

ELECTRONIC TUBE REFERENCE

TH289

Power - Tetrode (NOT beam) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
TETRODE

Transmitting power tetrode designed for RF amplification, communications, industrial RF generation, oscillation, modulation, or frequency multiplication.

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 Tetrode
No fixed ratings recorded.
Published electrical data audited and retained in parameter table.

The TH289 is a forced-air-cooled transmitting tetrode intended for RF linear power-amplifier and frequency-modulation service.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1972 Thomson CSF

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

1972 THOMSON CSF

Section 1 · Tetrode

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Filamentvoltage	6 V	Filamentvoltage, 6.0x2 % Vv
Filament current, approximate ttt	42 A	Filament current, approximate ttt 42 A
Interelectrode capacitances (approximate) with grounded cathode (	1 pF	Interelectrode capacitances (approximate) with grounded cathode (1) :
controlgrid-anode	0.7	-controlgrid-anode 0.7 pF
Transconductance (la= [1]	1	Transconductance (la=1A) iinnn. 19 mA/V
Transconductance (la= [2]	19	Transconductance (la=1A) iinnn. 19 mA/V
{inlet air temperature = [1]	25 kW	- {inlet air temperature = 25 °C - Anode dissipation = 2. 5 kW) e 4.5 ~m®/mn
{inlet air temperature = [2]	2 kW	- {inlet air temperature = 25 °C - Anode dissipation = 2. 5 kW) e 4.5 ~m®/mn
{inlet air temperature = [3]	5 kW	- {inlet air temperature = 25 °C - Anode dissipation = 2. 5 kW) e 4.5 ~m®/mn
{inlet air temperature = [4]	4.5 kW	- {inlet air temperature = 25 °C - Anode dissipation = 2. 5 kW) e 4.5 ~m®/mn
normal mounting (anodedown)	5	- normal mounting (anodedown) 5 mB
Maximum inlet air temperature	55	Maximum inlet air temperature 55 °c
Maximum glass insulator and electrode terminals temperature	150	Maximum glass insulator and electrode terminals temperature 150 °c

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
([1]	1	(1) Measured with a 50 x 50 cm ² metallic plate around screen-grid.
([2]	50	(1) Measured with a 50 x 50 cm ² metallic plate around screen-grid.
([3]	50	(1) Measured with a 50 x 50 cm ² metallic plate around screen-grid.
D.C.grid n® [1]	2	D.C.grid n® 2VOMage .+ .o v ittt e 600
D.C.grid n® [2]	600	D.C.grid n® 2VOMage .+ .o v ittt e 600
D.C.grid n" TVOMAgE .+ v v vttt et et	300	D.C.grid n" TVOMAgE .+ v v vttt et et - 300
Peak cathode current t i e e	1.5 A	Peak cathode current t i e e 1.5
Average cathode current e e	2.2 A	Average cathode current e e 2.2
Anodedissipation e e e e	3 W	Anodedissipation e e e e 3.0
Grid n° [1]	2 W	Grid n° 2. dissipation 60
Grid n° [2]	60 W	Grid n° 2. dissipation 60
Grid n° [1]	1 W	Grid n° 1.dissipation . . . v et e 20
Grid n° [2]	20 W	Grid n° 1.dissipation . . . v et e 20
D.C.anodevoltage [1]	3.2 V	D.C.anodevoltage 3.2 2.0
D.C.anodevoltage [2]	2 V	D.C.anodevoltage 3.2 2.0
D.C.agridn° [1]	2 V	D.C.agridn° 2voltage ttt e 450 450
D.C.agridn° [2]	450 V	D.C.agridn° 2voltage ttt e 450 450
D.C.agridn° [3]	450 V	D.C.agridn° 2voltage ttt e 450 450
Grid n® [1]	1 V	Grid n® 1 R.F.peak voltage . . v oo v i i it e e e i et e 135 110
Grid n® [2]	135 V	Grid n® 1 R.F.peak voltage . . v oo v i i it e e e i et e 135 110
Grid n® [3]	110 V	Grid n® 1 R.F.peak voltage . . v oo v i i it e e e i et e 135 110
Anode current at zerosignal e [1]	750 mA	Anode current at zerosignal e 0.75 0.6
Anode current at zerosignal e [2]	600 mA	Anode current at zerosignal e 0.75 0.6
D.C.grid n° [1]	2	D.C.grid n° 2 CUMENT, @PPrOX. « v v v vt et i et e e e 35 20

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
D.C.grid n° [2]	35	D.C.grid n° 2 CUMENT, @PPrOX. « v v v vt et i et e e e 35 20
D.C.grid n° [3]	20	D.C.grid n° 2 CUMENT, @PPrOX. « v v v vt et i et e e e 35 20
D.C.grid n° [1]	1	D.C.grid n° 1 CUITENT, PPIOX. o v v v v vt et e e e et eee e e e 5 0
D.C.grid n° [2]	5	D.C.grid n° 1 CUITENT, PPIOX. o v v v v vt et e e e et eee e e e 5 0
D.C.grid n° [3]	0	D.C.grid n° 1 CUITENT, PPIOX. o v v v v vt et e e e et eee e e e 5 0
INPUL POWER e e e [1]	4.2 W	INPUL POWER e e e 4.2 2.8
INPUL POWER e e e [2]	2.8 W	INPUL POWER e e e 4.2 2.8
Anode dissipation e e e [1]	2.1 W	Anode dissipation e e e 2.1 1.5
Anode dissipation e e e [2]	1.5 W	Anode dissipation e e e 2.1 1.5
FREQUENCY MODULATION R.F. POWER AMPLIFIER AT	110 MHz	FREQUENCY MODULATION R.F. POWER AMPLIFIER AT 110 MHz
D.C.anodevoltage [1]	0 V	D.C.anodevoltage 0ttt iur e 4.5 kV
D.C.anodevoltage [2]	4.5 V	D.C.anodevoltage 0ttt iur e 4.5 kV
D.C.grid n" [1]	2	D.C.grid n" 2VoMage .« v oo it v it it e 600 \Y
D.C.grid n" [2]	600	D.C.grid n" 2VoMage .« v oo it v it it e 600 \Y
D.C.grid N TVOIagE v vt et ot ettt e e e	300	D.C.grid N TVOIagE v vt et ot ettt e e e - 300 \')
Peak cathode current e	7.5 A	Peak cathode current e 7.5 A
Average anode CUIrent v i i vttt e e	1.3	Average anode CUIrent v i i vttt e e 1.3 A
Anode dissipation e e e e	3 kW	Anode dissipation e e e e 3.0 kW
Grid n° [1]	2 W	Grid n° 2 disSiPation e 60 w
Grid n° [2]	60 W	Grid n° 2 disSiPation e 60 w
Grid n° [1]	1 W	Grid n° 1 dissipation R 20 w
Grid n° [2]	20 W	Grid n° 1 dissipation R 20 w
D.C.anodevbltage e [1]	3	D.C.anodevbltage e 3 4 kV

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
D.C.anodevbltage e [2]	4	D.C.anodevbltage e 3 4 kV
D.C.gridn° [1]	2 V	D.C.gridn° 2voltage oi i 450 450 \;
D.C.gridn° [2]	450 V	D.C.gridn° 2voltage oi i 450 450 \;
D.C.gridn° [3]	450 V	D.C.gridn° 2voltage oi i 450 450 \;
Gridn® [1]	1 V	Gridn® 1 R.F.peak voltage o v et 220 220 \Y
Gridn® [2]	220 V	Gridn® 1 R.F.peak voltage o v et 220 220 \Y
Gridn® [3]	220 V	Gridn® 1 R.F.peak voltage o v et 220 220 \Y
D.C.anodecurrent it e [1]	1.2 A	D.C.anodecurrent it e 1.2 1.2 A
D.C.anodecurrent it e [2]	1.2 A	D.C.anodecurrent it e 1.2 1.2 A
D.C. grid n° [1]	2 A	D.C. grid n°2 current, approx. P 70 60 mA
D.C. grid n° [2]	70 A	D.C. grid n°2 current, approx. P 70 60 mA
D.C. grid n° [3]	60 A	D.C. grid n°2 current, approx. P 70 60 mA
D.C.grid n° [1]	1	D.C.grid n° 1 CUITENT, 8PPrOX. . v v vt e e e e e e e e e e e 20 20 mA
D.C.grid n° [2]	8	D.C.grid n° 1 CUITENT, 8PPrOX. . v v vt e e e e e e e e e e e 20 20 mA
D.C.grid n° [3]	20	D.C.grid n° 1 CUITENT, 8PPrOX. . v v vt e e e e e e e e e e e 20 20 mA
D.C.grid n° [4]	20	D.C.grid n° 1 CUITENT, 8PPrOX. . v v vt e e e e e e e e e e e 20 20 mA
INPUt POWER . . .t e e e e e e [1]	3.6 kW	INPUt POWER . . .t e e e e e 3.6 4.8 kW
INPUt POWER . . .t e e e e e e [2]	4.8 kW	INPUt POWER . . .t e e e e e 3.6 4.8 kW
Anode dissipation L e [1]	1.1 kW	Anode dissipation L e 1.1 1.3 kW
Anode dissipation L e [2]	1.3 kW	Anode dissipation L e 1.1 1.3 kW
Output power, approx. ([1]	1 kW	Output power, approx. (1) 2.5 3.5 kW
Output power, approx. ([2]	2.5 kW	Output power, approx. (1) 2.5 3.5 kW

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Output power, approx. ([3]	3.5 kW	Output power, approx. (1) 2.5 3.5 kW
P]	40	P] 40° temperature
anode peut dissiper une puissance maximum de	3 kW	anode peut dissiper une puissance maximum de 3 kW,
Tension de chauffage iy	6 V	Tension de chauffage iy 6.0 V 2%
Capacités interélectrodes approximatifs avec cathode a la masse (	1 pF	Capacités interélectrodes approximatifs avec cathode a la masse (1) :
grille de commande-anode, ... L o	0.7	- grille de commande-anode, ... L o 0.7 pF
Pente (pour un courant anodique [1]	1 A	Pente (pour un courant anodique de 1 A) 19 mA/V
Pente (pour un courant anodique [2]	19 A	Pente (pour un courant anodique de 1 A) 19 mA/V
montage normal (anode en bas)	5	- montage normal (anode en bas) 5 mB
(	1 pF	(1) Les capacités
Tension continue d'anode	4.5 V	Tension continue d'anode ... 4.5
Tension continue de grille [1]	2 V	Tension continue de grille 2 .. 600
Tension continue de grille [2]	600 V	Tension continue de grille 2 .. 600
Tension continue de grille [1]	1 V	Tension continue de grille 1 .. —300
Tension continue de grille [2]	-300 V	Tension continue de grille 1 .. —300
Courant cathodique de crête	7.5 A	Courant cathodique de crête .. 7.5
Courant cathodique moyen	2.2 A	Courant cathodique moyen .. 2.2
Puissance dissipable sur l'anode	3 W	Puissance dissipable sur l'anode 3.0