 to Cathode peak voltage should not exceed + 300V.
Note [3]	300 V	Note 2. Grid No. 1 to Cathode peak voltage should not exceed + 300V.
Grid No	3 W	Grid No.3-Moduiated RF Power Amplifier-Class C Telephony
DC Plate Voltage S tdaecetriacecacannana Cesctesietanaennan	1500 V	DC Plate Voltage S tdaecetriacecacannana Cesctesietanaennan . 1500 volts
DC Grid No [1]	2 V	DC Grid No. 2 Voltage ciiiiuinnnnn. e et tietane e . 400 volts
DC Grid No [2]	400 V	DC Grid No. 2 Voltage ciiiiuinnnnn. e et tietane e . 400 volts
DC Grid No [1]	1 V	DC Grid No. 1 Voltage e, JE -300 volts
DC Grid No [2]	-300 V	DC Grid No. 1 Voltage e, JE -300 volts
DC CGrid No	2 A	DC CGrid No. 2 Current ieiiniennnaennns ceenen ceetesaaaaas et m?
Heater negative with respect to cathode ..o oo,	200	Heater negative with respect to cathode ..o oo, 200 volts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Plate Voltage sheeesessececeerssertasett e [1]	1250 V	DC Plate Voltage sheeesessececeerssertasett e 1250 125G volts
DC Plate Voltage sheeesessececeerssertasett e [2]	125 V	DC Plate Voltage sheeesessececeerssertasett e 1250 125G volts
DC Grid No [1]	3	DC Grid No. 3 VOolt8Ze ..ttt ineinenoenosnnsacoanssonenansas ~-100 -100 ~oltz
DC Grid No [2]	-100	DC Grid No. 3 VOolt8Ze ..ttt ineinenoenosnnsacoanssonenansas ~-100 -100 ~oltz
DC Grid No [3]	-100	DC Grid No. 3 VOolt8Ze ..ttt ineinenoenosnnsacoanssonenansas ~-100 -100 ~oltz
Grid Yo, [1]	2	Grid Yo, 2 Series Resistor (note 3) ottt ittt 43 A\
Grid Yo, [2]	3	Grid Yo, 2 Series Resistor (note 3) ottt ittt 43 A\
Grid Yo, [3]	43	Grid Yo, 2 Series Resistor (note 3) ottt ittt 43 A\
GRID NO3 ϕOUTAGE(EC=	0	GRID NO3 ϕOUTAGE(EC=0v
Llczrooma f., i HEATER VOLTASE(Ef)	-82	. Llczrooma f., i HEATER VOLTASE(Ef)-82VAL
GRID N2	3 V	GRID N23 VOLTAGEIECH
o GRID NO2 VOLTAZE/Z...=	30	o GRID NO2 VOLTAZE/Z...= 30v3S
Published value [1]	3 V	3. 43 IN froz uncodulated plate-voltage supply and 4.5 ke from fixii SHPP-
Published value [2]	43 V	3. 43 IN froz uncodulated plate-voltage supply and 4.5 ke from fixii SHPP-
Published value [3]	4.5 V	3. 43 IN froz uncodulated plate-voltage supply and 4.5 ke from fixii SHPP-
DC Grid No	3	DC Grid No. 3 Vol Tace velis
Bc Grid ~o [1]	1	Bc Grid ~o. 1 Cur et e > s 0 = e
Bc Grid ~o [2]	0	Bc Grid ~o. 1 Cur et e > s 0 = e
Plate Inpunt e e e o	300	Plate Inpunt e e e o . 300 watls
Grid No	2	Grid No. 2 Dissip ation watts
Grid No [1]	1	Grid No. 1 Dissip ation ® e o 8 a8 08 00 watts

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid No [2]	8	Grid No. 1 Dissipation @ 8 a8 08 00 watts
Grid No [3]	8	Grid No. 1 Dissipation @ 8 a8 08 00 watts
Grid No [4]	0	Grid No. 1 Dissipation @ 8 a8 08 00 watts
DC Grid Yo	3	DC Grid Yo. 3 Vol taze e ee iensee volis
DC CGrid YNo [1]	2	DC CGrid YNo. 2 Vo1 Tare . c e s e e PP \4:'.7'
DC CGrid YNo [2]	4	DC CGrid YNo. 2 Vo1 Tare . c e s e e PP \4:'.7'
DC CGrid YNo [3]	7	DC CGrid YNo. 2 Vo1 Tare . c e s e e PP \4:'.7'
= oo HEATER VOUTAGE(Efi	63	= oo HEATER VOUTAGE(Efi 63V AC
' \ LA VHEATER VUCTAGL ([1]	141	' \ LA VHEATER VUCTAGL (141 - F 1 VAL
' \ LA VHEATER VUCTAGL ([2]	1	' \ LA VHEATER VUCTAGL (141 - F 1 VAL
Plate Dissiparicon note [1]	1	Plate Dissiparicon note 1) o i iieenn... et e 120
Plate Dissiparicon note [2]	120	Plate Dissiparicon note 1) o i iieenn... et e 120
Grid No [1]	2 W	Grid No. 2 Dissipation (note 1) ..vieinvennnnnnnn., Ce et essa et eaaaa i
Grid No [2]	1 W	Grid No. 2 Dissipation (note 1) ..vieinvennnnnnnn., Ce et essa et eaaaa i
Hewtor postcive » it rosnect to cathode (oo o0 [1]	0	Hewtor postcive » it rosnect to cathode (oo o0 0., .o 200 valts
Hewtor postcive » it rosnect to cathode (oo o0 [2]	200	Hewtor postcive » it rosnect to cathode (oo o0 0., .o 200 valts
Grid No. I Cireain gesistance, with fixed bhias	101	Grid No. I Cireain gesistance, with fixed bhias 101 ' . max.,
Note	1	Note 1., Averaged over any audio-frequency cvcele of sine-wave form.
DC Plate Voliare ..., Ceceeneacans s s s [1]	0	DC Plate Voliare ..., Ceceeneacans s s s 000 300 30 voltis
DC Plate Voliare ..., Ceceeneacans s s s [2]	300	DC Plate Voliare ..., Ceceeneacans s s s 000 300 30 voltis

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
DC Plate Voltage ... , Ceceeneacans s s s [3]	30	DC Plate Voltage ... , Ceceeneacans s s s 000 300 30 volts
DC Grid No	3 V	DC Grid No. 3 Voltage it eieenanss volts
DC Grid Vo [1]	2	DC Grid Vo. 2 Voltage it eieenanss ettt ettt e 300 volts
DC Grid Vo [2]	300	DC Grid Vo. 2 Voltage it eieenanss ettt ettt e 300 volts
Peak \F Grid No [1]	1 V	Peak \F Grid No. 1 to Grid No. 1 Voltage Ceiaaaa. 100 volts
Peak \F Grid No [2]	1 V	Peak \F Grid No. 1 to Grid No. 1 Voltage Ceiaaaa. 100 volts
Peak \F Grid No [3]	100 V	Peak \F Grid No. 1 to Grid No. 1 Voltage Ceiaaaa. 100 volts
Zero Signal I Plate Current eeeeeeenan	80	Zero Signal I Plate Current eeeeeeenan 80 mA
Maximum Signal DT Plate Current	280 mA	Maximum Signal DT Plate Current 280 ra
Maximum Signal LC Grid No [1]	2 A	Maximum Signal LC Grid No. 2 Current 20
Maximum Signal LC Grid No [2]	20 A	Maximum Signal LC Grid No. 2 Current 20
Effective Load Resistance, Plate to Plate [1]	5000	Effective Load Resistance, Plate to Plate . 5000 5800 8800
Effective Load Resistance, Plate to Plate [2]	5800	Effective Load Resistance, Plate to Plate . 5000 5800 8800
Effective Load Resistance, Plate to Plate [3]	8800	Effective Load Resistance, Plate to Plate . 5000 5800 8800