


RoHS Compliant Pb - Lead Free	Ltr	Revisions	Date	Appr

**Electrical Specifications:**

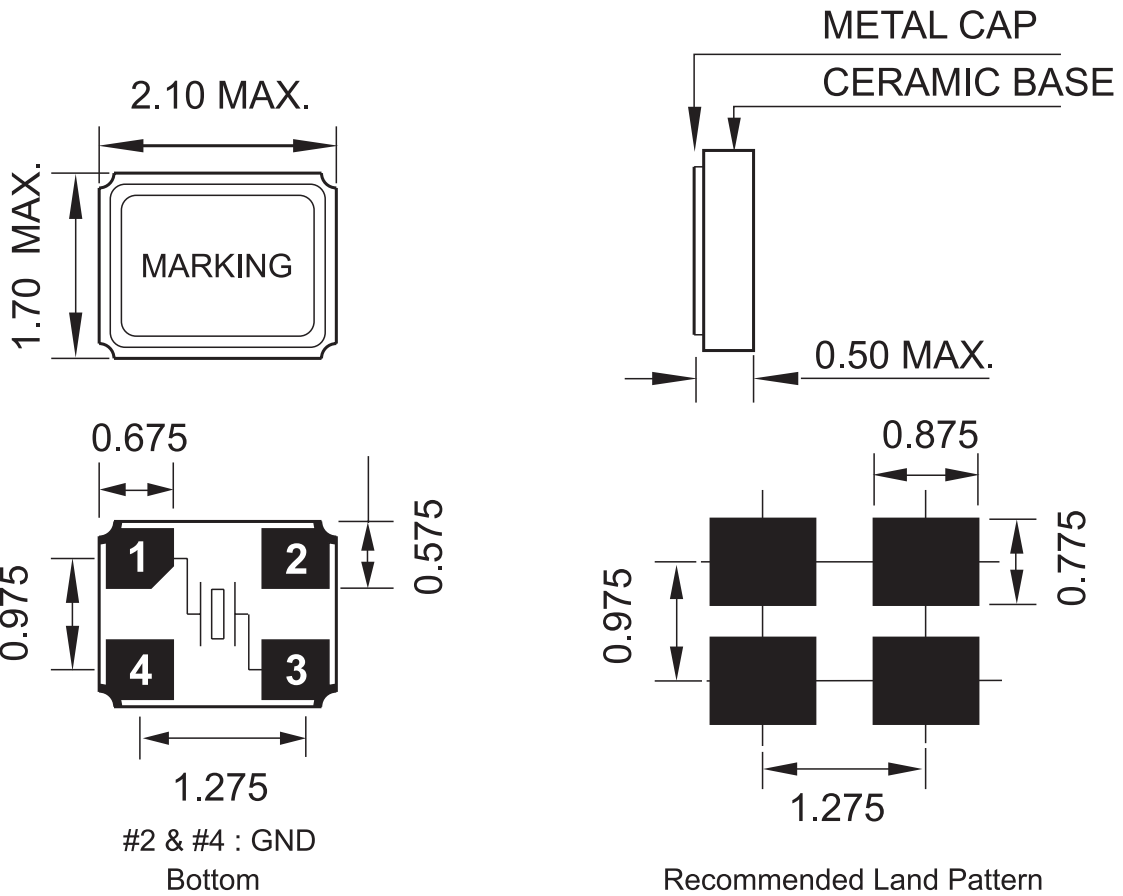
Frequency Range		20.000 to 60.000	MHz
Mode of Oscillation	Fundamental	20.000 to 60.000	MHZ
Frequency Tolerance at 25°C	Standard	±30	PPM Max (Note 1)
	Optional	±25	
		±20	
		±15	
		±10	
Frequency Stability over Temperature Range	Standard	±50	PPM Max (Note 1)
	Optional	±30	
		±25	
		±20	
		±15*	
Operating Temperature Range	Standard	-10 to +60	° C
	Extended	-40 to +85	
Storage Temperature Range		-55 to +125	
Aging		±3	PPM Max/Year
Load Capacitance		7 to 32 and Series Resonance	pF
Shunt Capacitance		3.0	
Equivalent Series Resistance (ESR)		See ESR Table	Ohm
Drive Level		100	uW Max
Insulation Resistance		500 at at 100 Vdc ± 15 Vdc	M Ohm

**Frequency Range and ESR Values:**

Frequency Range in MHz	ESR Ohm Max	Mode of Operation
20.000 to 29.999	100	Fundamental
30.000 to 37.999	80	Fundamental
38.000 to 60.000	60	Fundamental

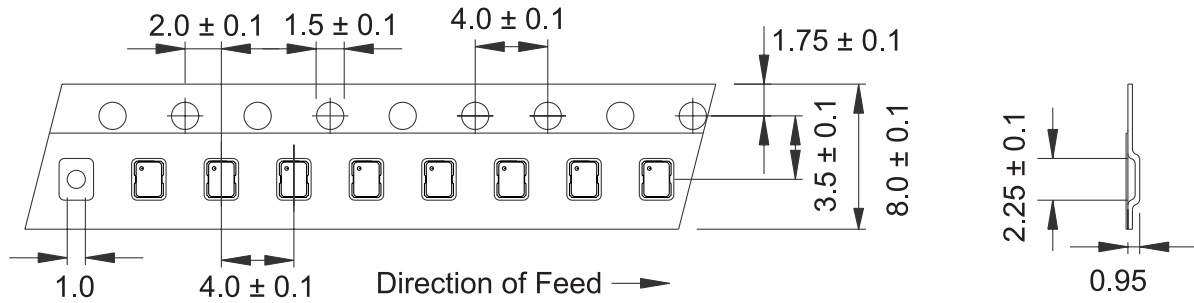
 <p>11-3 Chien-Kuo Rd T.E.P.Z. 4027 Taiwan, ROC</p> <p>All dimensions are millimeters.</p> <p>CAD: TCR</p> <p>Review: EG</p> <p>Appr: JL</p> <p>Page: 1/4   Date: May 1, 2013</p>	Specification Title:	
	<p><b>Microprocessor Crystal Unit</b>  <b>Low Profile</b>  <b>1.6 x 2.0 millimeter Surface Mount</b>  <b>General Product Specification</b></p>	
	Part Number:	<b>C1E Series</b>

**Mechanical Outline:**



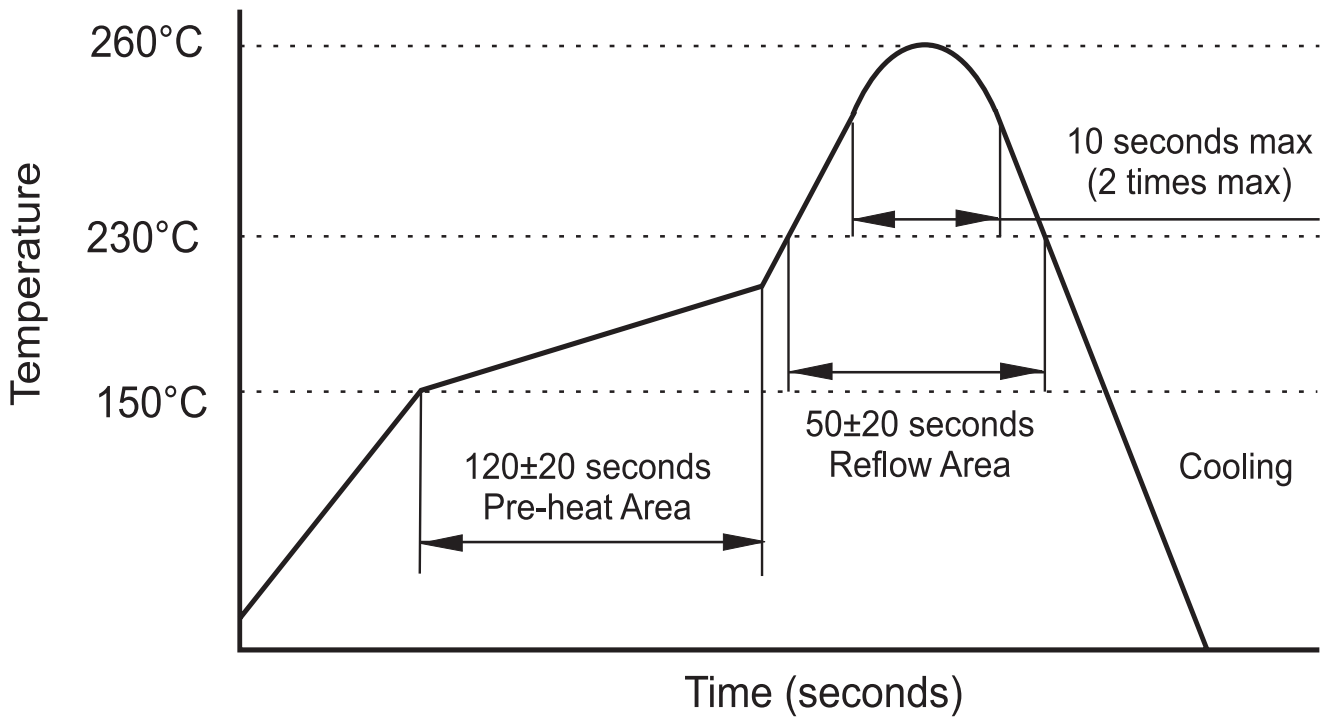
**Package is Seam Sealed Ceramic-Metal.  
Dimensions are millimeters.**

**Carrier Tape Dimensions:**



**Dimensions are millimeters.**

**Solder Reflow Characteristics:**



**How to build a Part Number:**

Series		C	Parameter
Package		1E	1.6 x 2.0 mm Seam Seal
		-	
Frequency		20.000 to 60.000	MHz
		-	
Load Capacitance		7	7 pF
		10	10 pF
		12	12 pF
		16	16 pF
		18	18 pF
		20	20 pF
		32	32 pF
		S	Series
		-	
Frequency Tolerance (Note 1)	Standard	30	±30 PPM
	Option	25	±25 PPM
		20	±20 PPM
		15	± 15 PPM
		10	±10 PPM
Frequency Stability (Note 1)	Standard	50	±50 PPM
	Option	30	±30 PPM
		25	±25 PPM
		20	±20 PPM
		15	±15 PPM*
		-	
Temperature Range	Standard	See Notes	-10 to +60 °C
	Extended	X	-40 to +85 °C
		-	
Packaging		R	Tape and Reel

**Part Number Example:**

**C1E-50.000-10-3050-R**

**C1E- 1.6 x 2.0 mm SMD Seam Seal Crystal Unit**

**50.000 MHz Nominal Frequency**

**10 pF Load Capacitance**

**3050: ±30 PPM Frequency Tolerance and ±50 PPM Frequency Stability**

**Fundamental Mode**

**-10 to +60° C Temperature Range**

**R: Tape and Reel Packaging**

**Notes:**

**1- Frequency Tolerance and Stability options are limited due to physical size.**

**\* ±10 PPM Temperature Stability is only available from -30 to +85° C.**

**2- Standard Temperature Range does not need to be included in Part Number description.**

**3- Product is shipped in Tape and Reel configuration. Each reel contains 3000 pieces.**

**4- Quantities less than 3000 are shipped bulk in ESD pouches.**

**5- Specification subject to change without notice.**