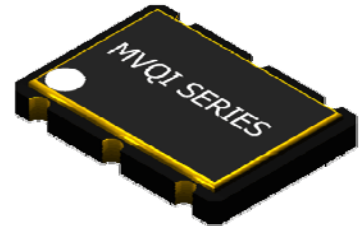


# MVQI Series 5X7 Ceramic SMD VCXO



- User Selectable Up to Two Frequencies
- LVDS, LVPECL OR CMOS
- 6 Pad Standard Package
- OneClock™



Frequency Range CMOS	10MHZ to 250MHZ					
Frequency Range LVDS & LVPECL	50.000MHZ to 1.50GHZ					
Temperature Stability*	(See Part Number Guide for Options)					
Operating Temperature Range	(See Part Number Guide for Options)					
Storage Temperature Range	-55°C to +125°C					
Aging (+25°C ±3°C)	±5ppm for first year					
Waveform	LVPECL		CMOS		LVDS	
Supply Voltage ±5% (Vdd)	+2.50 VDC	+3.30 VDC	+2.50 VDC	+3.30 VDC	+2.50 VDC	+3.30 VDC
Supply Current	54mA typ		20mA typ	25mA typ	23mA typ	
Load	50Ω		15pF	10 TTL Gates or 30pF	100Ω	
Vol	.800V typ	1.60V typ	10% Vdd max		1.1V typ	0.9V typ
Voh	1.55V typ	2.35V typ	90% Vdd min		1.5V typ	1.6V typ
Differential Voltage	.750V typ				.400V typ	.450V typ
Rise/Fall Time (10% to 90% of Supply Voltage)	0.6nSec max		4nSec		0.6nSec max	
Symmetry (50% of waveform)	(See Part Number Guide for Options)					
Start-up Time	10mSec max					
Period Jitter (RMS)	<2.5pSec					
Phase Jitter (12KHZ to 20MHZ)	<1.0pSec typ					
Tri-State Operation (Single Frequency Output only)	Vih = 70% of Vdd min to Enable Output Vil = 30% max or grounded to Disable Output (High Impedance)					
Control Voltage (Vc)	1.25 VDC ±1.00 VDC	1.65 VDC ±1.50 VDC	1.25 VDC ±1.00 VDC	1.65 VDC ±1.50 VDC	1.25 VDC ±1.00 VDC	1.65 VDC ±1.50 VDC
Pullability	±100ppm					
Linearity	10%					
Tristate Current Consumption (Disabled)	16mA					
Absolute Maximum Voltage (Vdd)	4.20 Volts DC					
* Inclusive of Temperature., Load and Voltage						



**MMD Monitor/Quartztek**  
 30400 Esperanza, Rancho Santa Margarita, CA, 92688  
 Phone: (949) 709-5075, Fax: (949) 709-3536, [www.mmdcomp.com](http://www.mmdcomp.com)  
 Sales@mmdcomp.com



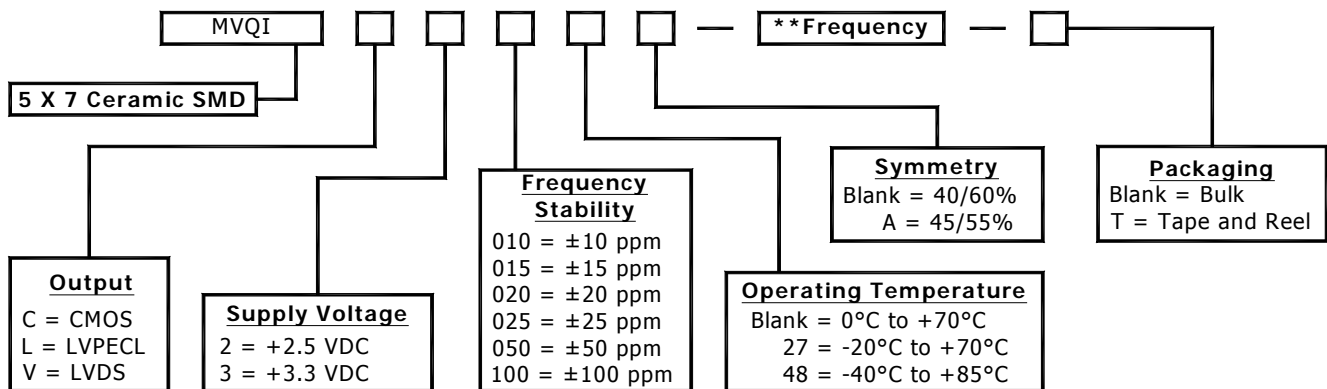
## Mechanical & Environmental Detail

Shock	MIL-STD-883, Method 2002 Cond B
Solderability	MIL-STD-883, Method 2003
Solvent Resistance	MIL-STD-202, Method 215
Vibration	MIL-STD-883, Method 2007, Cond A
Gross Leak Test	MIL-STD-883, Method 1014, Cond C
Fine Leak Test	MIL-STD-883, Method 1014, Cond A2
MSL	Level 1 per IPC/JEDEC J-STD 20

## Marking Detail

Line 1 = MXXXXX		
M	=	MMD
XXXXX	=	Frequency in MHZ
Line 2 = SYWWL		
S	=	Internal Code
YYWW	=	4 Digit Date Code (Year / Week)
L	=	Denotes RoHS Compliant
Line 3 = XXXXX		
Internal use only		
May vary with lots		
Black dot to denote Pin 1		

## Part Number Guide



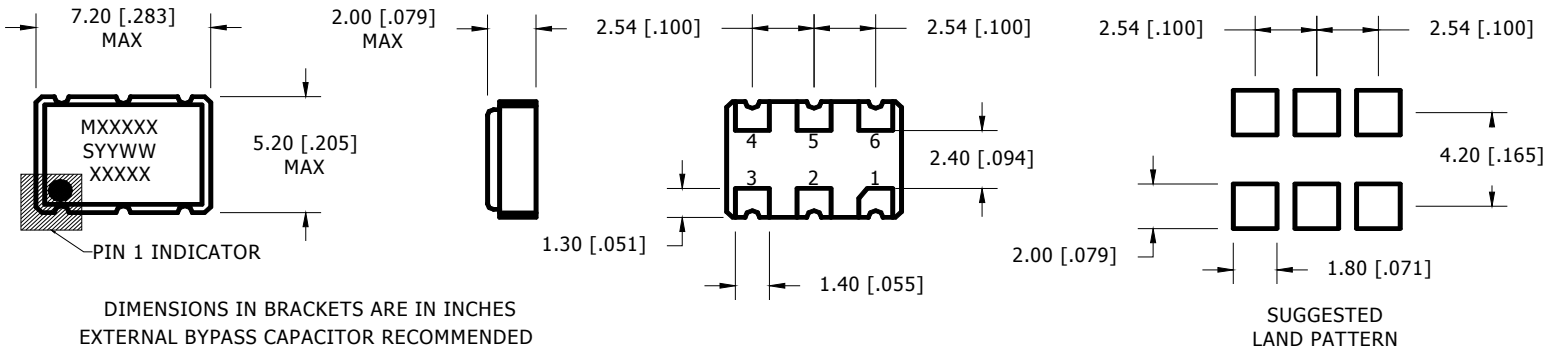
Please Consult with MMD Sales Department for any other Parameters or Options  
 \*\*Up to Two Frequencies can be selected



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## Mechanical Details



Pin Connections	
Pin 1	Vc
Pin 2*	Tristate or Freq Select
Pin 3	Ground
Pin 4	Output
Pin 5**	Complimentary Output ONLY LVPECL & LVDS
Pin 6	Supply Voltage

Single Frequency Truth Table		
Pin 1	Pin 2	Corresponding Frequency
Vc	Tristate	Frequency 1

Dual Frequency Truth Table		
Pin 1	Pin 2	Corresponding Frequency
Vc	Logic '0'	Frequency 1
Vc	Logic '1'	Frequency 2

\*No Tristate available with Dual Frequency Option  
\*\* CMOS is No Connection

## Typical Phase Noise

Offset Frequency	CMOS 70.000MHZ	LVPECL/LVDS 160.000MHZ	LVPECL/LVDS 622.000MHZ
100Hz	-88dBc/Hz	-85dBc/Hz	-80dBc/Hz
1KHz	-115dBc/Hz	-100dBc/Hz	-97dBc/Hz
10KHz	-120dBc/Hz	-115dBc/Hz	-117dBc/Hz
100KHz	-125dBc/Hz	-118dBc/Hz	-128dBc/Hz
1MHz	-130dBc/Hz	-128dBc/Hz	-138dBc/Hz
10MHz	-145dBc/Hz	-145dBc/Hz	-145dBc/Hz

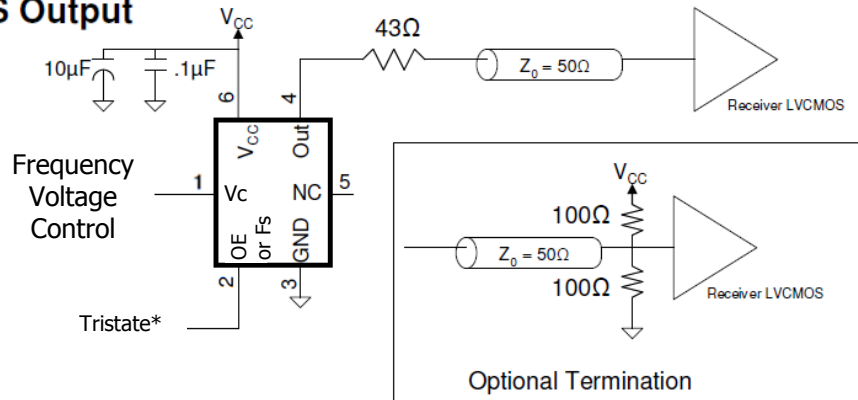


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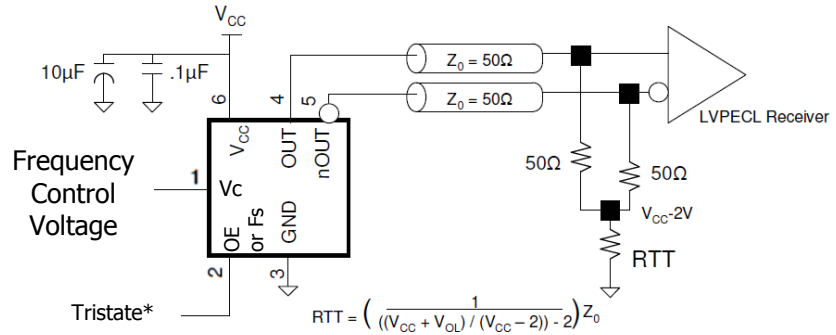
# Test Set Up

## Termination for LVCMOS Output



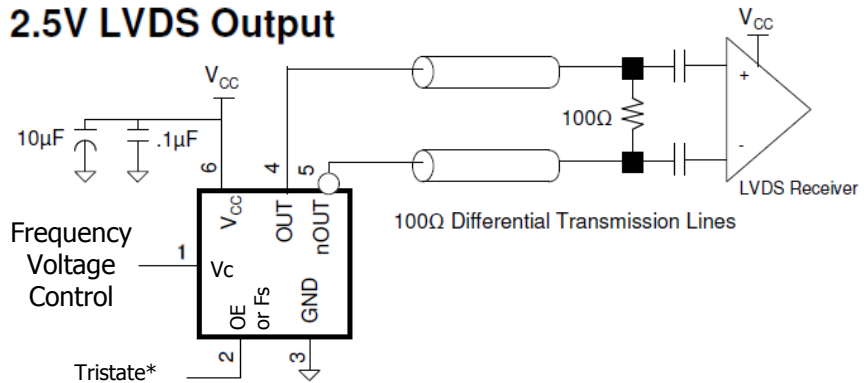
\*Pin 2 is frequency select with dual frequency oscillators

## Termination for 3.3V LVPECL Output



\*Pin 2 is frequency select with dual frequency oscillators

## Termination for 3.3V and 2.5V LVDS Output



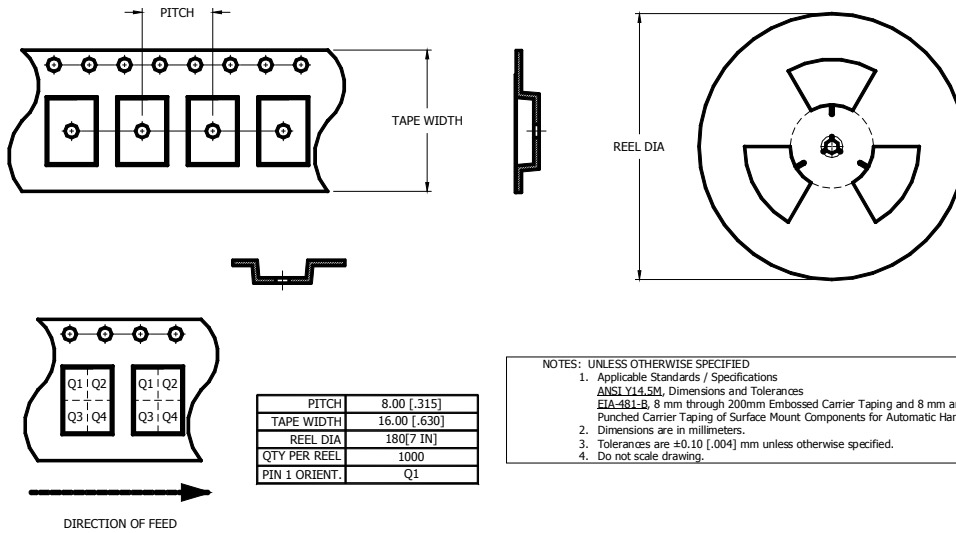
\*Pin 2 is frequency select with dual frequency oscillators



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# Tape & Reel Dimensions



PITCH	8.00 [.315]
TAPE WIDTH	16.00 [.630]
REEL DIA	180[7.14]
QTY PER REEL	1000
PIN 1 ORIENT.	Q1

NOTES: UNLESS OTHERWISE SPECIFIED  
 1. Applicable Standards / Specifications  
 ANSI Y14.5M, Dimensions and Tolerances  
 EIA-481-B, 8 mm through 200mm Embossed Carrier Taping and 8 mm and 12 mm  
 Punched Carrier Taping of Surface Mount Components for Automatic Handling.  
 2. Dimensions are in millimeters.  
 3. Tolerances are  $\pm 0.10$  [.004] mm unless otherwise specified.  
 4. Do not scale drawing.



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