

ELECTRONIC TUBE REFERENCE

CMA1234

Specialized - Microwave Tube electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION

CONSTRUCTION

MICROWAVE

Rugged liquid-cooled crossed-field backward-wave oscillator covering approximately 1.06-1.37 GHz with permanent-magnet focusing and at least 250 W output.

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 Microwave
No fixed ratings recorded.
Electrical ratings/characteristics audited; additional published numeric data retained in parameter table.

The CMA1234 is a rugged compact electronically tunable cross-field backward-wave oscillator. It provides at least 250 W from 1.06 to 1.37 GHz and uses metal-ceramic construction, permanent-magnet focusing, and liquid cooling.

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 · Microwave

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
output of at least	250	output of at least 250 W over the frequency range
Heatervoltage ccouemuennnn. n	6.3 V	Heatervoltage ccouemuennnn. n 6.3
Heater CUMENT« v oo e e v i enmeanssenso [1]	3.5	Heater CUMENT« v oo e e v i enmeanssenso 3.5 6.0
Heater CUMENT« v oo e e v i enmeanssenso [2]	6	Heater CUMENT« v oo e e v i enmeanssenso 3.5 6.0
Frequency range cecrooenonnn [1]	1.06	Frequency range cecrooenonnn 1.06 1.37
Frequency range cecrooenonnn [2]	1.37	Frequency range cecrooenonnn 1.06 1.37
Anode to all other electrodes	18	Anode to all other electrodes 18
Solevoltage iiiaeaon [1]	-0.5 V	Solevoltage iiiaeaon -0.5 -1.5
Solevoltage iiiaeaon [2]	-1.5 V	Solevoltage iiiaeaon -0.5 -1.5
Gridvoltage ccieeteeariaonann [1]	-0.1 V	Gridvoltage ccieeteeariaonann -0.1 -1.0
Gridvoltage ccieeteeariaonann [2]	-1 V	Gridvoltage ccieeteeariaonann -0.1 -1.0
Gridcurrent t it e	1 A	Gridcurrent t it e - 1.0
Anodevoltage coocueee	2 V	Anodevoltage coocueee - 2.0
ANODECUITBNT . . . v v c v v e s s oo anosanann [1]	-0.25	ANODECUITBNT . . . v v c v v e s s oo anosanann -0.25 +2.0

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
ANODECUIBNT . . . v v c v v 2 e s s oo anosanann [2]		ANODECUIBNT . . . v v c v v e s s oo anosanann -0.25 +2.0
Linevoltage cccoenunnnnana [1]	1.5 V	Linevoltage cccoenunnnnana 1.5 5.0
Linevoltage cccoenunnnnana [2]	5 V	Linevoltage cccoenunnnnana 1.5 5.0
Linecurrent ecoceeraceaonasan	350 A	Linecurrent ecoceeraceaonasan 350
(	1 V	(1) - All voltages are referred to the cathode.
Coolant temperature . . max [1]	80	Coolant temperature . . max. 80 °c Coolant temperature . . max. 80 °c
Coolant temperature . . max [2]	80	Coolant temperature . . max. 80 °c Coolant temperature . . max. 80 °c
Warm-up time [1]	5 V	Warm-up time 5 - mn Solevoltage -500 -2100 \
Warm-up time [2]	-500 V	Warm-up time 5 - mn Solevoltage -500 -2100 \
Warm-up time [3]	-2100 V	Warm-up time 5 - mn Solevoltage -500 -2100 \
Heater voltage [1]	6 V	Heater voltage 6.0 6.6 \) Grid voltage (3). - —100 +100 \
Heater voltage [2]	6.6 V	Heater voltage 6.0 6.6 \) Grid voltage (3). - —100 +100 \
Heater voltage [3]	3 V	Heater voltage 6.0 6.6 \) Grid voltage (3). - —100 +100 \
Heater voltage [4]	-100 V	Heater voltage 6.0 6.6 \) Grid voltage (3). - —100 +100 \
Heater voltage [5]	100 V	Heater voltage 6.0 6.6 \) Grid voltage (3). - —100 +100 \
Heater surge current [1]	6 V	Heater surge current . . - 6.0 Anode voltage (3) - +200 v
Heater surge current [2]	3 V	Heater surge current . . - 6.0 Anode voltage (3) - +200 v
Heater surge current [3]	200 V	Heater surge current . . - 6.0 Anode voltage (3) - +200 v
Load VSWR ([1]	2 V	Load VSWR (2). K Line voltage - +5.2 kV

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Load VSWR ([2]	5.2 V	Load VSWR (2). K Line voltage - +5.2 kV
Ambient temperature [1]	-40 A	Ambient temperature . —40 +110 C Line current - 440 mA
Ambient temperature [2]	110 A	Ambient temperature . —40 +110 C Line current - 440 mA
Ambient temperature [3]	440 A	Ambient temperature . —40 +110 C Line current - 440 mA
Heater voltage [1]	6.3 GHz	Heater voltage 6.3 \ ' Oscillating frequency : 1.06 1.37 GHz
Heater voltage [2]	1.06 GHz	Heater voltage 6.3 \ ' Oscillating frequency : 1.06 1.37 GHz
Heater voltage [3]	1.37 GHz	Heater voltage 6.3 \ ' Oscillating frequency : 1.06 1.37 GHz
Heater current	4.5 A	Heater current 4.5 A
Sole voltage [1]	-0.9 V	Sole voltage -0.9 kV Anode voltage 970 960 \)
Sole voltage [2]	970 V	Sole voltage -0.9 kV Anode voltage 970 960 \)
Sole voltage [3]	960 V	Sole voltage -0.9 kV Anode voltage 970 960 \)
Gridvoltage [1]	-0.4 V	Gridvoltage -0.4 kV Linevoltage. 2.55 4.75 kV
Gridvoltage [2]	2.55 V	Gridvoltage -0.4 kV Linevoltage. 2.55 4.75 kV
Gridvoltage [3]	4.75 V	Gridvoltage -0.4 kV Linevoltage. 2.55 4.75 kV
Gridcurrent [1]	0 mA	Gridcurrent. 0 mA Solecurrent. 15 60 mA
Gridcurrent [2]	15 A	Gridcurrent. 0 mA Solecurrent. 15 60 mA
Gridcurrent [3]	60 A	Gridcurrent. 0 mA Solecurrent. 15 60 mA
Linecurrent [1]	350 W	Linecurrent. 350 mA Output power 310 540 w
Linecurrent [2]	310 W	Linecurrent. 350 mA Output power 310 540 w
Linecurrent [3]	540 W	Linecurrent. 350 mA Output power 310 540 w