



ELECTRONIC TUBE REFERENCE

TH289MA

Power - Tetrode (NOT beam) electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

TETRODE

Thomson-CSF transmitting tetrode designed especially for high-power radio-frequency amplifier service. Its construction supports substantial professional RF output in transmitter equipment.

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

SECTION 1 Tetrode

No fixed ratings recorded.

Published electrical data audited and retained in parameter table.

The TH289MA is a transmitting tetrode especially intended for high-power radio-frequency amplifier 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
Filament voltage ([1]	1 V	Filament voltage (1) ..« o ovvvon om 38 A
Filament voltage ([2]	38 V	Filament voltage (1) ..« o ovvvon om 38 A
Filament current, approxima und ed cathode (	2 A	Filament current, approxima und ed cathode (2) :
Interelectrode capacitances	40 pF	Interelectrode capacitances 40
_ control grid-anode ed grid (	2	_ control grid-anode ed grid (2) :
Interelectrode capacitances	17 pF	Interelectrode capacitances 17 pF
_ cathodeanode eeeeess et	5.5	_ cathodeanode eeeeess et 5.5
Transconductance {la =	1	Transconductance {la =1 Al
anode diss ipat ion =	2.5	anode diss ipat ion = 2.5
Published value [1]	50	50 x 50 cm® metallic plate around grid
Published value [2]	50	50 x 50 cm® metallic plate around grid
FREQUENCY MODULATION RF POWER AMPLIFIER AT	110 MHz	FREQUENCY MODULATION RF POWER AMPLIFIER AT 110 MHz
DCGrid n® [1]	2 V	DCGrid n® 2voltage . .o oo ve et 600 \
DCGrid n® [2]	600 V	DCGrid n® 2voltage . .o oo ve et 600 \
DCgrid n® [1]	1	DCgrid n® 1volagE .« oo ot e e e et e —300 Y
DCgrid n® [2]	-300	DCgrid n® 1volagE .« oo ot e e e et e —300 Y
Peak cathodecurrent	7.5 A	Peak cathodecurrent 7.5 A
DCanode CUFrent . . . i ittt	1.3	DCanode CUFrent . . . i ittt 1.3 A
Anode dissipation , e	3 kW	Anode dissipation , e 3.0 kw
Grid n° [1]	2 W	Grid n° 2. diSSIPAtION « + « e« v e 60 W

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Grid n° [2]	60 W	Grid n° 2. diSSIPAtION « + « e« v e 60 W
Grid n° [1]	1 W	Grid n° 1 dissipation 20 W
Grid n° [2]	20 W	Grid n° 1 dissipation 20 W
DCgridn® [1]	2 V	DCgridn® 2voltage it 600 \%
DCgridn® [2]	600 V	DCgridn® 2voltage it 600 \%
DCgridn® [1]	1 V	DCgridn® 1voltage e -180 V
DCgridn® [2]	-180 V	DCgridn® 1voltage e -180 V
Grid n® [1]	1 V	Grid n® 1 peak RF voltage cuvvurenunn. 250 v
Grid n® [2]	250 V	Grid n® 1 peak RF voltage cuvvurenunn. 250 v
DCanodecurrent t	1.1 A	DCanodecurrent t 1.1 A
DC grid n® [1]	2 A	DC grid n® 2 current, approxXimate un... 70 mA
DC grid n® [2]	70 A	DC grid n® 2 current, approxXimate un... 70 mA
DC grid n° [1]	1 A	DC grid n° 1 current, approxXimate o.... 50 mA
DC grid n° [2]	50 A	DC grid n° 1 current, approxXimate o.... 50 mA
Input power L e e e	5 kW	Input power L e e e 5.0 kW
Output power, approximate ([1]	1 kW	Output power, approximate (1) o ... 3.5 kW
Output power, approximate ([2]	3.5 kW	Output power, approximate (1) o ... 3.5 kW
Published value [1]	1 V	1 - The nominal value 5.6 V of the TH 289MA heater voltage given in Specific Data Sheet corresponds appro-
Published value [2]	5.6 V	1 - The nominal value 5.6 V of the TH 289MA heater voltage given in Specific Data Sheet corresponds appro-
Published value [3]	289 V	1 - The nominal value 5.6 V of the TH 289MA heater voltage given in Specific Data Sheet corresponds appro-
ximately to a value of	5.8 pF	ximately to a value of 5.8 V measured on heater by-pass capacitors at the entrance of the box.

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Published value [1]	2 V	2 - The heater voltage should be measured by using an accurate ferro-magnetic voltmeter (accuracy = 1.5 %).
Published value [2]	1.5 V	2 - The heater voltage should be measured by using an accurate ferro-magnetic voltmeter (accuracy = 1.5 %).
Published value [1]	3 V	3 - The heater voltage adjustment has great influence over the tube life. The nominal value of 5.6 V is an optimum
Published value [2]	6 V	3 - The heater voltage adjustment has great influence over the tube life. The nominal value of 5.6 V is an optimum
Grid g2 voltage =	600 V	Grid g2 voltage = 600 V
> pad	40	> pad 40° (temperature
Grid	2	Grid 2
Filament-cathode Grid	1	Filament-cathode Grid 1
Grid	1	Grid 1
Tension de filament ([1]	1 V	Tension de filament (1) 5,612 % \
Tension de filament ([2]	5612 V	Tension de filament (1) 5,612 % \
Courant filament, approx. ttt it e,	38 A	Courant filament, approx. ttt it e, 38 A
Capacités interélectrodes approximatives avec cathode [1]	3 pF	Capacités interélectrodes approximatives avec cathode 3 la masse (2) :
Capacités interélectrodes approximatives avec cathode [2]	2 pF	Capacités interélectrodes approximatives avec cathode 3 la masse (2) :
grille g1-anode	2	- grille g1-anode 0,2 pF
Capacités interélectrodes approximatives avec grille [1]	3 pF	Capacités interélectrodes approximatives avec grille 3 la masse (2) :
Capacités interélectrodes approximatives avec grille [2]	2 pF	Capacités interélectrodes approximatives avec grille 3 la masse (2) :
cathode-anode	3	-cathode-anode 0,03 pF
Pente (pour uncourant d'anode de T A) TM	20 A	Pente (pour uncourant d'anode de T A) TM 20 mA/V
dissipation d'anode = [1]	2 kW	dissipation d'anode = 2, 5kW) 4,5 m?/mn
dissipation d'anode = [2]	5 kW	dissipation d'anode = 2, 5kW) 4,5 m?/mn

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
dissipation d'anode = [3]	45 kW	dissipation d'anode =2, 5kW) 4,5 m²/mn
montage normal (anodeenbas)	5	- montage normal (anodeenbas) 5 mB
AMPLIFICATEUR H.F. DE PUISSANCE - MODULATION DE FREQUENCE A	110 MHz	AMPLIFICATEUR H.F. DE PUISSANCE - MODULATION DE FREQUENCE A 110 MHz
Tension continue de grille	92 V	Tension continue de grille 92
Courant continu de grille	92 A	Courant continu de grille 92, approx. mA
Puissance de sortie, approx. (	1 kW	Puissance de sortie, approx. (1) i i i e kW
La valeur nominale de la tension de chauffage du tube TH [1]	289 V	La valeur nominale de la tension de chauffage du tube TH 289 MA fixée 4 5,6 V dans la notice, correspond
La valeur nominale de la tension de chauffage du tube TH [2]	4 V	La valeur nominale de la tension de chauffage du tube TH 289 MA fixée 4 5,6 V dans la notice, correspond
La valeur nominale de la tension de chauffage du tube TH [3]	56 V	La valeur nominale de la tension de chauffage du tube TH 289 MA fixée 4 5,6 V dans la notice, correspond
approximativement a une tension de [1]	58 V	approximativement a une tension de 5,8 V mesurée sur les condensateurs de traversée découplage filament 3
approximativement a une tension de [2]	3 V	approximativement a une tension de 5,8 V mesurée sur les condensateurs de traversée découplage filament 3
Published value	56 W	5,6 V est une valeur optimale assurant pour tous les tubes un compromis entre la puissance de sortie et une
TENSION GRILLE g2 =	600 V	TENSION GRILLE g2 = 600V
anode en bas avec support TH	16044	anode en bas avec support TH 16044
FILAMENT - CATHODE [1]	10	FILAMENT - CATHODE 10 I GRILLE 1
FILAMENT - CATHODE [2]	1	FILAMENT - CATHODE 10 I GRILLE 1

TUBE TINKER

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