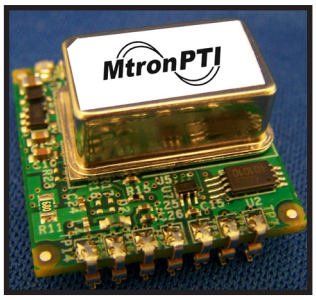
M9107 Series

1 x 1 x 0.5 inches, SMT GPSDO
(Global Positioning Satellite Disciplined Oscillator)

PRELIMINARY



- Small, SMT configuration
- Direct mounting to PCB - eliminates need for expensive connectors and wiring harnesses
- Ideal for precise timing or locating applications such as test equipment, base stations, network timing and military programs
- Compact size - less than 1” x 1”

Module Specifications (Typical):	**M9107**
1 PPS Accuracy	±50ns to UTC RMS (1-Sigma) GPS Locked
Holdover Stability	<±11us over 3 Hour Period @+25°C (No Motion, Still air)
1 PPS Output (OCXO Flywheel Generated)	3.3VDC CMOS
RS-232 Control	SCPI-99 TTL levels GPS NMEA Out
GPS Frequency	L1, C/A 1574MHz
GPS Antenna	Active or Passive
GPS Receiver	50 Channels, Mobile, WAAS, EGNOS, MSAS capable
Sensitivity	Acquisition –142 dBm, Tracking -158 dBm
TTFF	Cold Start - <45 sec, Warm Start – 1 sec, Hot Start - 1 sec
ADEV	1E-11 (Tau=1s), <5E-12 (Tau-10,000s)
TTL Alarm Output	GPS Unlock and Hardware Failure, and LOCK indicators
Warm Up Time / Stabilization Time	<5 min at +25°C to 1E-08 Accuracy
Supply Voltage (Vdd)	3.3 V Single Supply (5V internally generated)
Power Consumption	0.7W Typical
Operating Temperature	-20°C to +70°C
Storage Temperature	-45°C to +85°C
Additional Features	Firmware field-upgradable, external 1PPS input, status LEDs, compatible to GPSCon, SNTP, GPSD, and Z38xx software applications, full NMEA
Oscillator Specification:	
Frequency Output	10MHz
10MHz Retrace	±2E-08 After 1 Hour
Frequency Stability Over Temperature (Unlock Condition)	100ppb pk-pk
Output Amplitude	5.0V CMOS
Warm Up Time	< 1 min @ +25°C
Phase Noise	1Hz: -80dBc/Hz 10Hz: -110dBc/Hz 100Hz: -135dBc/Hz 1kHz: -145dBc/Hz 10kHz: <-145dBc/Hz

MtronPTI reserves the right to make changes to the product(s) and service(s) described herein without notice. No liability is assumed as a result of their use or application.

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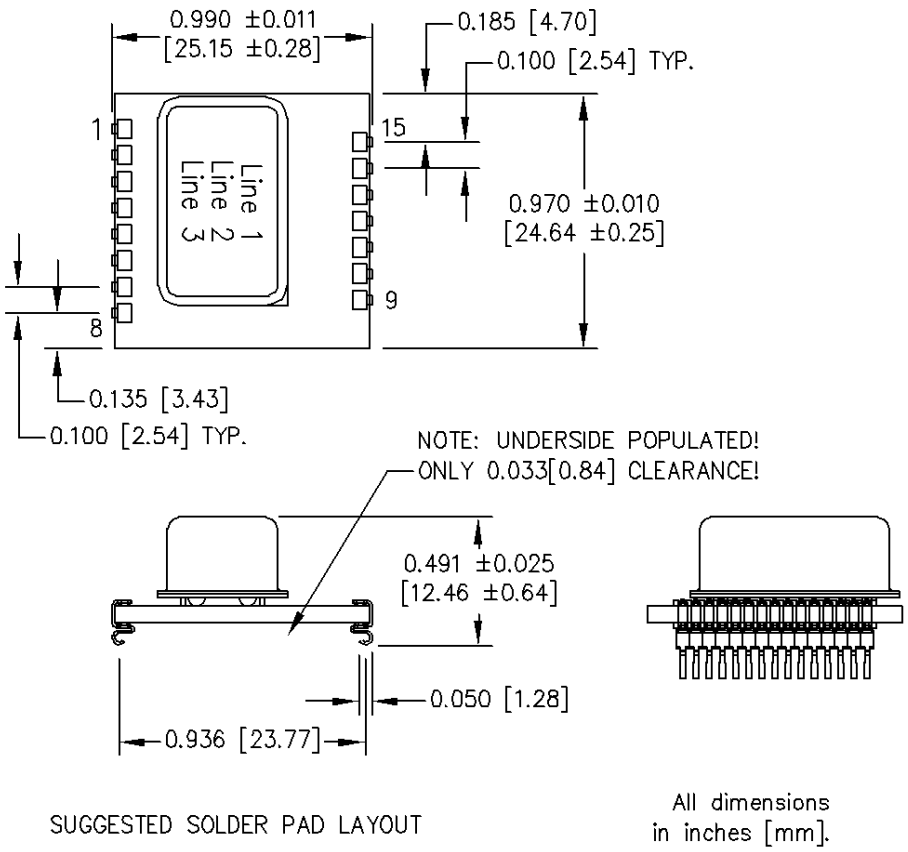
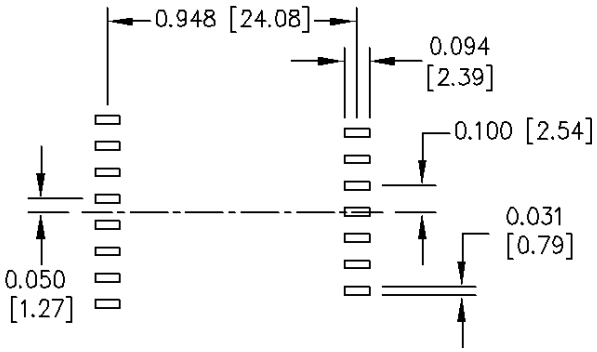


All dimensions in inches [mm].

SUGGESTED SOLDER PAD LAYOUT



Pin Connections	
Function	**Pin**
Ground	1
10 MHz Out	2
Lock OK	3
1PPS Output	4
1PPS Input	5
+5V Output	6
Ground	7
+3.3V VDO In	8
Ground	9
Antenna Input	10
Ground	11
NMEA Transmit	12
/Enter ISP	13
Serial Input	14
Serial Output	15

Marking:
Line 1: Part Number
Line 2: MTRONPTI
Line 3: ● Date Code

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