



communications & medical products division  
microwave operation

# HIGH POWER TRIM TUNED MMW OSCILLATOR

## 94 to 95 GHz 80 Watts CW

### MODEL SERIES VKB2426N3

#### INTRODUCTION

CPI Canada (CPI) has manufactured millimeter wave Extended Interaction Klystron (EIK) vacuum tubes since 1969. EIKs generate or amplify millimeter wave energy through interaction between a linear electron beam and resonant cavities similar to conventional klystrons. EIKs achieve useful performance by incorporating a slow wave biperiodic ladder circuit to extend the interaction between electron beam and cavities. This allows EIKs to operate up to 280 GHz to-date at power levels suitable for a variety of applications.

#### SCOPE

This document details the performance specifications for the VKB2426N3 Extended Interaction Oscillator (EIOs). The VKB2426N3 is a 94.0 to 95.0 GHz CW EIO manufactured to Communications & Power Industries Canada Inc. commercial workmanship practices. This EIK is compatible with CPI CW power supply model VPW2827.

#### TYPICAL PERFORMANCE

Center Frequency	94.0 to 95.0 GHz
Mechanical Tuning Range	1.0 GHz
Electronic Tuning Range	200 MHz nom.
Power Output	80.0 W min.
Test Frequencies	Every 0.2 GHz
Temperature Coefficient	-2.0 MHz/oC nom.
Cathode Modulation Sens.	0.3 MHz/V nom.
Pulling Figure	100 MHz nom.

#### TYPICAL POWER SUPPLY REQUIREMENTS

Cathode Voltage VK	10.0 kV max.
Cathode Current	100.0 mA max.
Anode Voltage VA wrt VK	6.5 kV max.
Anode Current	+5.0, -1.0 mA max.
Body Current	10.0 mA max.
Heater Voltage	5.7 to 6.3 V range
Heater Current	1.1 A max.
Heater Surge Current	3.0 A nom.
High Voltage Delay (after heater on)	5.0 minutes min.

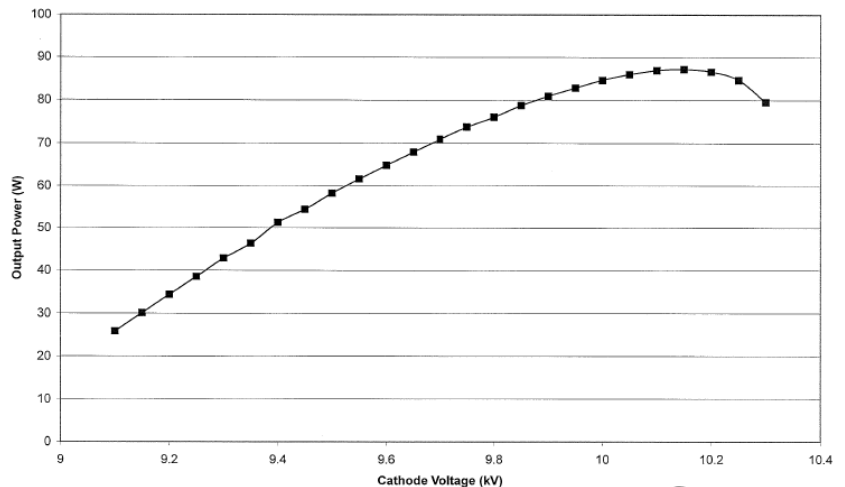
#### COOLING

Coolant Type	deionized water
Total Flow Rate	1.0 L/minute min.
Body Flow Rate	0.5 L/minute min.
Tuner Flow Rate	0.1 L/minute min.
Inlet Water Temperature	30.0 oC max.
Coolant Pressure Drop	200 kPa max.



#### MECHANICAL

Waveguide	RG-138/U(WR10)
Waveguide Flange	Mates with UG387/U
Waveguide Pressurization	N/R
Input Power Connector	Flying Leads
Lead Length	45.0 cm min.
Coolant Hose Connectors	Swagelok type for 6.35mm (1/4") tubing
Number of Complete Tuning Cycles	1000 min.
Overall Dimensions	See Outline Dwg.
Weight	4.5 Kg max.



**Power Output vs Beam Voltage**

#### NOTES:

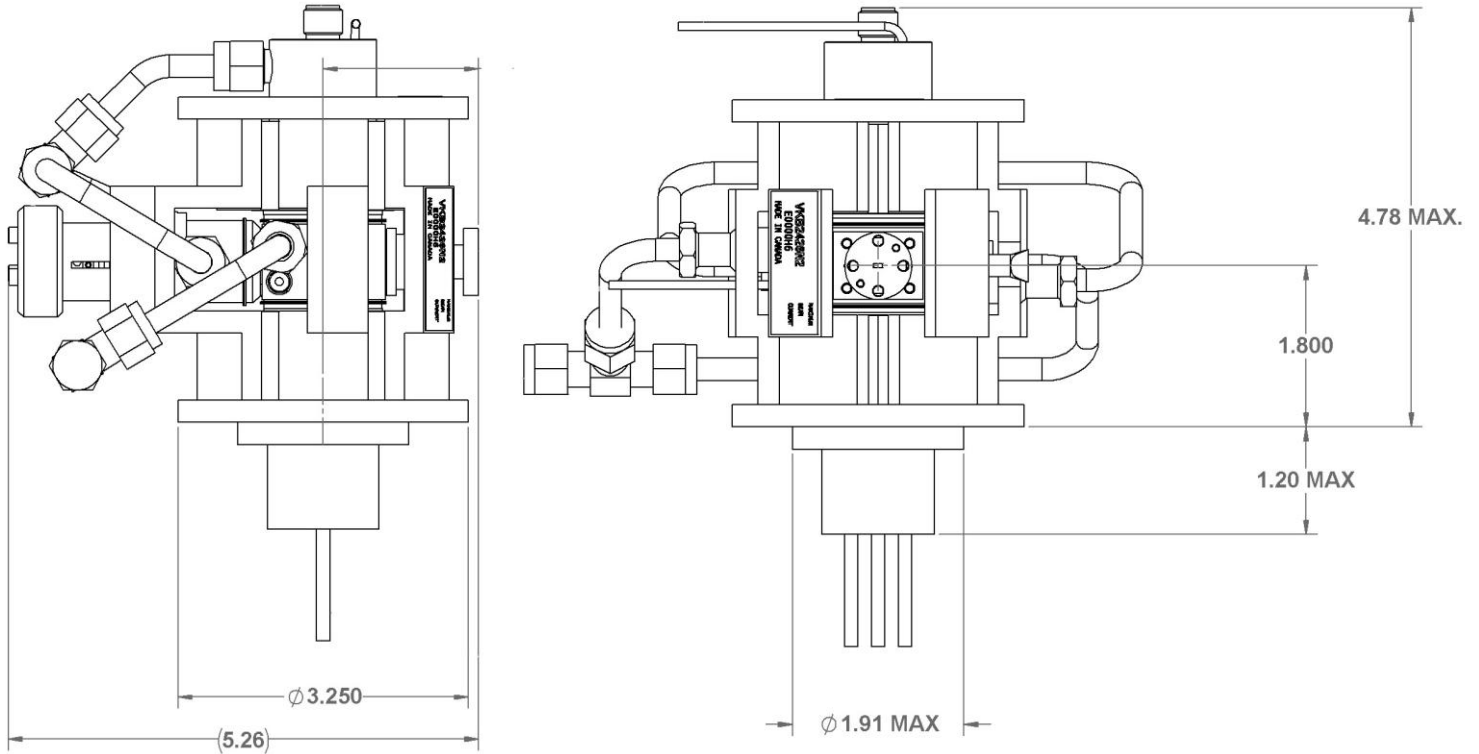
1. Characteristic values are based on performance tests. These values may change without notice.
2. Please consult your local CPI sales office or CPI Canada for more information.



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### OUTLINE DRAWING for reference only



For further information please contact CPI Canada, a field office or local representative they may be found on our web site at:

[www.cpii.com](http://www.cpii.com)

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