

TO8 Packaged Voltage Controlled Oscillators

**MAVCML Series
V1**

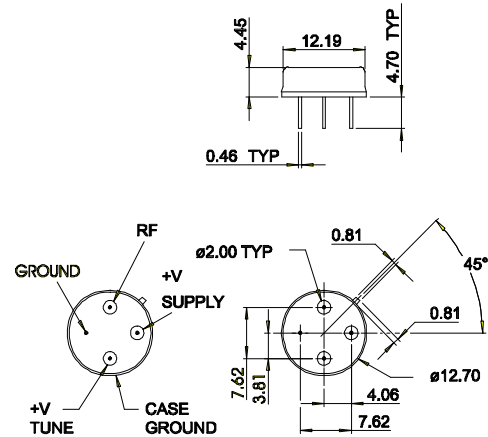
Features

- Extremely Linear Tuning
- High Tuning Speed
- Low Phase Noise
- Thru Hole Mount
- Hermetically Sealed
- Suitable for High Reliability Applications
- Custom Designs Available

Primary Applications

- Radar Receivers
- Communications Systems
- Countermeasure Systems
- Satellite Systems

VCOs have a wide variety of applications where very fast tuning speeds are required. This feature along with our superior output power flatness performance is critical for requirements in radar receivers or for rapid generation of jamming signals in ECM transmitters. When high frequency stability is required for radar, communications synthesizers or frequency converters, these VCOs may be integrated into phase lock loop circuitry. Low phase noise performance of the VCO, with our highly linear tuning, simplifies loop filter design and enables the designer to achieve superior synthesizer performance. These VCOs can be qualified for high reliability and military requirements. The accompanying table is an example of our standard VCO designs. A wide range of custom designs are also available with output frequencies to 8 GHz. Please contact the factory to discuss your requirements.



ALL DIMENSIONS ARE IN MILLIMETERS.
TOLERANCES:-
X.X = ±0.5
X.XX = ±0.2
STANDARD FINISH: GOLD PLATE AND PINS
NICKEL PLATE LID

Description

These designs utilize silicon bipolar devices as the negative resistance generator. The frequency of operation is determined by a varactor diode that serves as a voltage variable capacitor. Silicon hyperabrupt varactors offer the lowest phase noise performance. Careful selection of the varactor diodes manufactured in-house provide linear monotonic tuning characteristics requiring only simple external driver circuits.

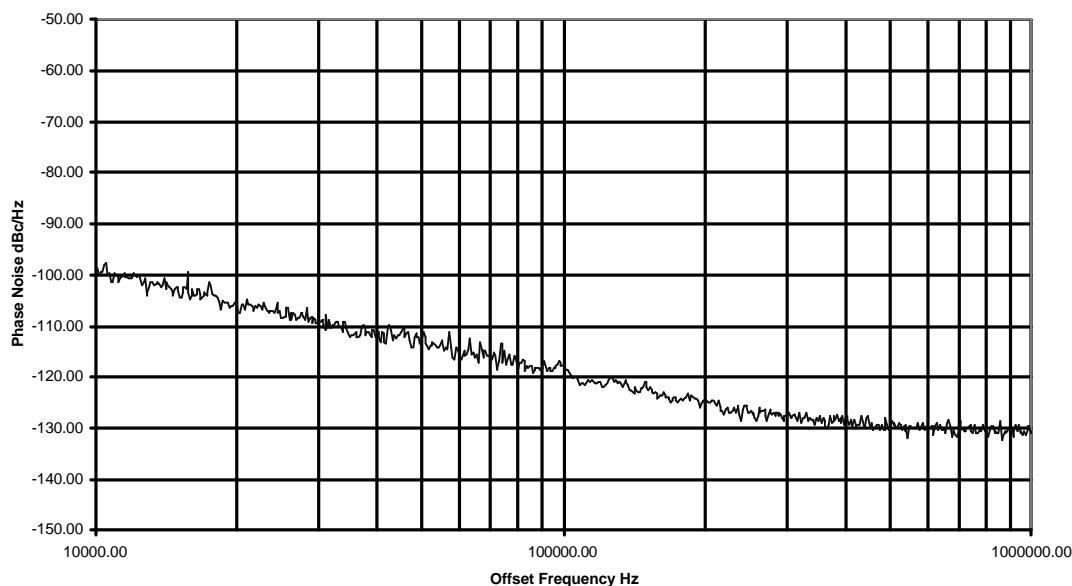
This range of VCOs is constructed using discrete chip device integrated onto a conventional alumina substrate or on a Glass Microwave Integrated Circuit (GMIC™). This is packaged into standard outline TO-8 packages. These packages are hermetically sealed using resistance weld techniques. This compact rugged construction allows for simple installation on either through hole or surface mount PCB, and finds a wide range of applications in demanding military, hi-rel and commercial systems.

Electrical Performance

(Applies over the output frequency range @ +25 °C, output load impedance of 50 ohms. Unless otherwise stated limits & conditions are indicated values.)

VCO Part No.	Frequency	Tuning Voltage	Phase Noise	Power	Harmonics	Temp Range	Power Supply
	GHz		+25 °C (dBc/Hz)	dBm (min)	dBc (max)	(Operating)	V & mA
MAVCML0025	0.42-0.55	2V - 12V	-100 @ 100 KHz	12+/-1.0	-10	-45 to +85 °C	+8V 50mA
MAVCML0026	0.60-0.86	1.5V - 13V	-110 @ 100 KHz	+13+/-1.5	-15	-35 to +85 °C	+15V 50mA
MAVCML0028	0.70-0.90	0V - 30V	-105 @ 100 KHz	+13+/-3.0	-13	-35 to +100 °C	+12V 50mA
MAVCML0029	1.2-1.3	2V-12V	-100 @ 100 KHz	+10+/-1.0	-10	-40 to +85 °C	+8V 40mA
MAVCML0030	1.10-2.10	0V - 20V	-98 @ 100 KHz	+10+/-2.5	-10	-40 to +85 °C	+15V 100mA
MAVCML0031	1.55-2.25	3V - 20V	-100 @ 100 KHz	+9+/-2.5	-10	-40 to +100 °C	+12V 50mA
MAVCML0039	5.79-5.82	0.5V - 4.5V	-100 @ 100 KHz	+10+/-2.0	-12	-45 to +85 °C	+15V 100mA
MAVCML0058	5.7-5.9	0V - 15V	-100 @ 100 KHz	+10 (min)	-12	-55 to +85 °C	+15V 50mA
MAVCML0059	0.4-0.6	0V - 15V	-110 @ 100 KHz	+10 (min)	-10	-30 to +70 °C	+15V 50mA

MAVCML0029 Phase Noise, Carrier = 1.25 GHz



MAVCML0029 Phase Noise T08 VCO