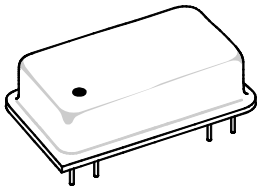
HO1081-4

1090.0 MHz SAW Oscillator

- ***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).



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	Δf_O				±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		Ω
	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.

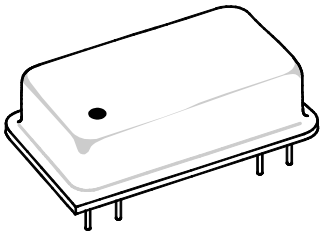
Notes:

1. One or more of the following United States patents apply: 4,760,352; 5,787,117; and 7,260,375.
2. Unless noted otherwise, all specifications are listed at T_A = +25 ±2 °C, V_{CC} = nominal voltage ±0.01 VDC, and load impedance = 50 Ω with VSWR ≤ 1.5:1.
3. The design, manufacturing process, and specifications of this device are subject to change without notice.
4. 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.)
5. For specified maximum operating load VSWR,any angle, at F_O. No instability or damage will occur for any passive load impedance.
6. For any combination of V_{CC} and T_A within the specified operating ranges.
7. Applies for any combination of Note 5 and 6 conditions.
8. Start-up time is defined as the time from when 90% of Vcc is applied to the Enable Pin until the RF output reaches 90% of its steady-state output level.

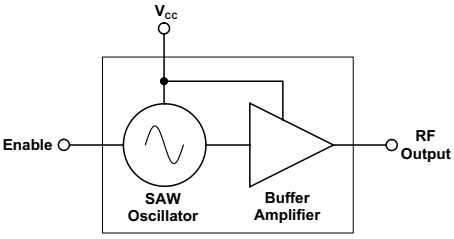
©2010 by RF Monolithics, Inc.

DIP16-8

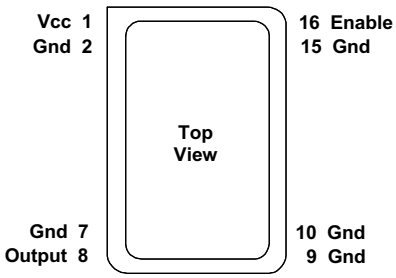
Metal Dual-Inline Package with 8 Leads in a 16-lead DIP Configuration



Block Diagram



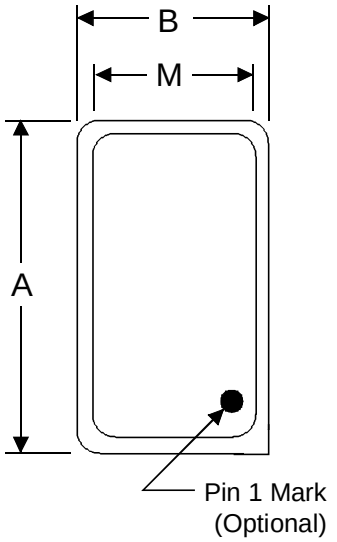
Pin Out



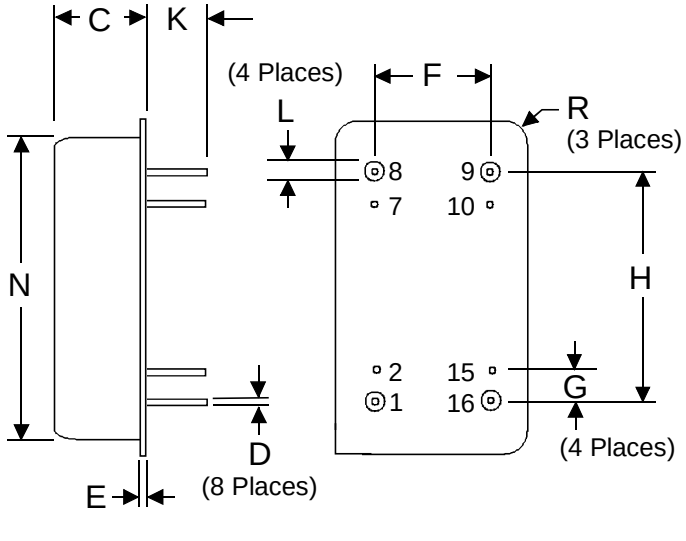
Case Dimensions

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



©2010 by RF Monolithics, Inc.