

M310x Series

5x7 mm, 3.3/2.5/1.8 Volt, PECL/LVDS/CML, VCXO



QiK Chip™



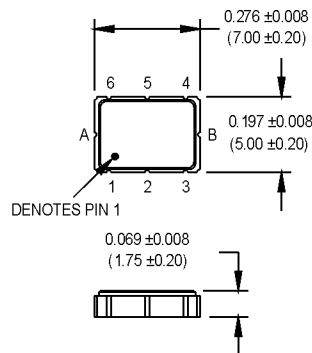
- Featuring **QiK Chip™** Technology
- Superior Jitter Performance (comparable to SAW based)
- APR of ± 50 or ± 100 ppm over industrial temperature range
- Frequencies from 150 MHz to 1.4 GHz
- Designed for a short 2 week cycle time

Phase Lock Loop Applications:

- Telecommunications such as SONET / SDH / DWDM / FEC / SERDES / OC-3 thru OC-192
- Wireless base stations / WLAN / Gigabit Ethernet
- Avionic flight controls and military communications

Ordering Information

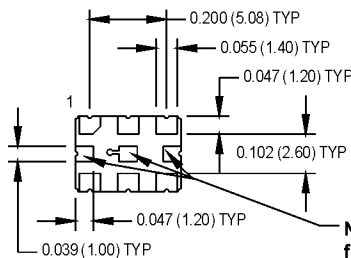
	M310	0	6	A	G	P	N	00.0000	MHz
Product Series									
Supply Voltage									
0: 3.3 V									
1: 2.5 V									
2: 1.8 V									
Temperature Range									
2: -40°C to +85°C (see note 1)									
6: -20°C to +70°C									
Absolute Pull Range (APR)									
A: ± 50 ppm									
B: ± 100 ppm									
Enable/Disable									
G: Complementary Enable High (Pad 2)									
M: Complementary Enable Low (Pad 2)									
U: Complementary Output									
Logic Type									
P: PECL									
L: LVDS									
M: CML									
Package/Lead Configuration									
N: 5x7 mm Leadless									
Frequency (customer specified)									



ACTUAL SIZE

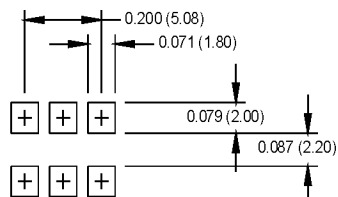
All dimensions in inches (mm).

Pad1: Voltage Control
Pad2: Enable/Disable (or N/C)
Pad3: Ground
Pad4: Output Q (PECL, LVDS, CML)
Pad5: Output $\bar{Q}$ (PECL, LVDS, CML)
Pad6: Vcc
PadA: Do not connect!
PadB: Do not connect!
PadC: Do not connect!



NOTE: These 3 pads must be isolated from any traces or vias appearing beneath this port.

SUGGESTED SOLDER PAD LAYOUT



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.

Please see www.mtronpti.com for our complete offering and detailed datasheets. Contact us for your application specific requirements: MtronPTI 1-800-762-8800.

Revision: 11-21-06

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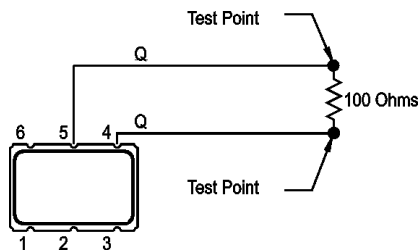
PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes
Frequency Range	F	150		1400	MHz	See Note 2
Operating Temperature	T _A	(See ordering information)				See Note 1
Storage Temperature	T _S	-55		+125	°C	
Frequency Stability	$\Delta F/F$		±25		ppm	
Aging						
1st Year		-3		+3	ppm	
Thereafter (per year)		-1		+1	ppm	
Pullability/APR		(See ordering information)				See Note 3
Control Voltage	V _c	0.18	0.90	1.62	V	@ 1.8V V _{cc}
		0.25	1.25	2.25	V	@ 2.5V V _{cc}
		0.30	1.65	3.0	V	@ 3.3V V _{cc}
Linearity			1	5	%	Positive Monotonic
Modulation Bandwidth	f _m	20			KHz	-3 dB bandwidth
Input Impedance	Z _{in}	500k	1M		Ohms	@ DC
Supply Voltage	V _{cc}	1.71	1.8	1.89	V	
		2.375	2.5	2.625	V	
		3.135	3.3	3.465	V	
Input Current	I _{cc}			125	mA	PECL/LVDS/CML
Load		50 Ohms to (V _{cc} - 2) V _{dc} 100 Ohm differential load				See Note 4 PECL Waveform LVDS/CML Waveform
Symmetry (Duty Cycle)		45		55	%	@ 50% of waveform
Output Skew			TBD			
Differential Voltage		350	425 TBD	500	mV _{ppd}	LVDS CML
Common Mode Output Voltage	V _{cm}		1.2		V	LVDS
Logic "1" Level	V _{oh}	V _{cc} - 1.02			V	LVPECL
Logic "0" Level	V _{ol}			V _{cc} - 1.63	V	LVPECL
Rise/Fall Time	T _r /T _f		0.23	0.50	ns	@ 20/80% LVPECL
Enable Function		80% V _{cc} min. or N/C: output active 20% V _{cc} max: output disables to high-Z				Output Option G
		20% V _{cc} max: output active 80% V _{cc} min: output disables to high-Z				Output Option M
Start up Time			10		ms	
Phase Jitter						
@ 622.08 MHz	φ _J		0.50		ps RMS	Integrated 12 kHz – 20 MHz

Note 1: If the device is powered up below -20°C and then the ambient temperature rises 105°C during normal operation, the output will be interrupted for approximately 2-3 ms. A correction is in process and will be available Q1 2007

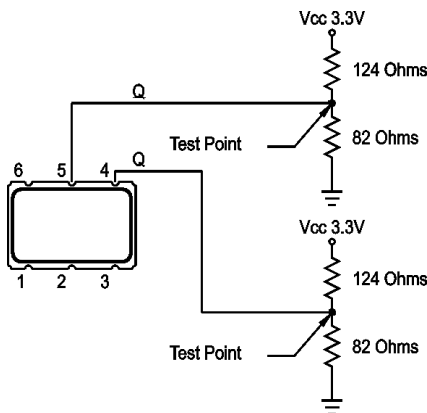
Note 2: Contact factory for exact frequency availability over 945 MHz.

Note 3: APR specification is inclusive of initial tolerance, deviation over temperature, shock, vibration, supply voltage, and aging for one year at 50°C mean ambient temperature.

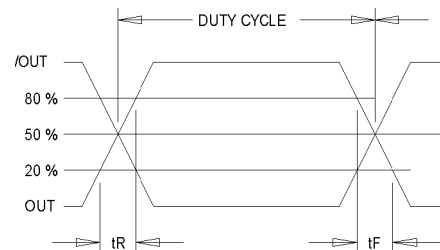
Note 4: See Load Circuit Diagram in this Datasheet. Consult factory with nonstandard output load requirements.



LVDS Load Circuit



3.3V LVPECL Load Circuit



Output Waveform: LVDS/CML/PECL

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MtronPTI Lead Free Solder Profile

