

ELECTRONIC TUBE REFERENCE

7008

Specialized - Magnetron electronic tube

CONSOLIDATED TECHNICAL DATA
1 SECTION
CONSTRUCTION
MAGNETRON

Pulsed microwave magnetron oscillator designed for radar or microwave-transmitter service.

GENERAL CHARACTERISTICS

BASE DESIGNATION	—	BASE PINS	—
NOMINAL HEATER	13.75 V / 3.5 A	PARALLEL HEATER	— / —
HEATING	Indirect	SERIES OPERATION	Not specified
CATHODE ARRANGEMENT	Separate cathodes	SECTION CONSTRUCTION	Similar

SECTION RATINGS

SECTION1 Magnetron	
MAXIMUM PLATE VOLTAGE	23000 V
Magnetron. Peak anode voltage/current, pulse input/output, frequency, VSWR, and thermal limits are retained in TUBE_SECTION_PARAMETER because conventional valve promoted fields do not map cleanly.	

Pulsed microwave magnetron oscillator for radar or microwave transmitter service. The supplied datasheet was reviewed for heater/filament data, maximum ratings, operating conditions, capacitances, pulse/RF data, and thermal limits.

SOURCE OPERATING CONDITIONS

[SOURCE PDF](#)

1971 RCA HB3 Binder 6 of 7

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

1971 RCA HB3 BINDER 6 OF 7

Section 1 · Magnetron

CHARACTERISTICS		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Voltage – published value 1	13.75	Published datasheet value
Voltage – published value 2	10	Published datasheet value
Current at 13.75 volts – published value 1	13.75 A	Published datasheet value
Current at 13.75 volts – published value 2	3.15 A	Published datasheet value
current must never exceed 12 amperes, even momentari ly	12 A	Published datasheet value
Frequency – published value 1	8500 MHz	Published datasheet value
Frequency – published value 2	9600 MHz	Published datasheet value
Peak Anode Voltage – published value 1	22000 V	Published datasheet value
Peak Anode Voltage – published value 2	22000 V	Published datasheet value
Peak Anode Current – published value 1	27.5 A	Published datasheet value
Peak Anode Current – published value 2	27.5 A	Published datasheet value
Pulse-Repetition Rate – published value 1	400	Pulse
Pulse-Repetition Rate – published value 2	4000	Pulse
Pulse Duration – published value 1	2.5	Pulse
Pulse Duration – published value 2	0.25	Pulse

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Drive-Shaft Torque – published value 1	6	Published datasheet value
Drive-Shaft Torque – published value 2	6	Published datasheet value
Peak Power Output (Approx.) – published value 1	220000 W	Published datasheet value
Peak Power Output (Approx.) – published value 2	220000 W	Published datasheet value
there is a mismatched load. Arcing In the waveguide due to lack of	20	Published datasheet value
Heater Current – published value 1	1 A	Published datasheet value
Heater Current – published value 2	3.5 A	Published datasheet value
Peak Anode Voltage – published value 1	2000 V	Published datasheet value
Peak Anode Voltage – published value 2	20000 V	Published datasheet value
Peak Anode Voltage – published value 3	23000 V	Published datasheet value
Peak Power Output – published value 1	3000 W	Published datasheet value
Peak Power Output – published value 2	180000 W	Published datasheet value
Pulses Missing from Total – published value 1	45	Pulse
Pulses Missing from Total – published value 2	0.25	Pulse
Note 1 – published value 1	1	Published datasheet value
Note 1 – published value 2	13.75	Published datasheet value
Note 2 – published value 1	2 A	Published datasheet value
Note 2 – published value 2	27.5 A	Published datasheet value
Note 3 – published value 1	3 A	Published datasheet value
Note 3 – published value 2	27.5 A	Published datasheet value
anode voltage in the order of 22 kv., •anode-D1 ock temperature of	22000 V	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
load-voltage standing-wave ratio equal to or less than 1.05	1.05	Published datasheet value
Note 4	4	Pulse
No. 1 15364 with built-in capacitor, or equivalent – published value 1	5 A	Published datasheet value
No. 1 15364 with built-in capacitor, or equivalent – published value 2	27.5 A	Published datasheet value
anode voltage in the order of 22 kv, anode-block temperature of	22000 V	Published datasheet value
115° C approx., pulse duration of 0.25 microsecond, load-voltage – published value 1	115 s	Pulse
115° C approx., pulse duration of 0.25 microsecond, load-voltage – published value 2	0.25 s	Pulse
pulse at which the current is 50 per Cent of the smooth peak value	50	Published datasheet value
leading edge above 50 per cent of the smooth peak value. Measurement of	50	Published datasheet value
with an input capacitance not exceeding 6 μ ft. An oscilloscope of	6	Published datasheet value
maintain the temperature of the anode block below 150° C under	150	Published datasheet value
the temperature of this terminal below 165° C	165	Published datasheet value
No. 1 15364 with built-in capacitor, or equivalent – published value 1	1	Published datasheet value
No. 1 15364 with built-in capacitor, or equivalent – published value 2	15364	Published datasheet value
ing current never exceed, even momentarily, a value of 12	12	Published datasheet value
7008 begins to oscillate, the heater voltage IEfI should be	7008	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
The frequency of the ryoo8 may be preset by turning the	6 mA	Published datasheet value
the drive shaft are required to tune through the 8500-to-9600 – published value 1	8500	Published datasheet value
the drive shaft are required to tune through the 8500-to-9600 – published value 2	9600	Published datasheet value
throughout the temperature range of -55° to 150° C. Mechanical – published value 1	-55	Published datasheet value
throughout the temperature range of -55° to 150° C. Mechanical – published value 2	150	Published datasheet value
FREQUENCY ~Mc~ = 8500	8500 MHz	Published datasheet value
PEAK ANODE AMP RES=27.5	27.5 A	Published datasheet value
PULSE DURATION ~/(1SEC)=2.5	2.5	Pulse
PULSE-REPETITION RATE – published value 1	48	Pulse
PULSE-REPETITION RATE – published value 2	0	Pulse
NOTE 2: THE AXIS OF THE HEATER-CATHODE TERMINAL WILL BE	2	Published datasheet value
NOTE 7	7	Published datasheet value
NOTE 8: THE HEATER TERMINAL AND THE HEATER-CATHODE TER	8	Published datasheet value
NOTE 8	8	Published datasheet value
NOTE 10	10	Published datasheet value
NOTE 1 1 – published value 1	1	Published datasheet value
NOTE 1 1 – published value 2	1	Published datasheet value
PEAK ANODE AMPERES=27.5	27.5 A	Published datasheet value
PULSE DURATION (μSEC)=1	1	Pulse
9308 – published value 1	9308	Pulse
9308 – published value 2	1000	Pulse
AMBIENT TEMPERATURE 'C APPROX,)=25	25	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
AMBIENT TEMPERATURE (C APPROX.) =25 ~ ~■~	25	Published datasheet value
FREQUENCY RANGE (Mc)=8500 TO 9600 – published value 1	8500 MHz	Published datasheet value
FREQUENCY RANGE (Mc)=8500 TO 9600 – published value 2	9600 MHz	Published datasheet value
PULSE DURATION(μSEC)=1	1	Pulse
PULSE-REPETIT ON RATE(PPS) = 1000	1000	Pulse
PULSE DURATION (It, SEC)=2.5	2.5	Pulse
PULSE-REPETITION RATE (PPS)=400	400	Pulse

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
PEAK ANODE VOLTAGE	2000 V	Published datasheet value
PEAK ANODE CURRENT	27.5 mA	Published datasheet value
PEAK POWER INPUT	630000 W	Published datasheet value
AVERAGE POWER INPUT	630 W	Published datasheet value
PULSE DURATION	2.75 mA	Pulse
ANODE-BLOCK TEMPERATURE	150 mA	Published datasheet value
HEATER-CATHODE- TERMINAL TEMPERATURE	165 mA	Published datasheet value
LOAD-VOLTAGE STANDING-WAVE RATIO – published value 1	1 mA	Published datasheet value
LOAD-VOLTAGE STANDING-WAVE RATIO – published value 2	5 mA	Published datasheet value
115° C aDProx., pulse duration of 2.5 microseconds, and maximum – published value 1	115 mA	Pulse
115° C aDProx., pulse duration of 2.5 microseconds, and maximum – published value 2	2.5 mA	Pulse
Ssoo th Peak Pa lue. The maximum value of a smooth curve drawn through	1 mA	Published datasheet value

PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
achieved. Typical servo-drive-shaft torque is 6 ounce-inches	6	Published datasheet value



SOURCE DATA APPENDIX

SOURCE OPERATING CONDITIONS

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 · Magnetron

CHARACTERISTIC		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Frequency Range	8.5-9.6 GHz	—
Heater Voltage	13.75 V	—
Heater Current	2.9-3.3 A	—
RF Output Power	200 kW	—

OTHER		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Peak Anode Voltage	23000 V	—

APPLICATION		
PARAMETER	PUBLISHED VALUE	CONDITION / NOTE
Oscillator Service	Magnetron	—

TUBE TINKER

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