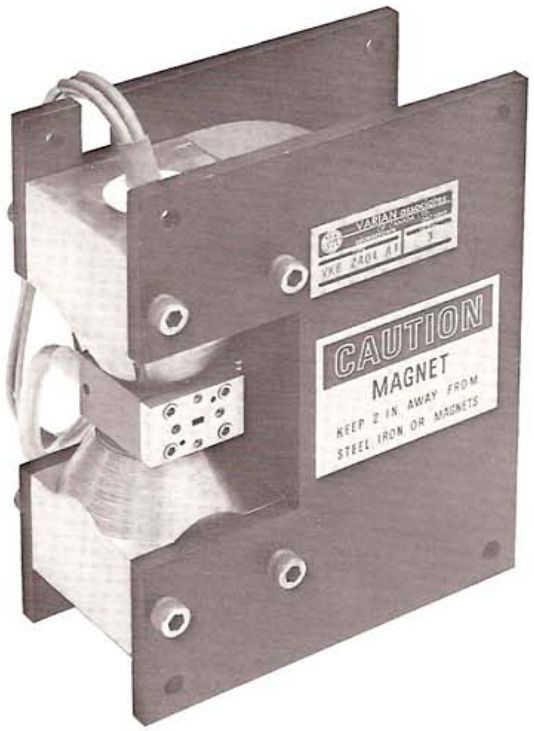
varian associates of canada ltd.

PRELIMINARY
TECHNICAL DATA

VKE-2401A
Series
EXTENDED-INTERACTION
OSCILLATORS
50-80 GHz
35 W

DESCRIPTION

VKE-2401A fixed-frequency, extended-interaction oscillators are for use in plasma studies, radiometry equipment, and many experimental applications. Each tube delivers a typical output of 35 watts into a matched load at a frequency selected between 50 and 80 gigahertz. This ruggedly constructed tube provides high operating efficiency and good frequency stability under adverse environmental conditions.



MAXIMUM RATINGS [1]

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

GENERAL CHARACTERISTICS [2]

ELECTRICAL

Frequency Coverage [3]	50-80 GHz
Power Output, min	10 W
Heater Voltage	6.3 ± 0.2 V
Heater Current, at 6.3 V	0.75 A

PHYSICAL

Dimensions	See Outline Drawing
Weight, approximate	10.25 lb
Mounting Position	Any
Cooling [4]	Water
RF Output Flange [5]	Mates with UG-385/U Flange

TYPICAL OPERATING CONDITIONS [2]

Frequency [3]	60 GHz
Power Output, matched load	35 W
Power Output, optimum load	50 W
Electronic Tuning Range [6]	150 MHz
Beam Voltage	6.8 kVdc
Beam Current	112 mAdc
Body Current	5 mAdc

RANGE VALUES FOR EQUIPMENT DESIGN [7]

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

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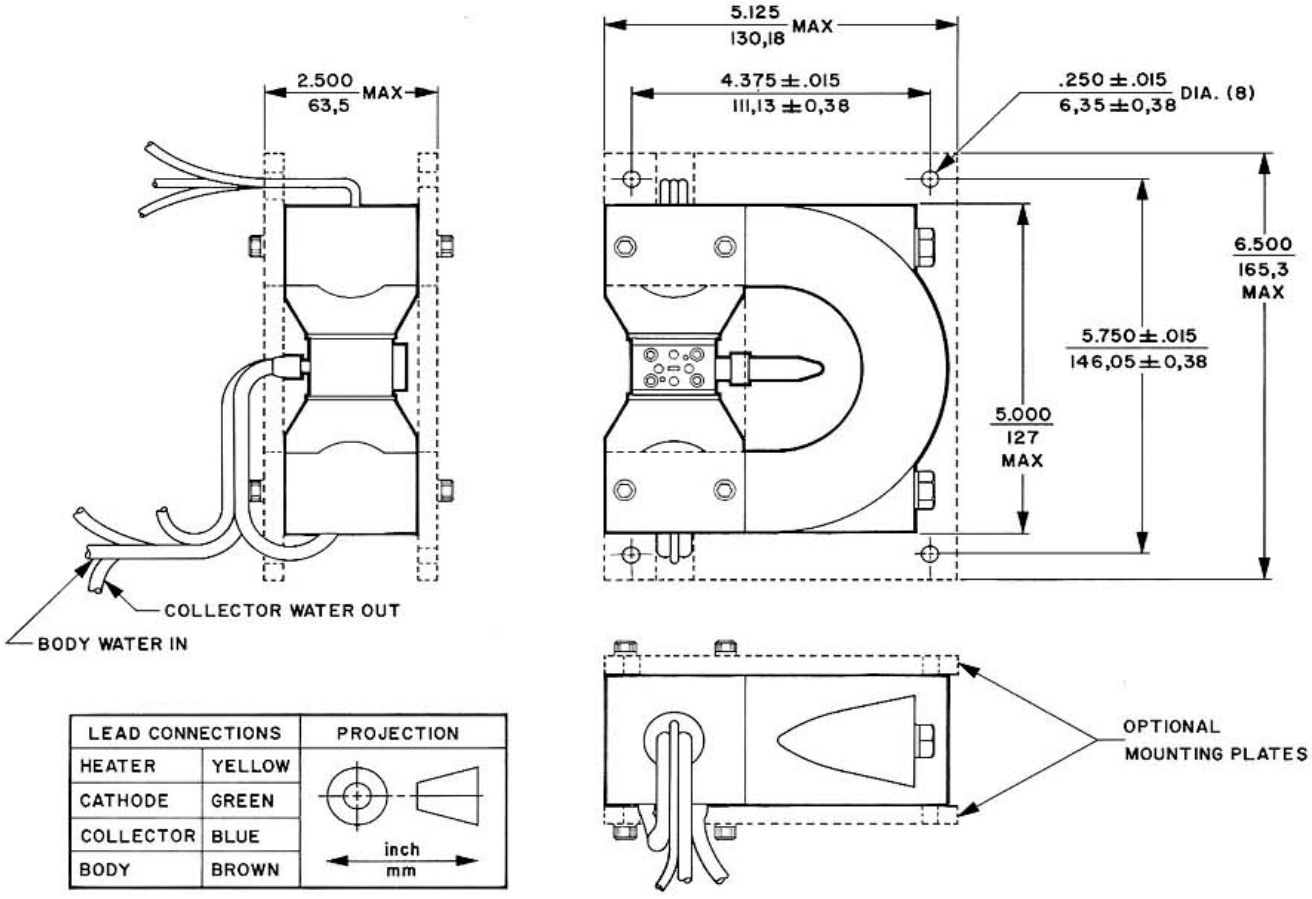
Printed in U.S.A.

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 and frequency tolerance desired.
4. Distilled water is the preferred coolant. A typical flow rate is 0.027 ft^3/min (750 cm^3/min).
5. Adapters are available to allow the tube to mate with other flange and waveguide combinations.
6. Electronic tuning range is measured between half-power points with 60 Hz modulation of beam voltage. CW measurements may be lower because of thermal effects.
7. These values are acceptance limits for VKE-2401A series tubes. Equipment design should allow for these variations.

OUTLINE DRAWING



LEAD CONNECTIONS		PROJECTION
HEATER	YELLOW	
CATHODE	GREEN	
COLLECTOR	BLUE	
BODY	BROWN	inch / mm