

M210x Series

5x7 mm, 3.3/2.5/1.8 Volt, LVPECL/LVDS/CML, Clock Oscillator



Features:

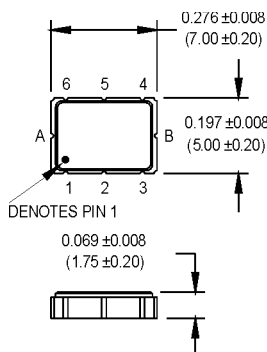
- Featuring **QiK Chip™** Technology
- Superior Jitter Performance (comparable to SAW based)
- Frequencies from 150 MHz to 1.4 GHz
- Designed for a short 2 week cycle time

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

	M210	0	6	8	B	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									
Stability									
4: ±50 ppm									
3: 100 ppm									
8: ±20 ppm									
Enable/Disable									
B: Enable High (pin 1)									
G: Enable High (pin 2)									
S: Enable Low (pin 1)									
M: Enable Low (pin 2)									
U: No Enable/Disable									
Logic Type									
P: LVPECL									
L: LVDS									
M: CML									
Package/Lead Configuration									
N: 5x7 mm Leadless									
Frequency (customer specified)									



ACTUAL SIZE

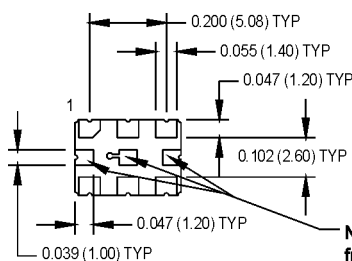
All dimensions in inches (mm).

PIN 1 ENABLE

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

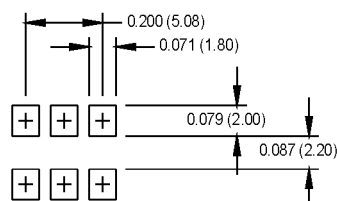
PIN 2 ENABLE

Pad1: N/C
 Pad2: Enable/Disable
 Pad3: Ground
 Pad4: Output Q (LVPECL, LVDS, CML)
 Pad5: Output $\bar{Q}$ (LVPECL, 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



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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: 02-26-07

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QiK Chip™



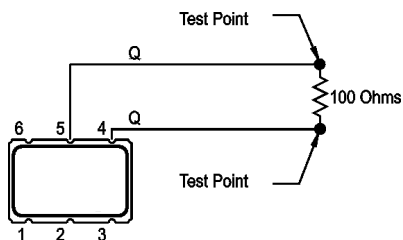
PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes
Frequency Range	F	150		1400	MHz	See Note 2
Operating Temperature	T _A	(See ordering information)				See Note 1
Storage Temperature	T _S	-55		+125	°C	
Frequency Stability	ΔF/F	(See ordering information)				See Note 3
Aging						
1st Year		-3		+3	ppm	
Thereafter (per year)		-1		+1	ppm	
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	LVPECL/LVDS/CML
Load		50 Ohms to (V _{CC} - 2) V _{DC} 100 Ohm differential load				See Note 4 LVPECL Waveform LVDS/CML Waveform
Symmetry (Duty Cycle)		45		55	%	@ 50% of waveform
Output Skew			TBD			
Differential Voltage		350	425 TBD	500	mVppd	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 B or G
		20% V _{CC} max.: output active 80% V _{CC} min.: output disables to high-Z				Output Option S or M
Start up Time			10		ms	
Phase Jitter @ 622.08 MHz	φ _J		0.3		ps RMS	Integrated 12 kHz – 20 MHz
Phase Noise						@ 622.08 MHz
10 Hz			-50			dBc/Hz
100 Hz			-80			dBc/Hz
1 KHz			-106			dBc/Hz
10 KHz			-117			dBc/Hz
100 KHz			-120			dBc/Hz
1 MHz			-130			dBc/Hz
10 MHz			-147			dBc/Hz
40 MHz			-150			dBc/Hz
Mechanical Shock	Per MIL-STD-202, Method 213, Condition C (100 g's, 6 ms duration, ½ sine wave)					
Vibration	Per MIL-STD-202, Method 201 & 204 (10 g's from 10-2000 Hz)					
Hermeticity	Per MIL-STD-202, Method 112, (1x10 ⁻⁵ atm. cc/s of Helium)					
Thermal Cycle	Per MIL-STD-883, Method 1010, Condition B (-55°C to +125°C, 15 min. dwell, 10 cycles)					
Solderability	Per EIAJ-STD-002					
Soldering Conditions	+260°C max. for 10 secs.					

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.

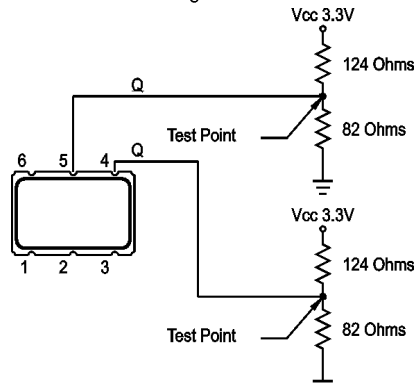
Note 2: Contact factory for exact frequency availability over 945 MHz

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

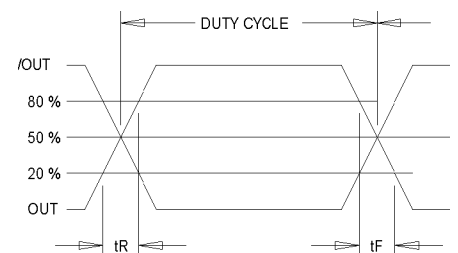
Note 4: See Load Circuit Diagram in this Datasheet. Consult factory with nonstandard output load requirements.



LVDS Load Circuit



3.3V LVPECL Load Circuit



Output Waveform: LVDS/CML/PECL

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MtronPTI Lead Free Solder Profile

