MAVC-010000-003500

VCO, SMT
3400-3600 MHz

Rev. D

Features

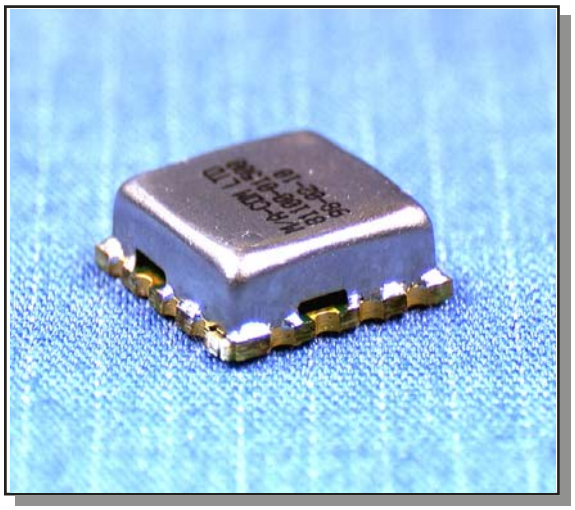
- High Performance, Low Cost
- Low Phase Noise
- Miniature SMT Package (LSM1)
- RoHS Compliant

Description

This VCO, in a SMT package, provides electrical shielding, easy PCB assembly and repeatable performance. The oscillator is designed for use in wireless base stations and other applications.

M/A-COM VCOs are manufactured in an ISO9001 certified facility, incorporating surface mount assembly and automated electrical testing. This ensures consistent electrical performance and quality over volume production quantities.

Devices are designed to function after exposure to the shock, vibration, thermal shock and moisture conditions typically encountered in base station and other infrastructure environments.



Pin Configuration

Pin No.	Function
1	RF Output
2	V_{CC}
3	V_{tune}
4	GND

Electrical Specifications[1]:

T_A = +25°C, Z_0 = 50 Ohms, V_{cc} = 8V.

Parameter	Test Conditions	Units	Min	Typ	Max
Frequency Range	Over T_{op} [2]	MHz	3400		3600
RF Output Power	Over V_{CC} and T_{op} [2]	dBm	+3.0	5	+7.0
Tuning Voltage	Over T_{op} [2]	V	1		18
Phase Noise	SSB at 10 kHz offset from carrier SSB at 100 kHz offset from carrier SSB at 1000 kHz offset from carrier SSB at 10 MHz offset from carrier	dBc/Hz		-100 -120 -140	-96 -116 -136 -154
Tuning Sensitivity		MHz/V	12		20
Harmonic Output		dBc		-30	-10
Frequency Pushing	+7.6V <V_{CC} < +8.4V	MHz/V			15
Frequency Pulling	12dB RL load, all phases	MHz			15
Tuning input capacitance		pF		33	
Supply Voltage (V_{CC})	VCO oscillates	V	7.5	8	8.5
Supply current (Icc)		mA	30	36	47

1. All specification limits are indicated values @ +25 ºC and apply over F_{out} unless otherwise stated.
2. See *Absolute Maximum Ratings* for operating temperature.

• **North America** Tel: 800.366.2266 • **Europe** Tel: +353.21.244.6400
• **India** Tel: +91.80.43537383 • **China** Tel: +86.21.2407.1588
Visit www.macomtech.com for additional data sheets and product information.

Absolute Maximum Ratings T_A = +25°C

Parameter	Absolute Maximum
Supply Voltage (V_{CC})	6.5V to 9.0 V
Operating Temperature	-40°C to +85°C
Storage Temperature	-45°C to +120°C
Solder Assembly Temperature	See App Note M2032

1. Operation of this device above any one of these parameters may cause permanent damage.

Ordering Information

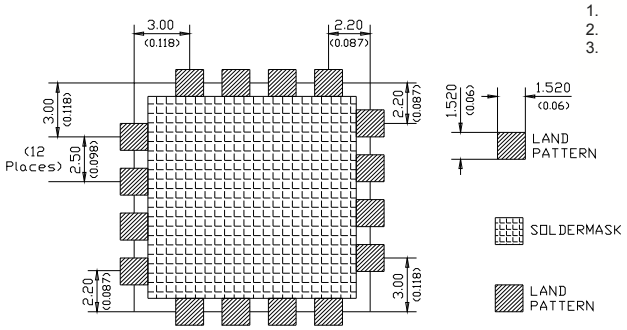
Part Number	Package
MAVC-010000-003500	Tape and Reel (500/Reel) [1]

1. See application note M513.

Environmental Specifications

Devices are designed to function after exposure to vibration, thermal shock and moisture conditions. See *MVS Qual Report* for details of tests performed.

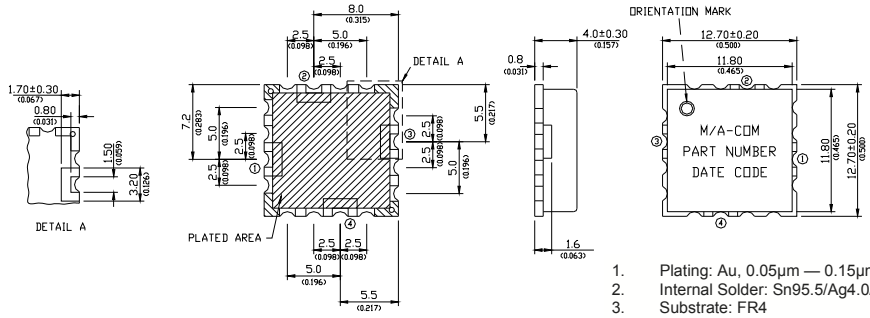
Recommended PCB Layout



1. Tolerance: ±0.1mm
2. View is shown from top of device.
3. Solder masked areas to be left clear. These areas may have active vias.

Note: Dimensions in Millimetres. (Inch dimensions for reference only).

O



1. Plating: Au, 0.05µm — 0.15µm over Ni barrier of 2.5µm — 5.0µm.
2. Internal Solder: Sn95.5/Ag4.0/Cu0.5, lead free.
3. Substrate: FR4
4. Cover: mild steel
5. Tolerance: ±0.2mm unless otherwise noted.

ECO History

Rev	Date	Description	By
prel	7th Sept 2007	Created data sheet	JS
A	7th Jan 2008	Updated based upon latest phase noise data	JS
B	28 May 2008	Update Tune Spec	SC
C	2nd Dec 2008	Phase noise specification updated to reflect actual performance	SC
D	15th Dec 2008	Phase noise adjusted to original customer specification	SC
E	5th Mar 2009	Update guaranteed phase noise figures across the operating temperature	SC