

Features

- Extremely Linear Tuning
- High Tuning Speed
- Low Phase Noise
- Leadless Package
- Hermetically Sealed
- Suitable for High Reliability Applications
- Custom Designs Available

Primary Applications

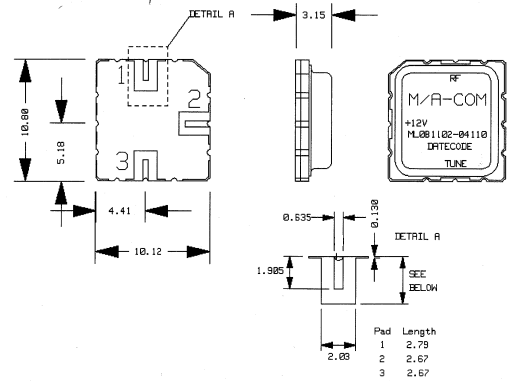
- Radar Receivers
- Communications Systems
- Countermeasure Systems
- Satellite Systems

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 18 GHz except package LCC1 limited up to 6 GHz. Please contact the factory to discuss your requirements.

Description

These designs utilize silicon bipolar and GaAs FET 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.

M/A-COM-UK's range of highly linear leadless voltage controlled oscillators provides excellent phase noise performance in a rugged hermetic package. This range of VCOs is constructed using discrete chip device integrated onto a conventional alumina substrate or on a Glass Microwave Integrated Circuit (GMIC™) packaged into a housing. These packages are then hermetically sealed using resistance weld techniques. The result is a compact rugged design suitable for most severe environmental conditions found in military and hi-rel applications. RF and DC connections are made on to the gold plated thin film substrate.



- NOTES
- 1) Unit to be marked with black indelible ink
 - 2) Tolerance for dimensions:
 XX = +/- 0.508
 X.XX = +/- 0.127
 X.XXX = +/- 0.127

Figure 1. LCC1 Package

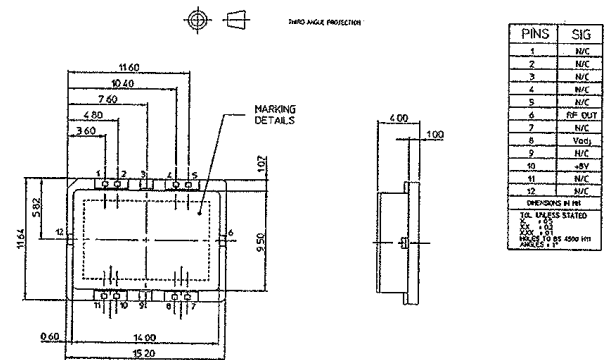


Figure 2. Hermetic Metal Walled Package

Electrical Performance

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

LCC1 Package

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
MAVCML0034	4.20-4.40	0V - 10V	-100 @ 100 KHz	+7.5+/-2.5	-12	-40 to +85 °C	+9V 50mA

Hermetic Metal Walled Package

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
MAVCML0043	10.00-11.00	2V - 12V	-65 @ 100 KHz	+16+/-2	-30	-45 to +85 °C	+8V 110mA
MAVCML0044	13.00-17.00	2V - 12V	-63 @ 100 KHz	+13.5+/-1.5	-30	-45 to +85 °C	+8V 125mA