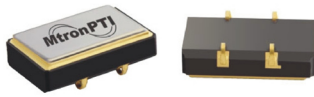
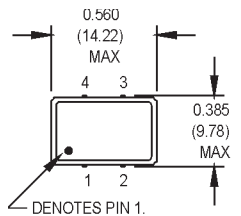


M5RJ Series

9x14 mm, 3.3 Volt, LVPECL/LVDS, Clock Oscillator



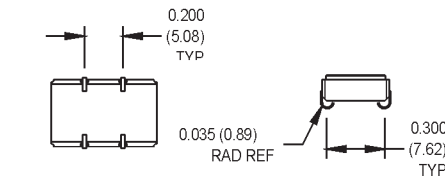
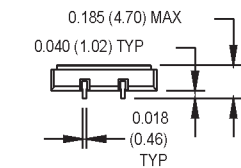
- Integrated phase jitter of less than 1 ps from 12 kHz to 20 MHz
- Ideal for 10 and 40 Gigabit Ethernet and Optical Carrier applications



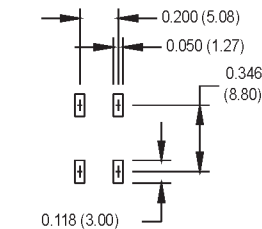
FREQUENCY RANGE	AVAILABLE OUTPUT TYPES
19.440 to 170.000 MHz	Z, E, R
170.000 to 250 MHz	S, U

Ordering Information								00.0000 MHz
	M5RJ	1	8	Z	Q	J	-R	
Product Series								
Temperature Range								
1:	0°C to +70°C	2:	-40°C to +85°C					
6:	-20°C to +70°C	7:	-0°C to +85°C					
8:	0°C to +50°C							
Stability								
3:	±100 ppm	4:	±50 ppm	5:	±35 ppm			
6:	±25 ppm	8:	±20 ppm					
Output Type								
E:	Complementary, pins 1 & 4, enable (enabled w/pin 2 low)							
R:	Complementary, pins 1 & 4, enable (enabled w/pin 2 high)							
S:	Complementary, pins 4 & 5, enable (enabled w/pin 2 low)							
U:	Complementary, pins 4 & 5							
Z:	Complementary, pins 1 & 3							
*Symmetry/Output Logic Type								
P:	45/55% PECL							
Q:	40/60% PECL							
Package/Lead Configurations								
J:	J-lead							
RoHS Compliance								
Blank:	non-RoHS compliant part							
-R:	RoHS compliant part							
Frequency (customer specified)								

* Contact the factory regarding LVDS output availability
M2003Sxxx - Contact factory for datasheet.



Suggested Solder Pad Layout



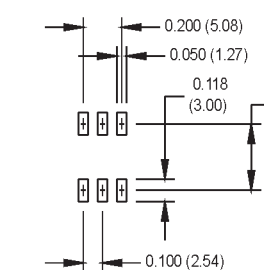
Pin Connections (Z, E, and R Output Types)

FUNCTION	4 Pin	6 Pin
Output/Q	1	1
Enable		2
Ground/Cover	2	3
Output Q	3	4
N/C		5
+Vcc	4	6

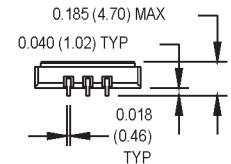
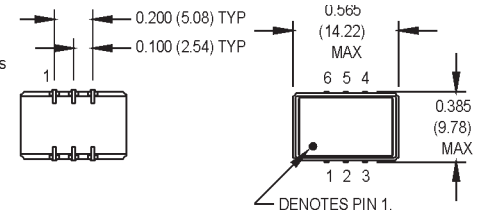
Pin Connections (S and U Output Types)

PIN	FUNCTION
1	N/C
2	N/C or Enable
3	Ground/Cover
4	Output Q
5	Output/Q
6	+Vcc

SUGGESTED SOLDER PAD LAYOUT



All dimensions in inches (mm).



PARAMETER	Symbol	Min.	Typ.	Max.	Units	Condition/Notes
Frequency Range	F	19.44		250	MHz	See Note 1
Operating Temperature	T _A			(See ordering information)		
Storage Temperature	T _s	-55		+125	°C	
Frequency Stability	ΔF/F			(See ordering information)		See Note 2
Aging						
1st Year			±2		ppm	
Thereafter (per year)			±1		ppm	
Input Voltage	V _{cc}	3.135	3.3	3.465	V	
Supply Current	I _{cc}			75	mA	<150 MHz
	I _{cc}			85	mA	>150 MHz
Output Type						LVPECL/LVDS
Load				50 Ohms to V _{cc} - 2.0 V		
				Or Thevenin equivalent		
Symmetry (Duty Cycle)				(See ordering information)		PECL load @ V _{cc} -1.3 VDC
Output Skew				200	ps	PECL
Differential Voltage		250	350	450	mV	LVDS
Logic "1" Level	V _{oh}	V _{cc} -1.02			V	PECL
Logic "0" Level	V _{ol}			V _{cc} -1.63	V	PECL
Rise/Fall Time	Tr/Tf		0.50	0.55	ns	@ 20/80% LVPECL
				1.0	ns	@ 20/80% LVDS
Enable Function						PECL low: output active PECL high: output disables 80% V _{cc} min or N/C: output active 20% V _{cc} max: output disables to high-Z
Start up Time				10	ms	"E" & "S" output types
Phase Jitter	φ _J			1.5	ps RMS	Integrated 12 kHz - 20 MHz
				1.0	ps RMS	Integrated 12 kHz - 20 MHz
Environmental						
Mechanical Shock	MIL-STD-202, Method 213, C (100 g's)					
Vibration	MIL-STD-202, Method 201 & 204 (10 g's from 10-2000 Hz)					
Thermal Cycle	MIL-STD-883, Method 1010, B (-55°C to +125°C, 15 min dwell, 10 cycles)					
Hermeticity	MIL-STD-202, Method 112					
Solderability	Per EIAJ-STD-002					
Max Soldering Conditions	See solder profile, Figure 1					

- Consult factory for exact frequency availability.
- Calibration, deviation over temperature, shock, vibration and aging.
- PECL load - see Load Circuit Diagram #5. LVDS load - see load circuit diagram #9.

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.

MtronPTI Lead Free Solder Profile

