XO7013 Series
9x14 mm, SMD, VCXO

FEATURES

Surface Mount 9x14mm Package
Ultra-Low phase Noise , Low Jitter
CMOS Output, 3.3V
Industrial Temperature

APPLICATIONS

Instrumentation
Avionics
Satcom
Datacom

ELECTRICAL SPECIFICATIONS

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Frequency Range	F_0	50		262	MHz	
Frequency Stabilities						
Absolute Pull Range (APR)		±20			ppm	APR = (Pull range) - (degradations due to temperature + aging + power supply + load + initial tolerance + shock + vibration)
Aging		-3.0		+3.0	ppm	1st year
		1.0		+1.0	ppm/year	After 1st year
RF Output						
Output Logic Level (CMOS)	V_{OL} V_{OH}	 90		10	%V_{CC} %V_{CC}	
Waveform Symmetry (duty cycle)	T_{DC}	45	50	55	%	@ 50% of waveform (CMOS)
Rise/Fall Time	T_R/T_F		3		ns	20% to 80% Vcc
Output Load			15		pF	CMOS
Start-up Time	T_{SU}			10	ms	
Frequency Adjustment						
Adjustment Method		External Voltage				
Control Voltage Range	Vc	0	1.65	3.3	V	
Tuning Sensitivity			25		ppm/v	
Linearity				5	%	
Modulation Bandwidth		10			kHz	
Input Impedance			50		kΩ	
Adjustment Slope		Positive				
Additional Parameters						
SSB Phase Noise			-140		dBc/Hz	@ 1 kHz Offset
			-155		dBc/Hz	@ 10 kHz Offset
			-164		dBc/Hz	@ 100 kHz Offset
			-166		dBc/Hz	@ 1 MHz Offset
Integrated Jitter			40		fsec	12 kHz to 20 MHz
Sub Harmonics		None				

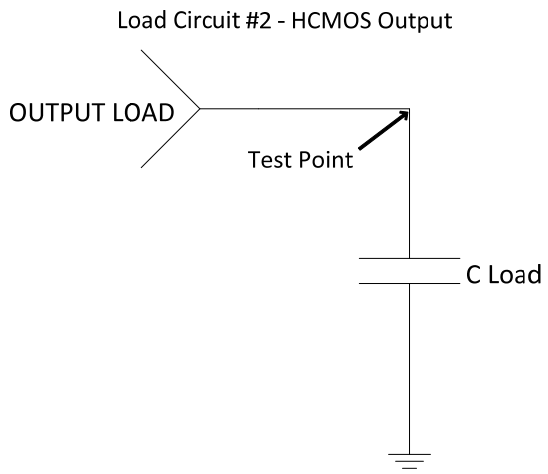
ELECTRICAL SPECIFICATIONS

Operating Voltage and Current						
Parameter	**Symbol**	**Min.**	**Typ.**	**Max.**	**Units**	**Conditions**
Operating Voltage	V_{CC}	3.0	3.3	3.6	V	
Operating Current	I_C			35	mA	
Temperature						
Operating Temperature	T_A	-40		+85	°C	
Storage Temperature	T_S	-55		+125	°C	

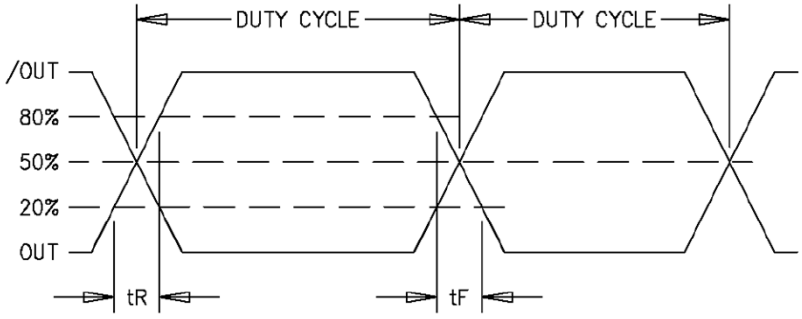
ENVIRONMENTAL CONDITIONS

Shock	MIL-STD-883, Method 2002, Condition B
Vibration	MIL-STD-883, Method 2007, Condition A
Solderability	MIL-STD-883, Method 2003
Seal	Non-Hermetic and non-washable unit.
Thermal Shock	MIL-STD-883, Method 1011, Condition A
Solvent Resistance	MIL-STD-202, Method 215
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition I or J
Moisture Resistance	MIL-STD-883, Method 1004
RoHS	Full RoHS Compliance

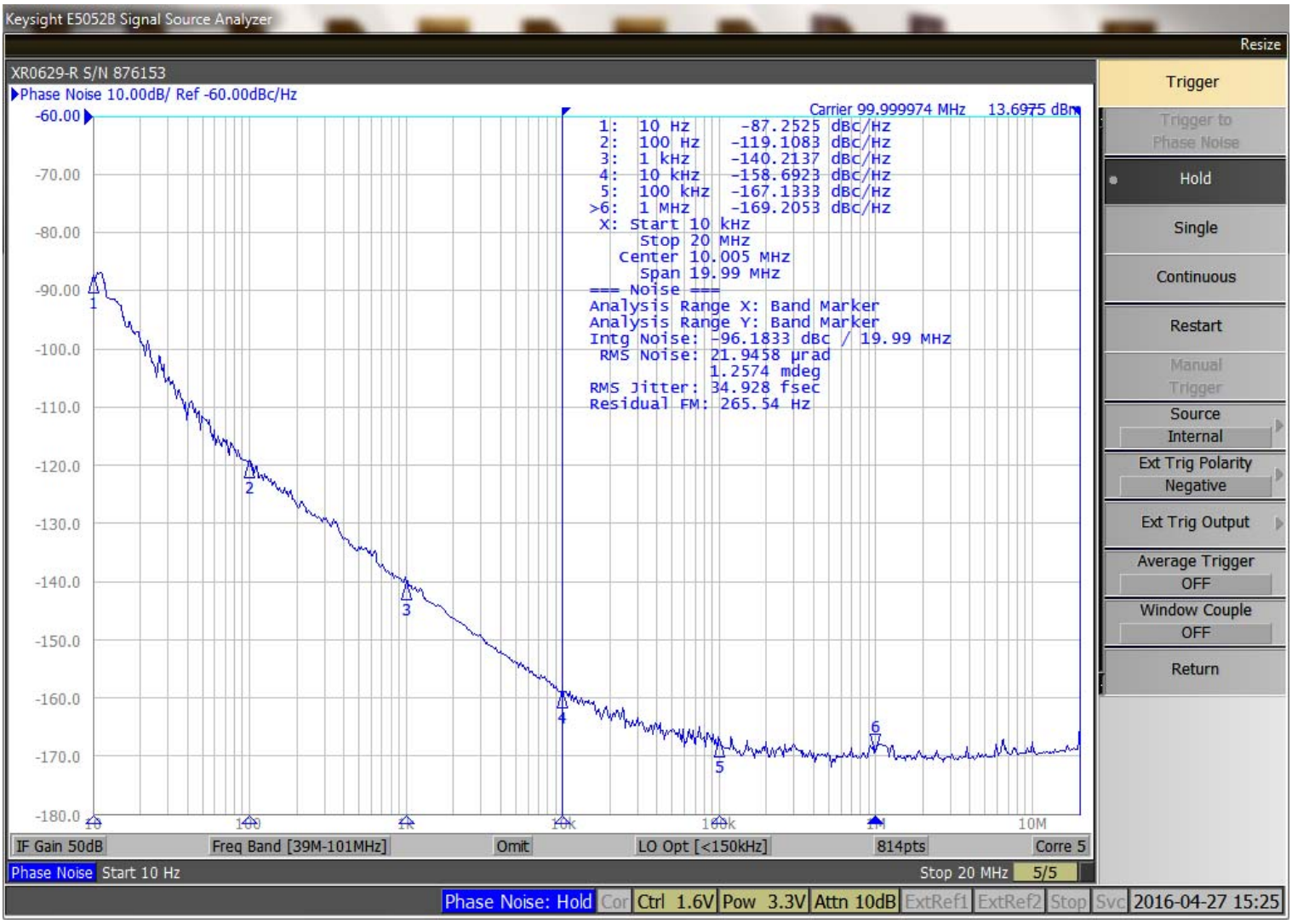
LOAD CIRCUIT DIAGRAM



OUTPUT WAVEFORM



REPRESENTITIVE PHASE NOISE PLOT



LEAD FREE SOLDER PROFILE

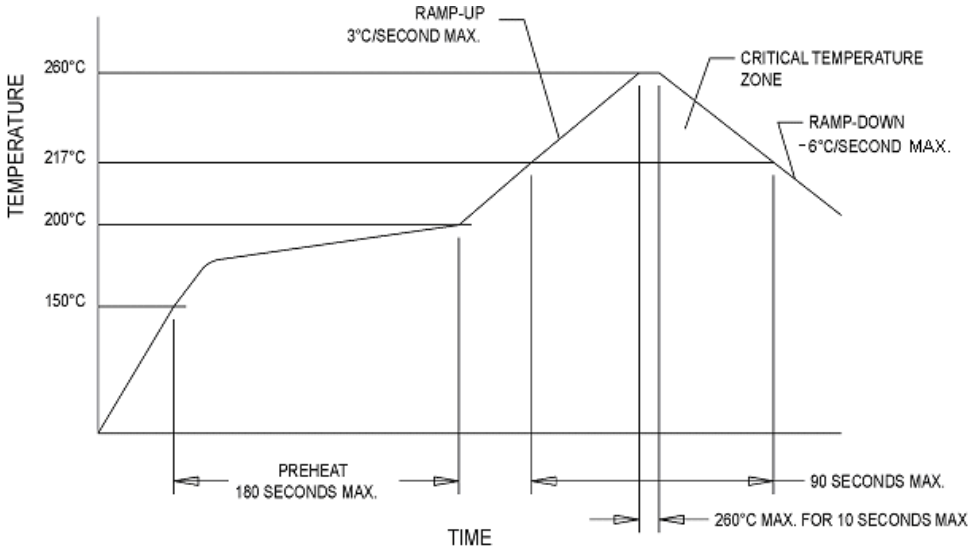
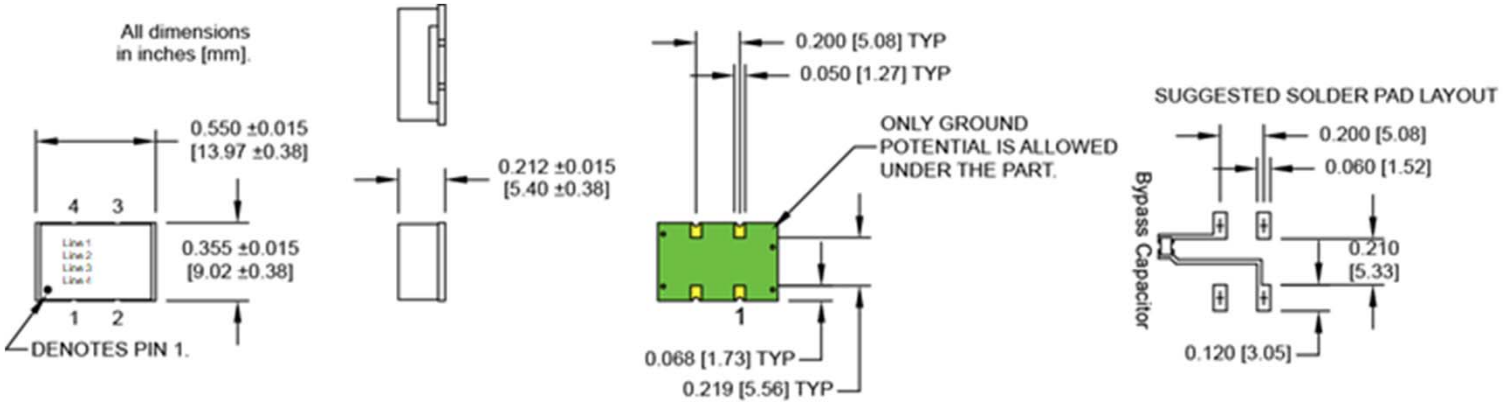


Figure 1

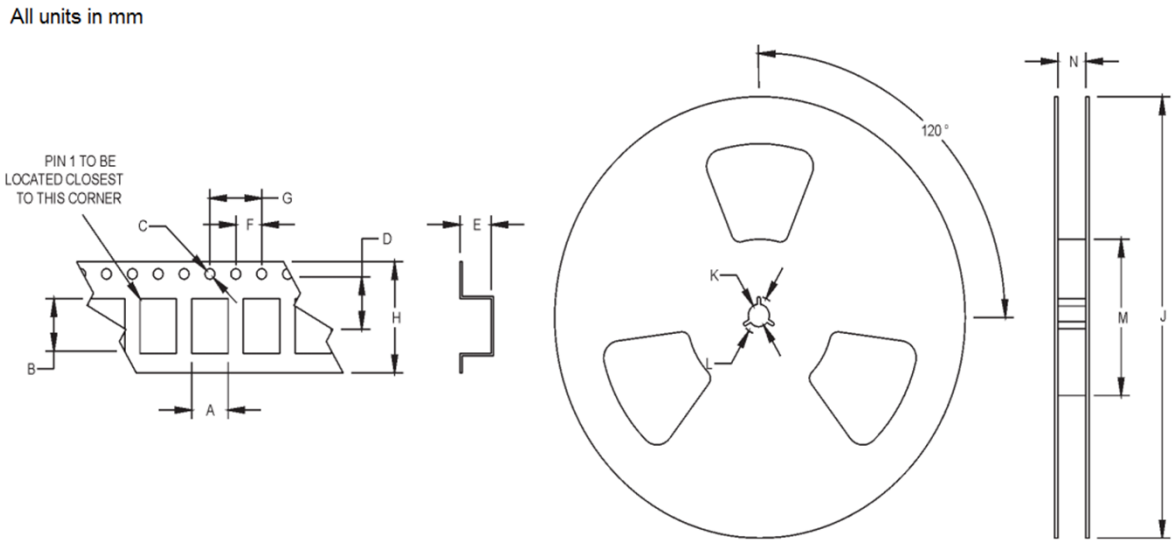
MECHANICAL AND MARKING INFORMATION

Pad	Function
1	Voltage Control
2	Ground
3	Output
4	Supply Vcc+

Part Marking	
Line 1	MtronPTI
Line 2	Part Number
Line 3	Frequency
Line 4	Date Code



TAPE AND REEL SPECIFICATIONS



A	B	C	D	E	F	G	H	J	K	L	M
9.65	15.25	1.5	11.5	6.73	4	16	24	330	6.5		100

MtronPTI reserves the right to make changes to the product(s) and service(s) described herein without notice.
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http://www.mtronpti.com 407-298-2000 MtronPTI 2525 Shader Road Orlando, FL 32804