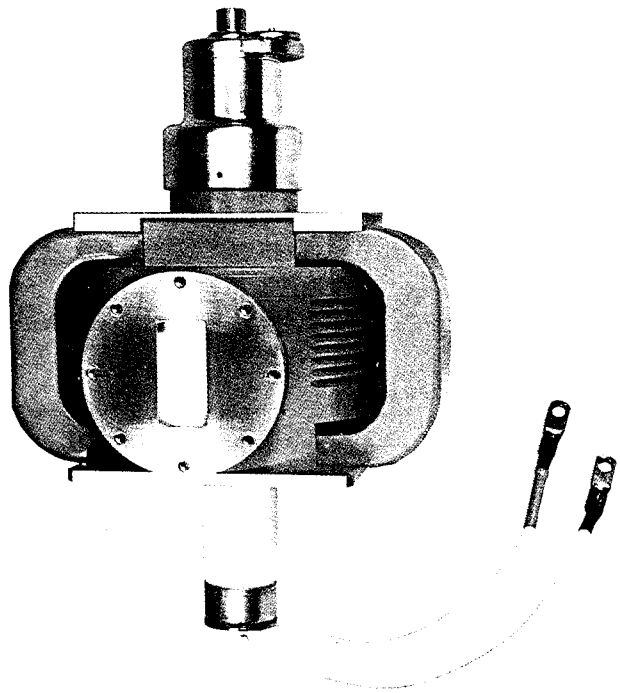
SFD-373

PULSED CEM® COAXIAL MAGNETRON

DESCRIPTION

The SFD-373 is a mechanically-tuned CEM Coaxial Magnetron for use in shipboard and ground-based radars. This tube delivers a minimum peak output of 240 kilowatts over the frequency range of 5.45 to 5.825 gigahertz. It is ideal for weather-radar systems where high reliability and long operating life are desired. The tube has exceptional stability, especially after long shelf life or long standby periods. Operating life expectancy is over 8000 hours.



FEATURES

- Long shelf life
- Exceptional frequency stability
- Snap on test capability
- Extended operating life

GENERAL CHARACTERISTICS

ELECTRICAL

Frequency Range	5.45-5.825 GHz
Power Output, minimum	240 kW
Heater, standby	
Voltage	9.5 V
Current	11.0 A
Warm-up Time, minimum	300 s
Pulling Factor, 1.5:1 VSWR, minimum	6 MHz
Pushing Factor, maximum	50 kHz/A

MECHANICAL

Dimensions	See Outline Drawing
Weight	33 lb
Mounting Position	Any
Cooling	Forced Air
Air flow, minimum	40 ft^3/min
Connectors	
Output Flange	Mates with modified UG-148B/U flange
Cathode	Flying leads
Tuner Shaft, with frequency indicator	Mates with S.S. White RY18-2 flexible shaft

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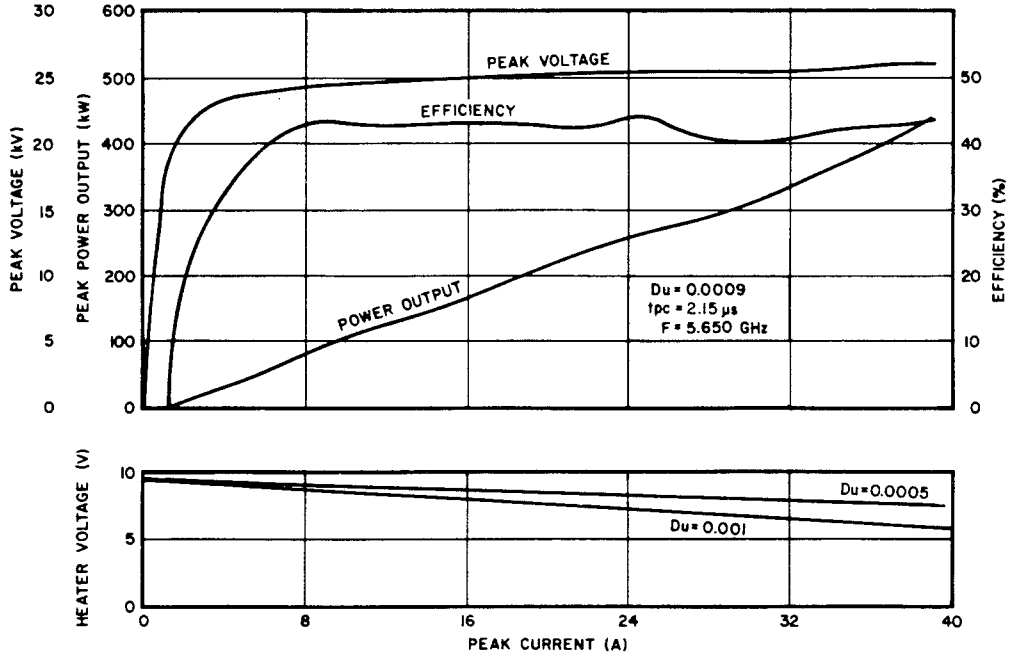
Printed in U.S.A.

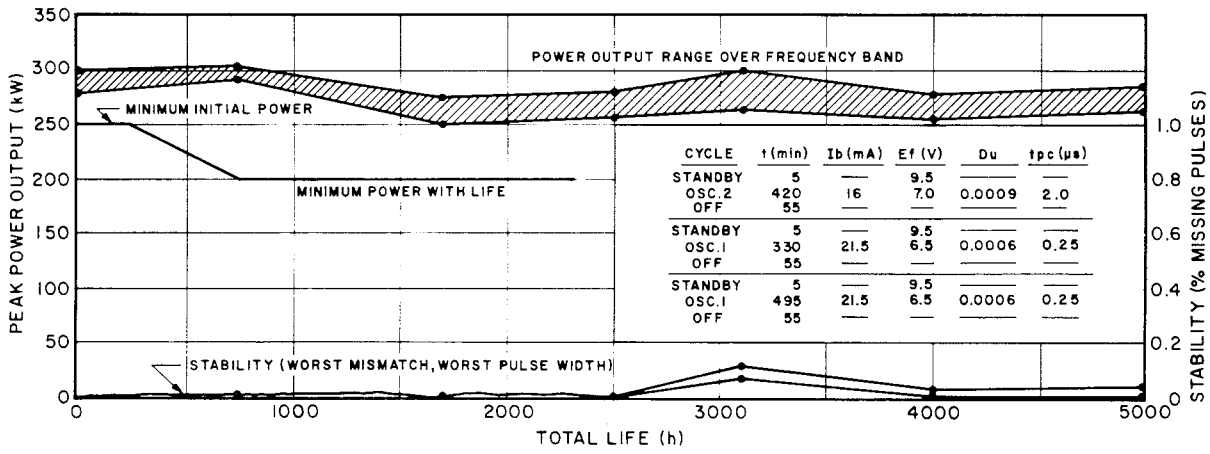
CHARACTERISTIC CURVES

Typical performance values

PERFORMANCE CHARACTERISTICS



INTERMITTENT LIFE TEST CHARACTERISTICS



CYCLE	t (min)	Ib (mA)	Ef (V)	Du	tpc (µs)
STANDBY	5	—	9.5	—	—
OSC.2	420	16	7.0	0.0009	2.0
OFF	55	—	—	—	—
STANDBY	5	—	9.5	—	—
OSC.1	330	21.5	6.5	0.0006	0.25
OFF	55	—	—	—	—
STANDBY	5	—	9.5	—	—
OSC.1	495	21.5	6.5	0.0006	0.25
OFF	55	—	—	—	—

OPERATING CONDITIONS AND RATINGS

	Typical Operation[1,2]	Absolute Ratings[3] Min	Max	
Peak Power Output	270	---	---	kW
Peak Power Input	615	---	1000	kW
Average Power Input	615	---	1000	W
Peak Anode Voltage	25.5	---	28	kV
Peak Anode Current	24	10	35	A
Duty	0.001	---	0.0012	
Pulse Duration	2.0	0.2	3.0	μs
Rate of Rise of Voltage	---	---	125	kV/μs
Heater Voltage[4]	9.5	---	10.5	V
RF Bandwidth, at worst phase of 1.5:1 VSWR	1.2/tpc	---	---	MHz
Side Lobe Ratio	12	---	---	dB
Temperature Coefficient	-0.10	---	---	MHz/°C
Body Temperature	---	---	120	°C
Cathode Bushing Temperature	---	---	270	°C
Load VSWR	1.05:1	---	1.5:1	

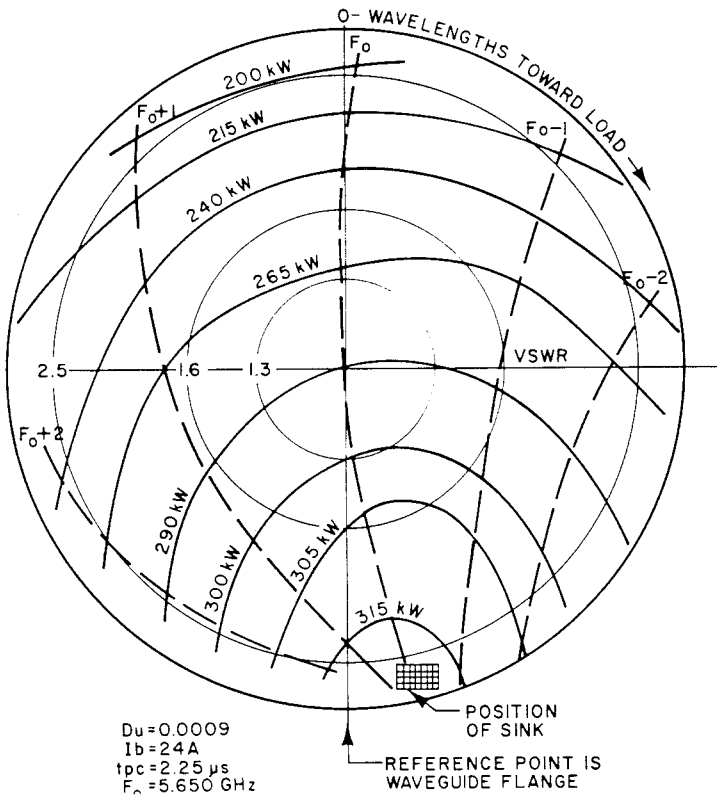
NOTES:

1. Characteristics and operating values are based on performance tests. These figures may change without notice as a result of additional data or product refinement. Contact S-F-D laboratories, inc. before using this information for equipment design.
2. Other combinations of power, duty, or pulse duration may be used. Consult S-F-D laboratories, inc. before operating this tube at conditions other than those indicated above.
3. Ratings should not be exceeded under continuous or transient conditions. A single rating may be the limitation and simultaneous operation at more than one rating may not be possible. Equipment design should limit voltage and environmental variations so that the ratings will never be exceeded.
4. See performance characteristics for preferred heater-voltage settings.

CHARACTERISTIC CURVES

Typical performance values

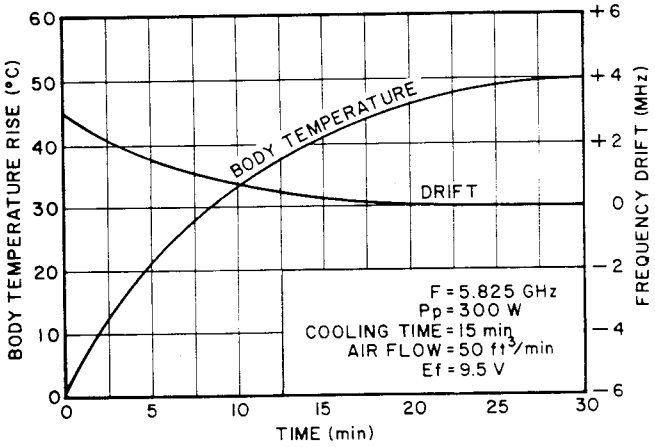
RIEKE DIAGRAM



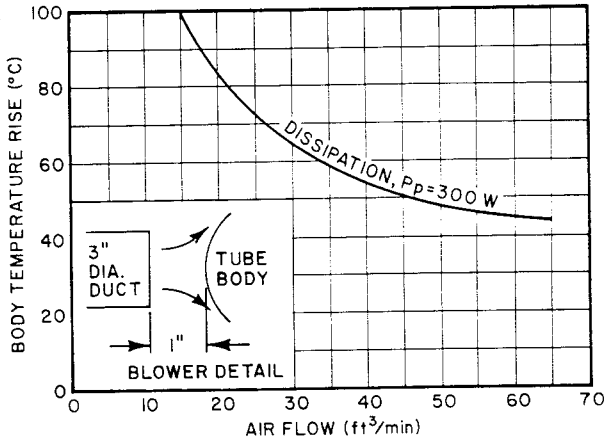
CHARACTERISTIC CURVES

Typical performance values

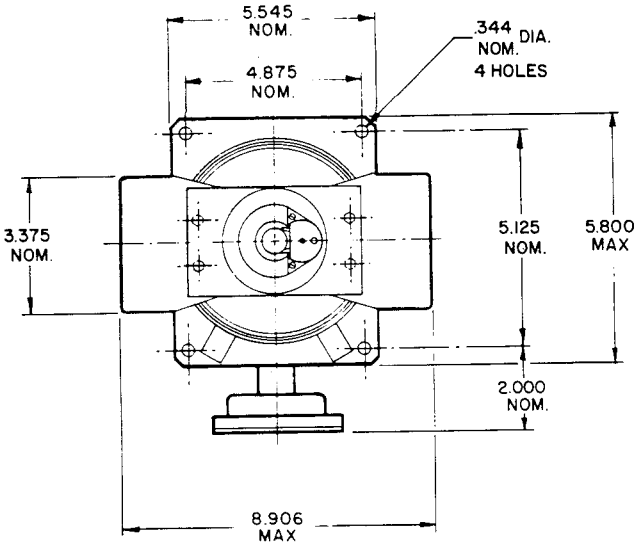
THERMAL DRIFT CHARACTERISTICS

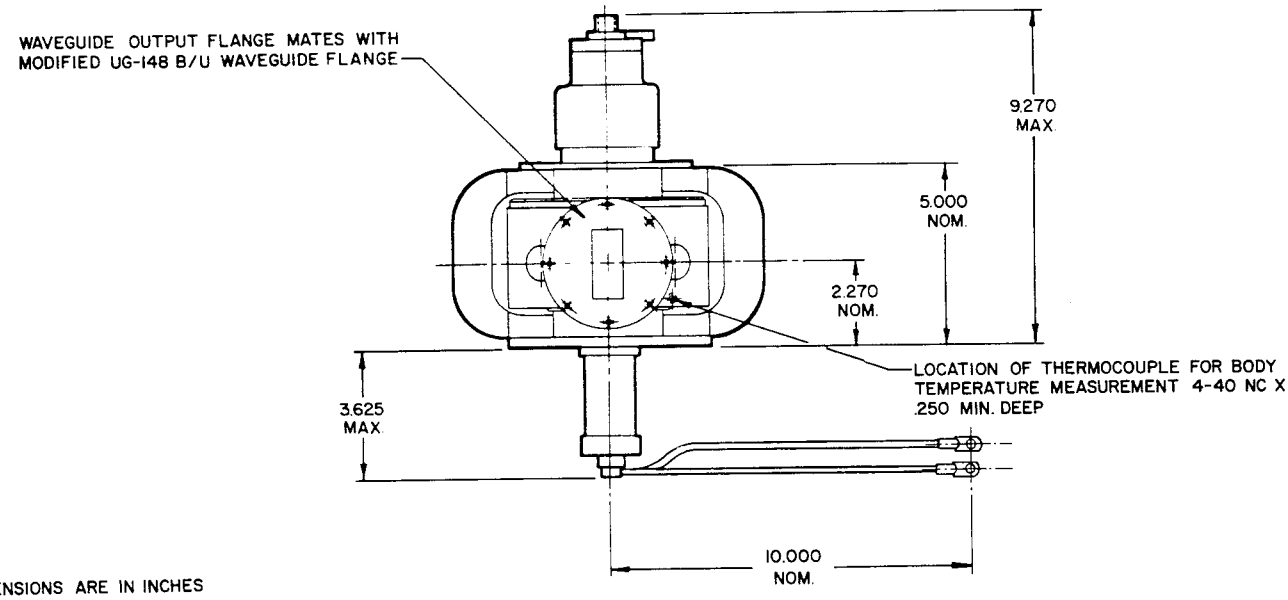


COOLING CHARACTERISTICS



OUTLINE DRAWING





DIMENSIONS ARE IN INCHES