

Features

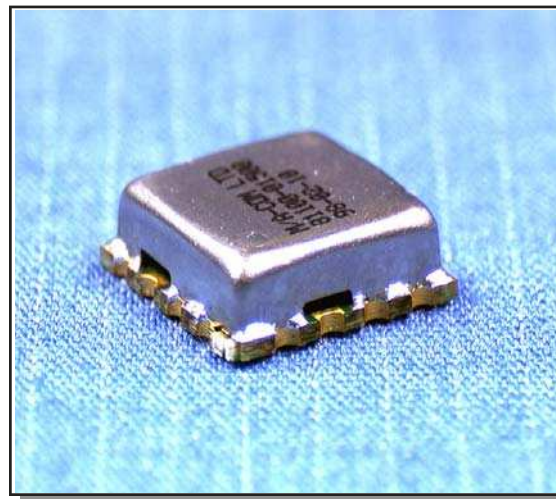
- High Performance, Low Cost
- Low Phase Noise
- Miniature SMT Package (LSM1)
- RoHS Compliant

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 Specifications¹:

T_A = +25°C, Z₀ = 50 Ohms, V_{CC} = 5V.

Parameter	Test Conditions	Units	Min	Typ	Max
Frequency Range	Over T _{op} ²	MHz	1450		1580
RF Output Power	Over V _{CC} and T _{op} ²	dBm	0	1.5	3.0
Tuning Voltage	Over T _{op} ²	V	0.5		11.0
Phase Noise	SSB at 10 kHz offset from carrier SSB at 100 kHz offset from carrier	dBc/Hz		-105 -125	-102 -122
Tuning Sensitivity		MHz/V		17	
Harmonic Output		dBc		-20	-10
Frequency Pushing	V _{CC} = +5.25V ± 0.25V	kHz/V			3.5
Frequency Pulling	1.5:1 VSWR load, all phases	kHz		1.0	2.0
Frequency Drift	Over T _{op} ²	kHz/°C		-0.08	
Tune Input Capacitance		pF			50
Supply Voltage (V _{CC})	VCO oscillates	V	+4.50	+5.00	+5.50
Supply current		mA			30

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

VCO, SMT
1450-1580 MHz

Rev. VD

Absolute Maximum Ratings $T_A = +25^\circ\text{C}$

Parameter	Absolute Maximum
Supply Voltage (V_{CC})	4.5V to 5.5 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

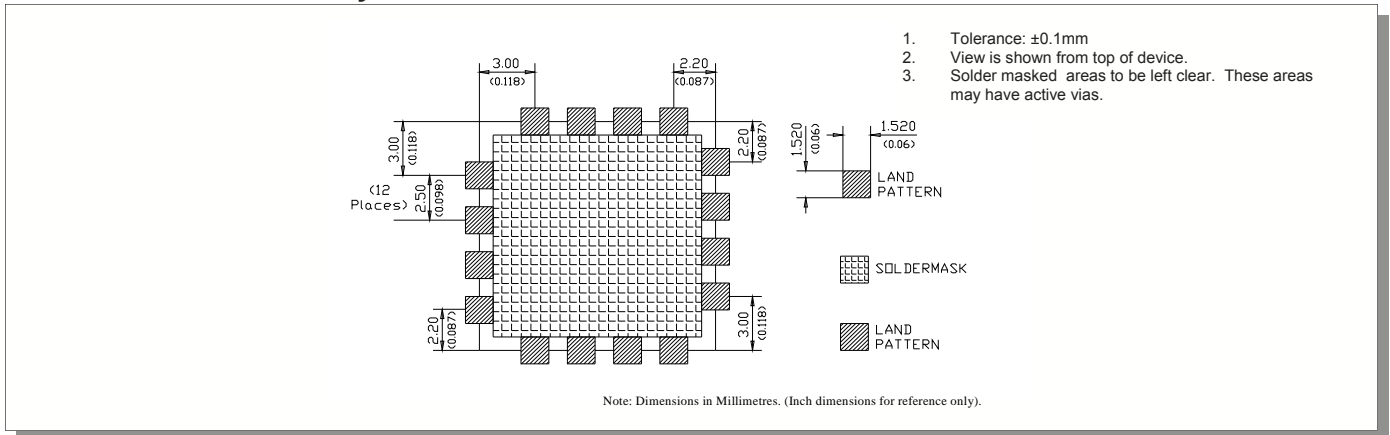
Part Number	Package
MAVC-010000-001515	Tape and Reel (500/Reel) ¹

1. See application note M513.

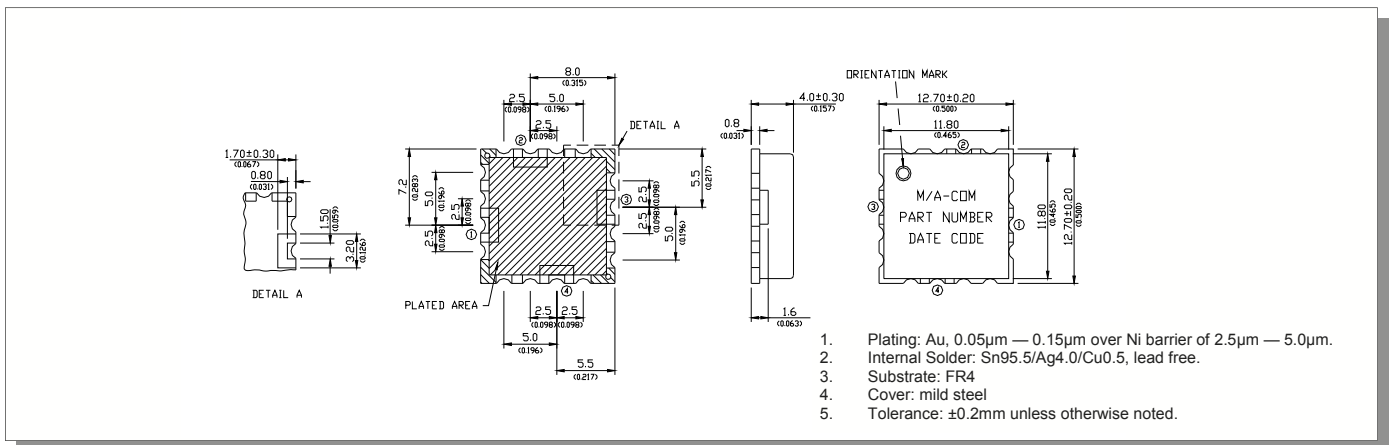
Environmental Specifications

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



Outline Drawing



ECO History

Rev	Date	Description	By
A	15th Sept 2005	Created data sheet	JS
B	15th Feb 2007	Added 100kHz phase noise data	JS
C	27th Feb 2007	Added supply current specification	JS
D	01st Feb 2008	Added RoHs Compliant Statement	JS

2

ADVANCED: Data Sheets contain information regarding a product M/A-COM Technology Solutions is considering for development. Performance is based on target specifications, simulated results, and/or prototype measurements. Commitment to develop is not guaranteed.

PRELIMINARY: Data Sheets contain information regarding a product M/A-COM Technology Solutions has under development. Performance is based on engineering tests. Specifications are typical. Mechanical outline has been fixed. Engineering samples and/or test data may be available. Commitment to produce in volume is not guaranteed.

• **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.

M/A-COM Technology Solutions Inc. and its affiliates reserve the right to make changes to the product(s) or information contained herein without notice.