

**ECN/EOL No.: 4244**

For Manufacturer			
<b>Product Description:</b> Ceramic Crystal	<b>Abracon Part Number / Part Series:</b> I Series	<input type="checkbox"/> Documentation only <input type="checkbox"/> ECN <input checked="" type="checkbox"/> EOL	<input checked="" type="checkbox"/> Series <input type="checkbox"/> Part Number
<b>Affected Revision:</b> H	<b>New Revision:</b> EOL	<b>Application:</b>	<input type="checkbox"/> Safety <input checked="" type="checkbox"/> Non-Safety
<b>Prior to Change:</b> I Series Rev H			
<b>After Change:</b>  EOL			
<b>Cause/Reason for Change:</b> Discontinuation of an older product and associated manufacturing capability.			
Change Plan			
<b>Effective Date:</b> 3/7/2022	<b>Additional Remarks:</b>		
<b>Change Declaration:</b>			
<b>Issued Date:</b> 3/7/2022	<b>Issued By:</b>	<b>Issued Department:</b> Engineering	
<b>Approval:</b> Engineering Director	<b>Approval:</b> Quality Director	<b>Approval:</b> Purchasing Director	
For Abracon EOL only			
<b>Last Time Buy (if applicable):</b> N/A	<b>Alternate Part Number / Part Series:</b> None		
<b>Additional Approval:</b>	<b>Additional Approval:</b>	<b>Additional Approval:</b>	
Customer Approval (If Applicable)			
<b>Qualification Status:</b>  <input type="checkbox"/> Approved <input type="checkbox"/> Not accepted <i>Note: It is considered approved if there is no feedback from the customer 1 month after ECN/PCN is released.</i>			
<b>Customer Part Number:</b>		<b>Customer Project:</b>	
<b>Company Name:</b>	<b>Company Representative:</b>	<b>Representative Signature:</b>	
<b>Customer Remarks:</b>			

# I Series Crystal



- **6.0mm x 3.5 mm 2 Pads Ceramic Package**
- **Tight Tolerance and Stability**
- **Wide Frequency Range**
- **Tape and Reel Packaging**



Frequency Range	10.000MHz to 80.000MHz
Frequency Tolerance / Stability	(See Part Number Guide for Options)
Operating Temperature Range	(See Part Number Guide for Options)
Storage Temperature	-40°C to +85°C
Aging	±5ppm per year Maximum
Shunt Capacitance	7pF Maximum
Load Capacitance	(See Part Number Guide for Options)
Equivalent Series Resistance	See ESR Chart
Mode of Operation	Fundamental / 3 <sup>rd</sup> Overtone
Drive Level	100µWatts Maximum
Insulation Resistance	500 Megaohms Minimum at 100Vdc

## ESR Chart

Frequency Range	ESR (Ohms)	Mode / Cut
10.000MHZ to 10.999MHZ	100 max	Fund / AT
11.000MHZ to 11.999MHZ	80 max	Fund / AT
12.000MHZ to 15.999MHZ	60 max	Fund / AT
16.000MHZ to 39.999MHZ	40 max	Fund / AT
40.000MHZ to 80.000MHZ	70 max	3 <sup>rd</sup> OT/ AT

## Environmental & Mechanical 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: MXX.XXX
XX.XXX = Frequency in MHz
Line 2: SYMCCCL or SSYMCCCL
S or SS = Internal Code
YM = Date Code (Year/Month)
CC = Crystal Parameters Code
L = Denotes RoHS Compliant

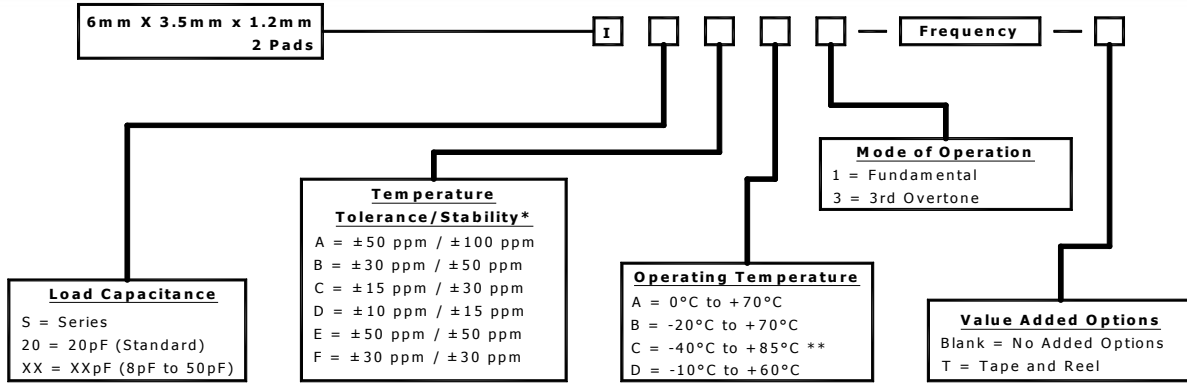
**QUALITY SYSTEM  
CERTIFIED  
= ISO 9001 =**

**MMD MONITOR/QUARTZEK – An ILSI Company**  
5458 Louie Lane, Reno, NV 89511  
Phone: (775) 851-8880, [www.mmdcomp.com](http://www.mmdcomp.com)



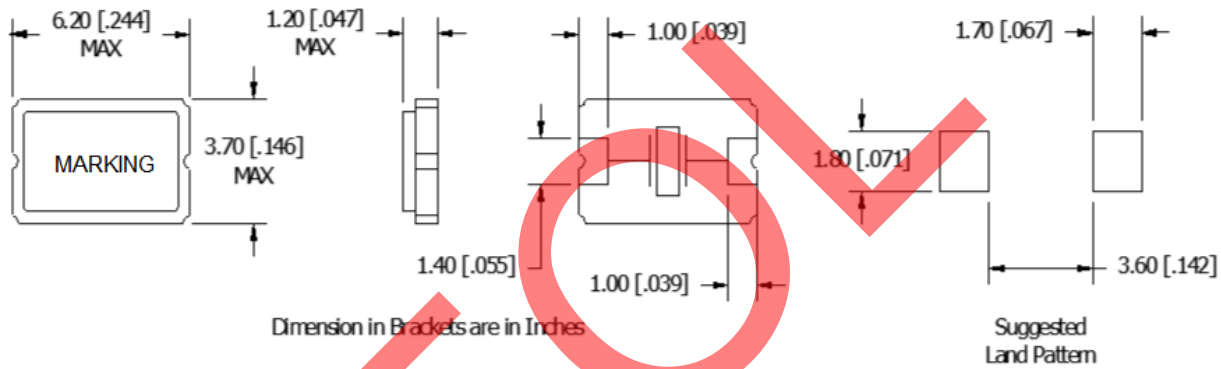
Revision:	12/06/17 H
-----------	------------

# Part Number Guide

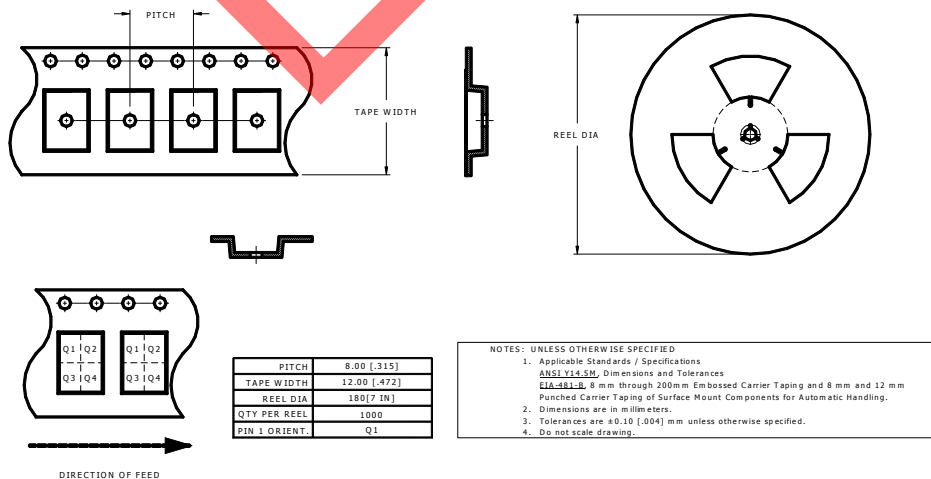


\* Please consult with MMD sales department for any other parameters or options.  
\*\* Not all Frequency Tolerance/Stability options available at this temperature range.

# Mechanical Details



# Tape & Reel



**QUALITY SYSTEM  
CERTIFIED  
= ISO 9001 =**

**MMD MONITOR/QUARTZEK – An ILSI Company**  
5458 Louie Lane, Reno, NV 89511  
Phone: (775) 851-8880, [www.mmdcomp.com](http://www.mmdcomp.com)



Revision: 12/06/17 H