

### Features

- Extremely Linear Tuning
- High Tuning Speed
- Low Phase Noise
- Field Replaceable Connectors
- Hermetically Sealed
- Suitable for High Reliability Applications
- Custom Designs Available

### Primary Applications

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

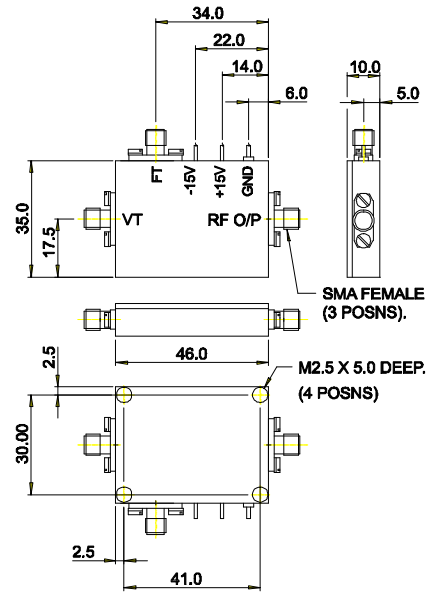
VCOs have a wide variety of applications where very fast tuning speeds are required. This feature along with our superior output power flatness performance is critical for requirements in radar receivers or for rapid generation of jamming signals in ECM transmitters. When high frequency stability is 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. Please contact the factory to discuss your requirements.

### Description

These designs utilize silicon bipolar devices as the negative resistance generator (passive/active frequency doubler used for high frequency requirement). 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 connectorized 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 machined housing. These packages are then hermetically sealed using laser-welding processes. The result is a compact rugged design suitable for most severe environmental conditions found in military and hi-rel applications. The coaxial connectors are removable allowing the devices to be integrated directly into microstrip or stripline circuits.

### "B" Package



ALL DIMENSIONS ARE IN MILLIMETERS.  
 TOLERANCES:-  
 XX = ±0.5  
 XXX = ±0.2  
 STANDARD FINISH:- HOUSING: NICKEL PLATE.  
 COVER: ALOCROM 1200.

## 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
MAVCML0038	5.01-5.11	2V - 10V	-105 @ 100 KHz	+3.5+/-1.5	-15	-45 to +85 °C	+12V 150mA
MAVCML0040	8.95-9.55	-10V to +10V	-85 @ 100 KHz	+16+/-2.0	-20	-55 to +85 °C	-24V 250mA
MAVCML0041 Note 1	8.65-9.25	5V - 15V	-95 @ 100 KHz	+19.5+/-1.5	-30	-40 to +85 °C	+/-15V 175/125mA
MAVCML0042 Note 1	8.65-9.25	5V - 15V	-80 @ 100 KHz	+7.5+/-1.5	-30	-40 to +85 °C	+/-15V 85/55mA
MAVCML0055 Note 2	14.60-15.10	3.5V-10.0V	-92 @ 100 KHz	+8.0+/-2.0	-30	-42 to +75 °C	+7V 100mA -12 V 175mA
MAVCML0056	9.0-9.5	-10V - +10V	-87 @ 100 KHz	+16+/-2.0	-20	-0 to +70 °C	+15V 150mA
MAVCML0057	8.57-9.53	0V - 15V	-100 @ 100 KHz	+13 (min)	-15	-55 to +85 °C	+/-15V 135/75mA

Note 1: Custom coaxial SMA 42 x 31.2 x 10 mm

Note 2: Custom coaxial SMA 80 x 42 x 10.2 mm (This VCO is supplied with dual switched outputs)