

SPECIFICATION FOR LVPECL OUTPUT SMT VCXO

MtronPTI P/N: M3100S077

Electrical Specifications:

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Operating Frequency	F _o		311.040000		MHz	V _c = 1.65 V @ +25 °C
Frequency Tolerance @ +25 °C		-20		+20	ppm	Includes initial calibration tolerance, supply, load, reflow, and 15 yr. aging.
Frequency Stability		-100		+100	ppm	Over operating temperature
Operating Temperature	T _A	-40		+85	°C	
Storage Temperature	T _S	-55		+125	°C	
Aging		-3		+3	ppm	1 st year
		-1		+1	ppm	Thereafter (per year)
Operating Voltage	V _{CC}	2.97	3.3	3.63	V	
Operating Current	I _{CC}			130	mA	
Output Type		LVPECL Compatible				
Output Load		50 Ω to (V _{CC} - 2) V _{DC}			V	
Symmetry (duty cycle)	t _{DC}	45		55	%	Ref. to V _{CC} - 1.3 V
Output Voltage Level (Mid Level)	V _O	V _{CC} - 1.42		V _{CC} - 1.25	V	50 Ω to (V _{CC} - 2) V _{DC}
Logic Level "1"		V _{CC} - 1.02			V	
Logic Level "0"				V _{CC} - 1.63	V	
Rise/Fall Time	t _R /t _F			350	ps	From 20% to 80% V _{CC}
Start-up Time	t _{SU}			10	ms	
Control Voltage		0.3		3.0	V	Pad 1. V _{CC} = 3.3 V
Pullability (APR)		±30			ppm	
Gain Transfer Function	K _V		90 ± 10%		ppm/V	10% to 90% of V _{CC}
Linearity		-10		+10	%	Positive slope
Modulation Bandwidth	BW	9.3		10.7	kHz	- 3 dB V _C = 1.65 V
Input Impedance	Z _{VC}	500			kΩ	Pad 1
Phase Jitter (RMS)			0.5	1.0	ps	12 kHz to 20 MHz
Period Jitter (RMS)			2.0		ps	
Phase Noise			-70		dBc/Hz	@ 100 Hz
			-100		dBc/Hz	@ 1 kHz
			-119		dBc/Hz	@ 10 kHz
			-127		dBc/Hz	@ 100 kHz
			-139		dBc/Hz	@ 1 MHz
			-146		dBc/Hz	@ 10 MHz
Enable Function		≤ 0.5			V	Pad 2
Disable Function		> 75% V _{CC} or open			V	Pad 2

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Environmental & Packaging Requirements:

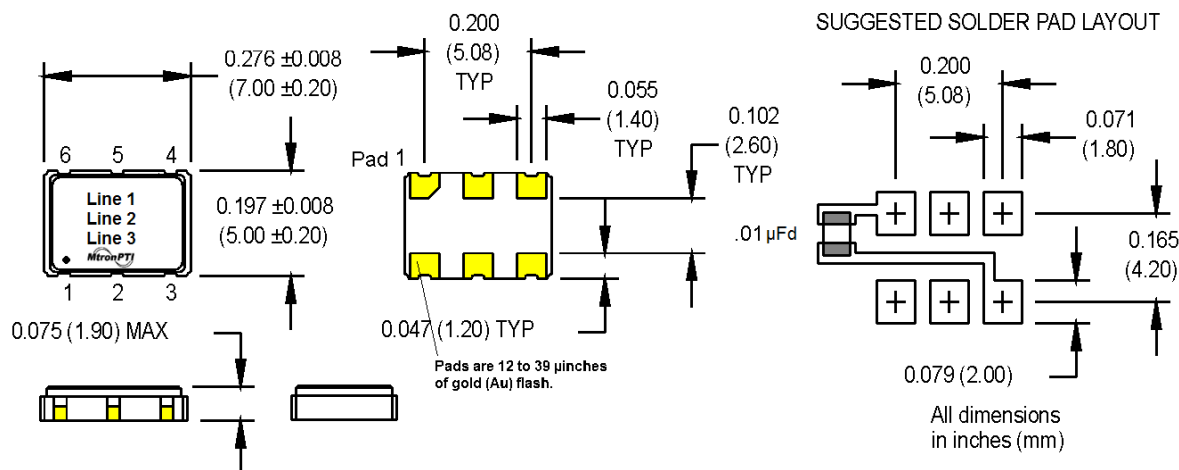
Mechanical Shock	Per MIL-STD-202, Method 213, Condition C (100 g, 6 ms duration, ½ sine wave)
Vibration	Per MIL-STD-202, Method 201 & 204 (10 g from 10 Hz to 2000 Hz)
Thermal Cycle	Per MIL-STD-883, Method 1010, B (-55 °C to 125 °C, 15 min. dwell, 10 cycles)
Hermeticity	Per MIL-STD-202, Method 112 (1 x 10 ⁻⁸ atm cc/s of Helium)
Solderability	Per EIAJ-STD-002
Max. Soldering Conditions	See solder profile, Figure 1.
Package Type	5.0 X 7.0 X 1.9 mm 6-pad leadless ceramic. RoHS compliant. (M310x Series)

Mechanical, Marking, and Pin-Out Information:

Pad	Function
1	Control Voltage
2	Enable/Disable
3	Ground
4	CLK +
5	CLK -
6	Supply +V _{CC}

Part Marking	
Line 1	M3100S077
Line 2	311M0400
Line 3	yyww
Line 4	MtronPTI Logo

Legend	
yy	Year
ww	Work Week



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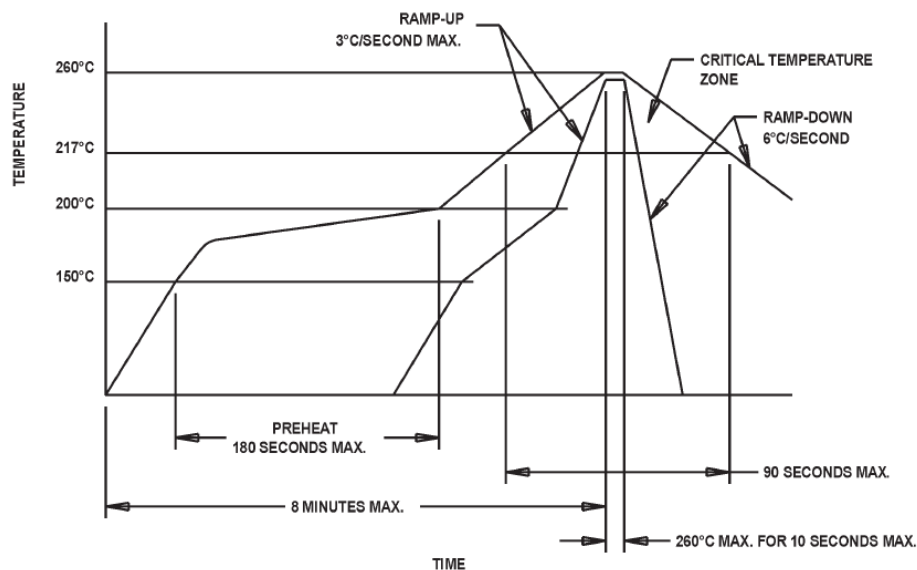


Figure 1

Data Sheet Revision Table:

Date	Rev.	Author	Details of Revision
04/08/10	0	WNJ	Original release.
05/17/10	A	WNJ	Corrected Enable/Disable function Logic. Corrected 100 kHz phase noise value. Removed "setting time"
06/24/13	B	LEO	Corrected Part Marking and minor updates to layout.