

**RoHS Compliant
Pb - Lead Free**

Ltr	Revisions	Date	Appr

Electrical Specifications:

Frequency Range		16.000 to 50.000	MHz
Mode of Oscillation	Fundamental	16.000 to 50.000	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 +70	° C
	Extended	-40 to +85	
Storage Temperature Range		-55 to +125	
Aging		±3	PPM Max/Year
Load Capacitance		6 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
16.000 to 17.999	200	Fundamental
18.000 to 23.999	120	Fundamental
24.000 to 29.999	100	Fundamental
30.000 to 37.999	80	Fundamental
38.000 to 50.000	60	Fundamental



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All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: JL

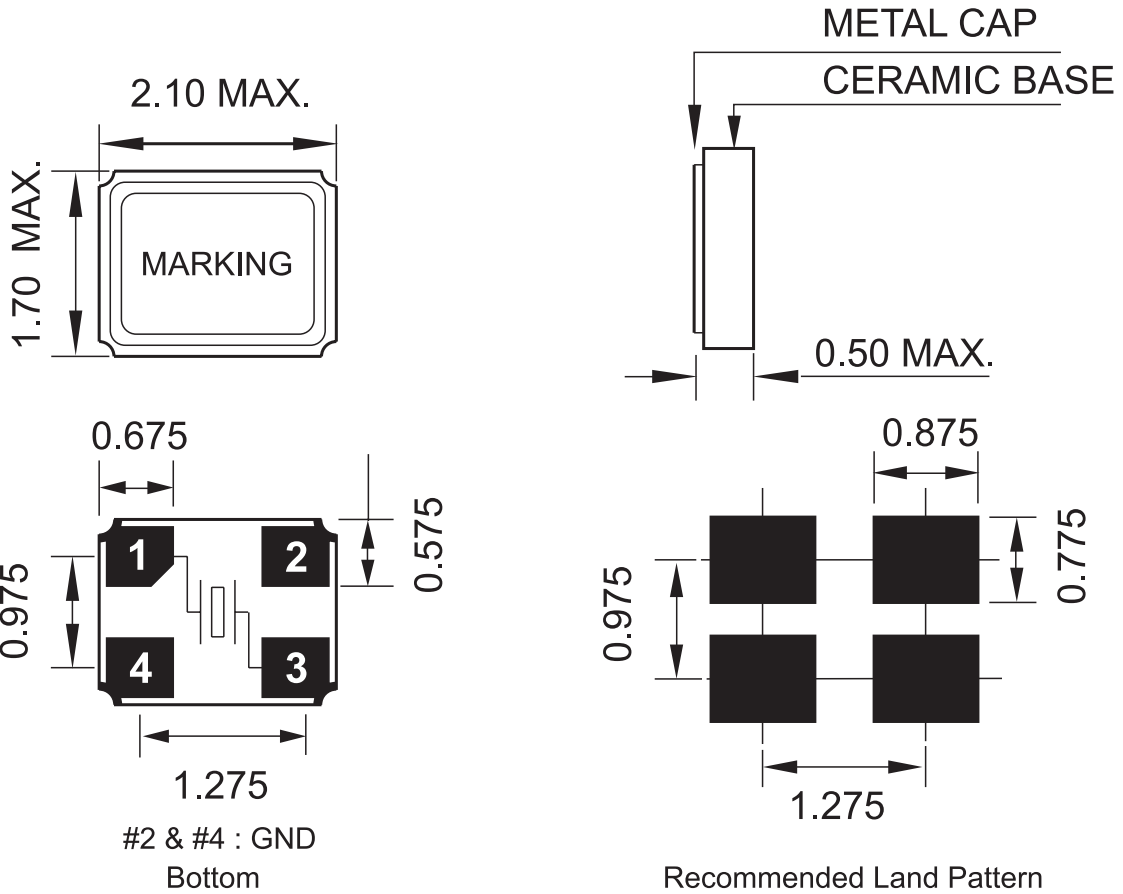
Page: 1/4 Date: May 1, 2016

Specification Title:

**Microprocessor Crystal Unit
Low Profile
2.0 x 1.6 millimeter Surface Mount
General Product Specification**

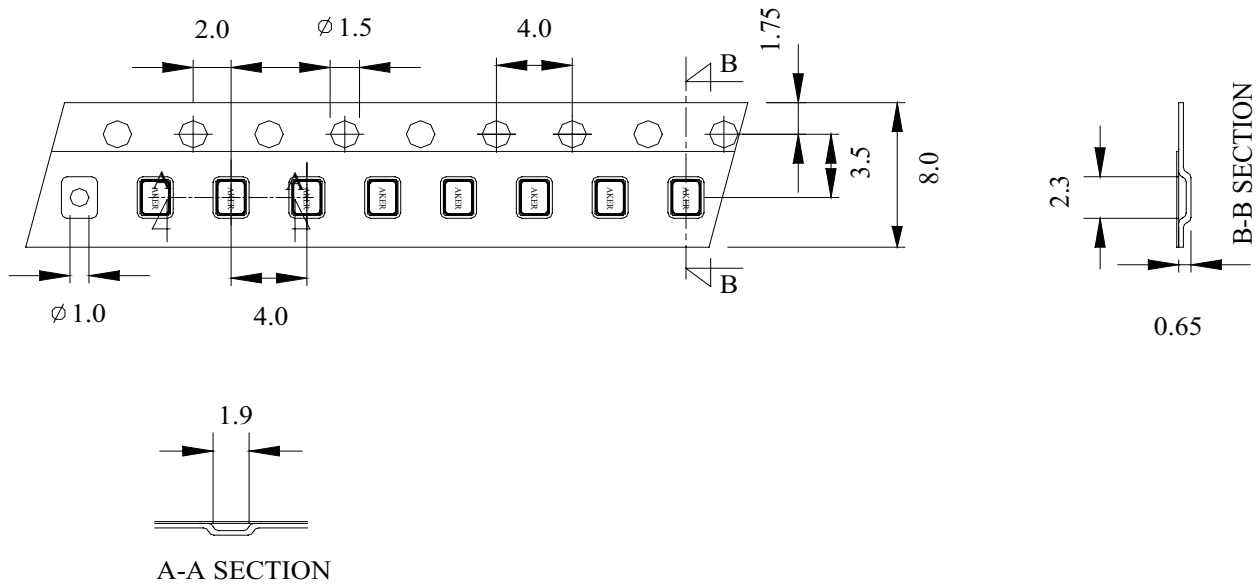
Part Number: **C1E Series**

Mechanical Outline:



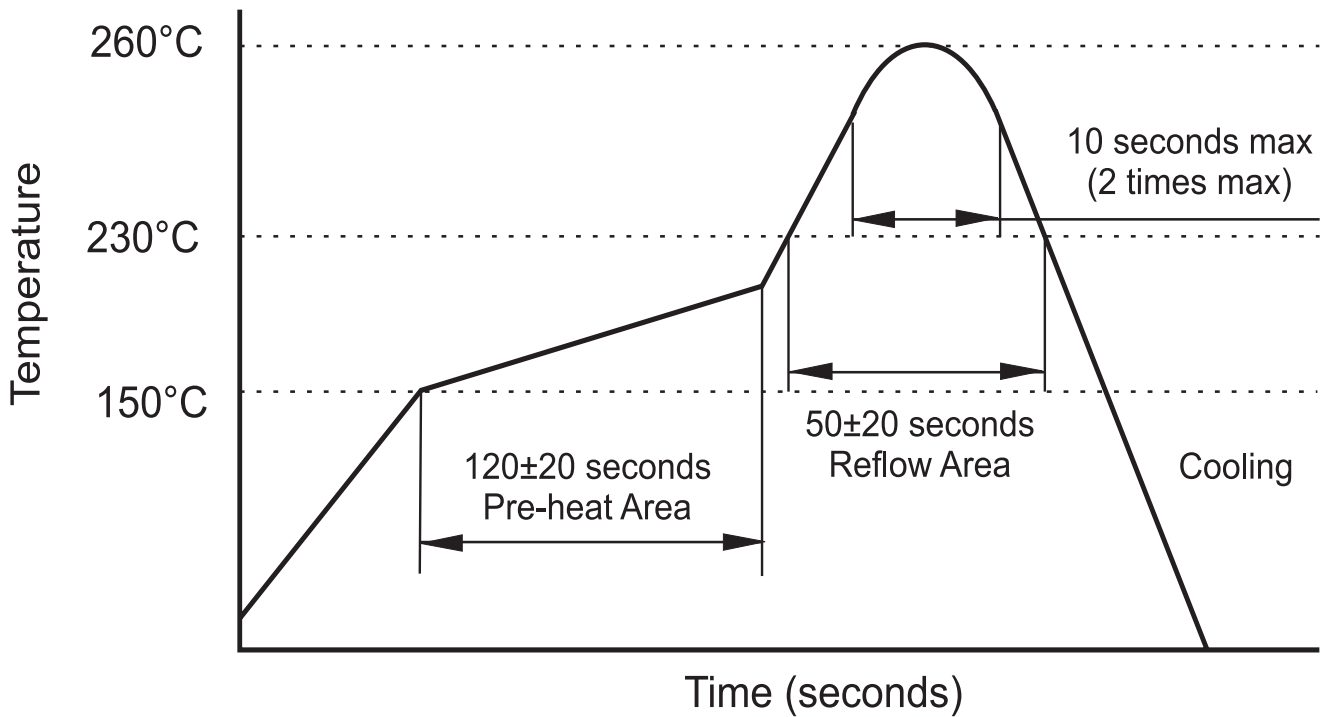
**Package is Seam Sealed Ceramic-Metal.
Dimensions are millimeters.**

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		16.000 to 50.000	MHz
		-	
Load Capacitance		6	6 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 +70 °C
	Extended	X	-40 to +85 °C
		-	
Packaging		M	250pcs Reel
		R	1000pcs Reel
		R3	3000pcs Reel

Part Number Example:

C1E-50.000-10-3050-R3

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 +70° C Temperature Range

R3: Tape and Reel Packaging - 3000pcs

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.

4- Quantities less than 250 are shipped in tape only.

5- Specification subject to change without notice.