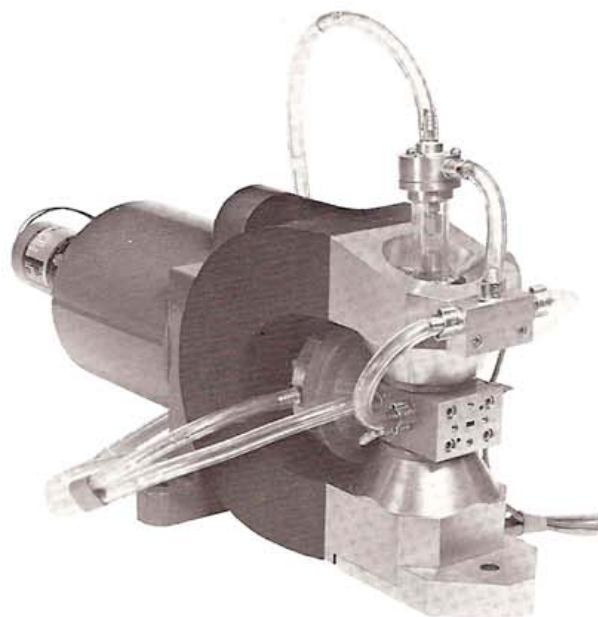


DESCRIPTION

VKE-2409B klystrons are tunable, extended-interaction oscillators for plasma studies, telemetry, and other experimental applications where high electronic efficiency and good frequency stability are essential. Each tube delivers a CW output of at least 5 watts over a 4-gigahertz tuning range selected between 50 and 80 gigahertz. An integral 12-volt d-c motor is provided to facilitate remote tuning.

MAXIMUM RATINGS¹

Beam Voltage	7 kVdc
Beam Current	118 mAdc
Body Current	25 mAdc
Heater Voltage	6.5 V
Body Surface Temperature	32 °C



GENERAL CHARACTERISTICS²

ELECTRICAL

Frequency ³	50-80 GHz
Mechanical Tuning Range, min	±2 GHz
Power Output, min	5 W
Heater Voltage	6.3 ± 0.2 V
Heater Current, at 6.3 V	0.76 A
Tuning Motor	
Voltage	12 Vdc
Current	0.6 Adc

PHYSICAL

Dimensions	See Outline Drawing
Weight, approx	15 lb
Mounting Position	Any
Cooling ⁴	Water
RF Output ⁵	Mates with UG-385/U Flange
Base	Molded Flexible Leads

TYPICAL OPERATING CONDITIONS²

Frequency	75 GHz
Power Output, matched load	13 W
Power Output, optimum load	18 W
Electronic Tuning Range ⁶	150 MHz
Beam Voltage	6 kVdc
Beam Current	93 mAdc
Body Current	10 mAdc
Temperature Coefficient	-1.4 MHz/°C

RANGE VALUES FOR EQUIPMENT DESIGN⁷

	Min	Max
Beam Voltage	5.6	6.9 kVdc
Beam Current	---	115 mAdc
Electronic Tuning Range ⁶ ..	125	--- MHz
Body Current	---	25 mAdc
Heater Current, at 6.3 V ..	0.73	0.79 A

NOTES:

1. 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.
2. Characteristics and operating values are based on performance tests. These figures may change without notice as a result of additional performance data or product refinement. Consult Varian Associates of Canada, Ltd., before using this information for equipment design.
3. When ordering, specify the center frequency or frequency range desired.
4. Distilled water is the preferred coolant. A flow rate of at least 0.2 gal/min (750 cm³/min) is required to cool the tube adequately.
5. Adapters are available to allow the tube to mate with other flange and waveguide combinations.
6. Measured between half-power points.
7. These values are acceptance limits for VKE-2409B series tubes. Equipment design should allow for these variations.

OUTLINE DRAWING

