



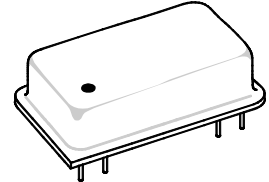
- **SAW Frequency Stabilization**
- **Fundamental-mode Oscillation at 1090.0 MHz**
- **Ideal for ATC/TCAS Transponder Applications**
- **Complies with Directive 2002/95/EC (RoHS)**



The frequency of this oscillator is stabilized by UHF surface-acoustic-wave (SAW) technology, providing excellent performance in a compact, rugged oscillator operating at the fundamental frequency of 1090.0 MHz. The highly-reliable HO1081-4 is designed for use in Mode-S Air Traffic Control Transponders/Traffic Alert and Collision Avoidance Systems (TCAS).

# HO1081-4

## 1090.0 MHz SAW Oscillator



**Dip 16-8 Case**

### Absolute Maximum Ratings

Rating		Value	Units
DC Supply Voltage		0 to +13	VDC
Ambient Temperature	Powered	-55 to +105	°C
	Storage	-55 to +125	

### Electrical Characteristics

Characteristic		Sym	Notes	Minimum	Typical	Maximum	Units
Operating Frequency	Absolute Frequency	$f_O$	1, 7	1089.75	1090.00	1090.25	MHz
	Tolerance from 1090.0 MHz	$\Delta f_O$				$\pm 250$	kHz
RF Output Power		$P_O$	3, 6	+10	+12	+13	dBm
Start-up Time			2, 8			500	ns
Discrete Spurious	Second Harmonics		2, 3, 4		-25	-20	dBc
	Third and Higher Harmonics				-35	-30	
	Nonharmonic				<-100	-80	
SSB Phase Noise	1 kHz Offset		2, 3, 4			-90	dBc/Hz
	10 kHz Offset					-110	
RF Impedance	Nominal Impedance	$Z_O$	3		50		$\Omega$
	Operating Load VSWR	$G_L$	3, 5			1.5:1	
DC Power Supply	Operating/Enable Voltage	$V_{CC}$	3, 6	11.75	12.00	12.25	VDC
	Operating Current	$I_{CC}$			37	40	mA
Operating Ambient Temperature		$T_A$	3, 6	-55		+105	°C
Lid Symbolization (YY=Year, WW=Week)				RFM HO1081-4 YYWW			



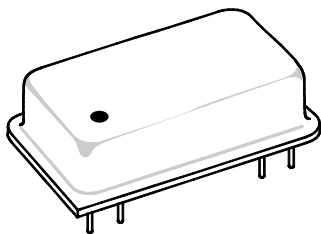
**CAUTION: Electrostatic Sensitive Device. Observe precautions for handling. COCOM CAUTION: Approval by the U.S. Department of Commerce is required prior to export of this device.**

### Notes:

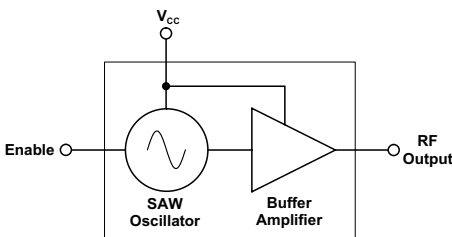
- One or more of the following United States patents apply: 4,760,352; 5,787,117; and 7,260,375.
- Unless noted otherwise, all specifications are listed at  $T_A = +25 \pm 2^\circ\text{C}$ ,  $V_{CC}$  = nominal voltage  $\pm 0.01$  VDC, and load impedance =  $50 \Omega$  with  $VSWR \leq 1.5:1$ .
- The design, manufacturing process, and specifications of this device are subject to change without notice.
- Applies to oscillator only and not to sidebands caused by external electrical or mechanical sources. (Dedicated external voltage regulation with low-frequency filtering for the DC power supply and proper circuit board layout are recommended for optimum spectral purity.)
- For specified maximum operating load VSWR, any angle, at  $F_O$ . No instability or damage will occur for any passive load impedance.
- For any combination of  $V_{CC}$  and  $T_A$  within the specified operating ranges.
- Applies for any combination of Note 5 and 6 conditions.
- Start-up time is defined as the time from when 90% of  $V_{CC}$  is applied to the Enable Pin until the RF output reaches 90% of its steady-state output level.

DIP16-8

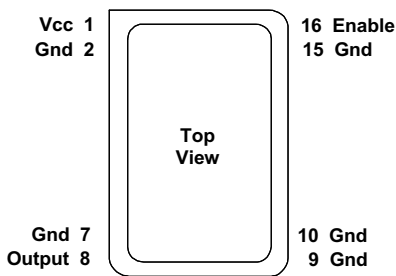
Metal Dual-Inline Package with 8 Leads in a 16-lead DIP Configuration



Block Diagram



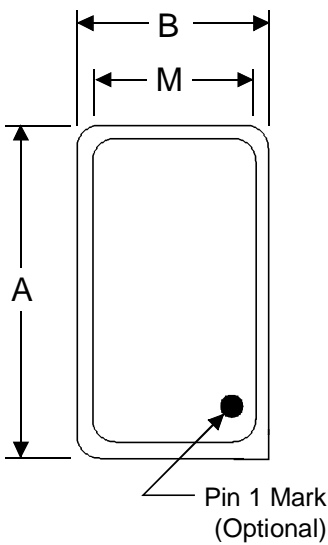
Pin Out



Case Dimensions

Dimension	mm		Inches	
	MIN	MAX	MIN	MAX
A	—	25.02	—	0.985
B	—	12.83	—	0.505
C	—	6.35	—	0.250
D	0.40	0.51	0.016	0.020
E	0.64 Nominal		0.025 Nominal	
F	7.62 Nominal		0.300 Nominal	
G	2.54 Nominal		0.100 Nominal	
H	17.78 Nominal		0.700 Nominal	
K	3.39	6.73	0.130	0.265
L	1.30	—	0.051	—
M	—	11.18	—	0.440
N	—	22.60	—	0.890
R	1.75	2.26	0.069	0.089

Top View



Bottom View

