

ELECTRONIC TUBE REFERENCE

CMA1231

Specialized - Microwave Tube electronic tube

CONSOLIDATED TECHNICAL DATA

1 SECTION
CONSTRUCTION
MICROWAVE

Rugged liquid-cooled crossed-field backward-wave oscillator covering approximately 0.52–0.67 GHz with permanent-magnet focusing and at least 260 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 CMA1231 is a rugged compact electronically tunable cross-field backward-wave oscillator for airborne and other demanding equipment. It provides at least 260 W from 0.52 to 0.67 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	260	output of at least 260 W over the frequency range
Heatervoltage cooiiiiiiinenennn	6.3 V	Heatervoltage cooiiiiiiinenennn 6.3 V
Heatercurrent ottt [1]	3.5 A	Heatercurrent ottt 3.5 6.0 A
Heatercurrent ottt [2]	6 A	Heatercurrent ottt 3.5 6.0 A
Frequency range c.couiuennenn [1]	0.52 GHz	Frequency range c.couiuennenn 0.52 0.67 GHz
Frequency range c.couiuennenn [2]	0 GHz	Frequency range c.couiuennenn 0.52 0.67 GHz
Frequency range c.couiuennenn [3]	67 GHz	Frequency range c.couiuennenn 0.52 0.67 GHz
Anode to all other electrodes	22	Anode to all other electrodes - 22 pF
Solevoltage c..... e - [1]	-0.5 V	Solevoltage c..... e -0.5 -1.5 KV
Solevoltage c..... e - [2]	-1.5 V	Solevoltage c..... e -0.5 -1.5 KV
Solecurrent e e [1]	-80 A	Solecurrent e e -80 0 mA
Solecurrent e e [2]	0 mA	Solecurrent e e -80 0 mA
Gridvoltage c.ciiuiennennnn [1]	0.1 V	Gridvoltage c.ciiuiennennnn. 0.1 -1.0 KV
Gridvoltage c.ciiuiennennnn [2]	-1 V	Gridvoltage c.ciiuiennennnn. 0.1 -1.0 KV

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Gridcurrent f e e	1 A	Gridcurrent f e e - 1.0 mA
Anodevoltage,	2 V	Anodevoltage , - 2.0 kV
Anodecurrent S [1]	-250 mA	Anodecurrent S —0.25 +2.0 mA
Anodecurrent S [2]	2 A	Anodecurrent S —0.25 +2.0 mA
Linevoltage [1]	0 V	Linevoltage 0o, 1.5 5.0 kv
Linevoltage [2]	1.5 V	Linevoltage 0o, 1.5 5.0 kv
Linevoltage [3]	5 V	Linevoltage 0o, 1.5 5.0 kv
Linecurrent c.cviunnennn	350 A	Linecurrent c.cviunnennn 350 mA
(	1 V	(1) - All voltages are referred to the cathode.
Coolant temperature . . max [1]	80	Coolant temperature . . max. 80 °cC Coolant temperature . . max. 80 °CφC
Coolant temperature . . max [2]	80	Coolant temperature . . max. 80 °cC Coolant temperature . . max. 80 °CφC
Warm-up time [1]	5 V	Warm-up time 5 - mn Sole voltage (3). -50 +50 \Y
Warm-up time [2]	3 V	Warm-up time 5 - mn Sole voltage (3). -50 +50 \Y
Warm-up time [3]	-50 V	Warm-up time 5 - mn Sole voltage (3). -50 +50 \Y
Warm-up time [4]	50 V	Warm-up time 5 - mn Sole voltage (3). -50 +50 \Y
Heater voltage [1]	6.1 V	Heater voltage 6.1 6.6 \2 Grid voltage cee o -1 kV
Heater voltage [2]	6.6 V	Heater voltage 6.1 6.6 \2 Grid voltage cee o -1 kV
Heater voltage [3]	2 V	Heater voltage 6.1 6.6 \2 Grid voltage cee o -1 kV
Heater voltage [4]	-1 V	Heater voltage 6.1 6.6 \2 Grid voltage cee o -1 kV
Heater surge current . . — [1]	10 V	Heater surge current . . — 10 A Anode voltage RN - 2.2 kV
Heater surge current . . — [2]	2.2 V	Heater surge current . . — 10 A Anode voltage RN - 2.2 kV

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Load VSWR ([1]	2 V	Load VSWR (2). - 3:1 Line voltage. - 5.2 kV
Load VSWR ([2]	3 V	Load VSWR (2). - 3:1 Line voltage. - 5.2 kV
Load VSWR ([3]	1 V	Load VSWR (2). - 3:1 Line voltage. - 5.2 kV
Load VSWR ([4]	5.2 V	Load VSWR (2). - 3:1 Line voltage. - 5.2 kV
Ambient temperature [1]	-40 A	Ambient temperature . —40 +110 °c Linecurrent — 375 mA
Ambient temperature [2]	110 A	Ambient temperature . —40 +110 °c Linecurrent — 375 mA
Ambient temperature [3]	375 A	Ambient temperature . —40 +110 °c Linecurrent — 375 mA
Heater voltage [1]	6.3 GHz	Heater voltage 6.3 \Y, Oscillating frequency : 0.52 0.67 GHz
Heater voltage [2]	0.52 GHz	Heater voltage 6.3 \Y, Oscillating frequency : 0.52 0.67 GHz
Heater voltage [3]	0.67 GHz	Heater voltage 6.3 \Y, Oscillating frequency : 0.52 0.67 GHz
Heater current	4.5 A	Heater current 4.5 A
Solevoltage ! [1]	-0.9 V	Solevoltage ! -0.9 kV Anode voltage 0.89 0.90 kV
Solevoltage ! [2]	0.89 V	Solevoltage ! -0.9 kV Anode voltage 0.89 0.90 kV
Solevoltage ! [3]	0.9 V	Solevoltage ! -0.9 kV Anode voltage 0.89 0.90 kV
Gridvoltage [1]	-0.3 V	Gridvoltage -0.3 kV Linevoltage. 2.60 4.55 kV
Gridvoltage [2]	2.6 V	Gridvoltage -0.3 kV Linevoltage. 2.60 4.55 kV
Gridvoltage [3]	4.55 V	Gridvoltage -0.3 kV Linevoltage. 2.60 4.55 kV
Gridcurrent [1]	0 mA	Gridcurrent. 0 mA Solecurrent. -15 -30 mA
Gridcurrent [2]	-15 A	Gridcurrent. 0 mA Solecurrent. -15 -30 mA
Gridcurrent [3]	-30 A	Gridcurrent. 0 mA Solecurrent. -15 -30 mA

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Linecurrent [1]	350 W	Linecurrent..... 350 mA Output power 280 350 w
Linecurrent [2]	280 W	Linecurrent..... 350 mA Output power 280 350 w
Linecurrent [3]	350 W	Linecurrent..... 350 mA Output power 280 350 w
RF output	21	RF output 21

TUBE TINKER

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and their source documents.

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