

RoHS Compliant Pb - Lead Free	Ltr	Revisions	Date	Appr

### Electrical Specifications:

Frequency Range		16.000 to 54.000	MHz
Mode of Oscillation	Fundamental	16.000 to 54.000	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	-20 to +70	° 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 100 Vdc ± 15 Vdc	M Ohm

### Frequency Range and ESR Values:

Frequency Range in MHz	ESR Ohm Max	Mode of Operation
16.000 to 19.199	200	Fundamental
19.200 to 25.999	100	Fundamental
26.000 to 35.999	80	Fundamental
36.000 to 54.000	60	Fundamental



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All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: JL

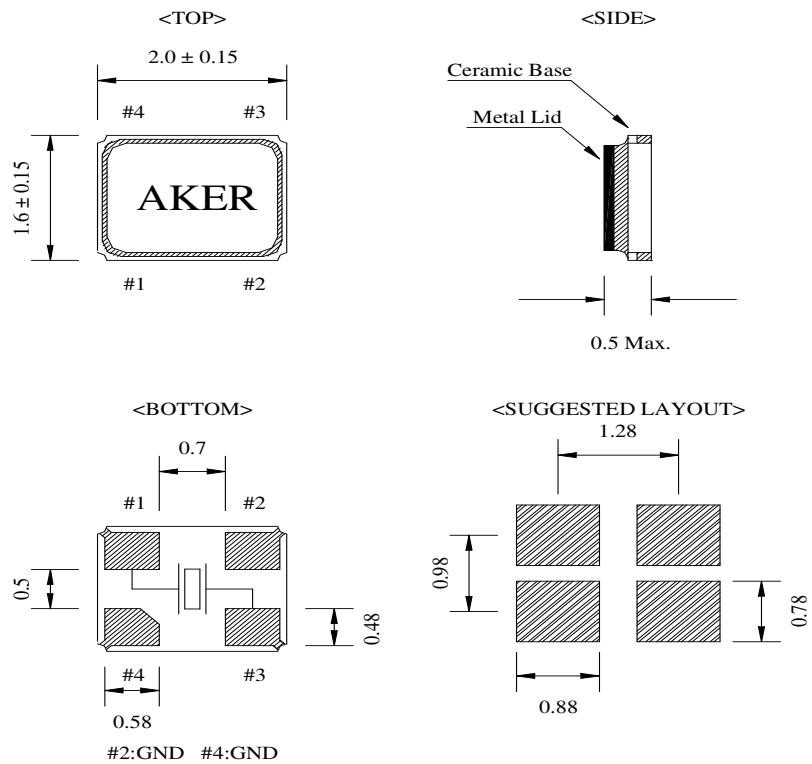
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### Specification Title:

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

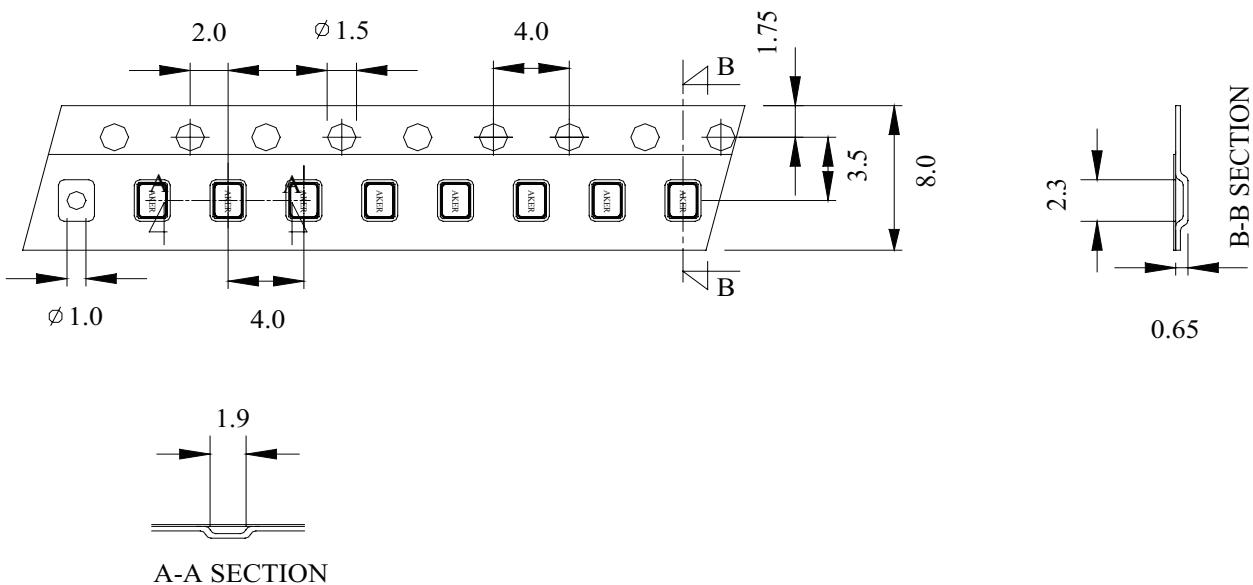
Part Number: **C1E Series**

## Mechanical Outline:



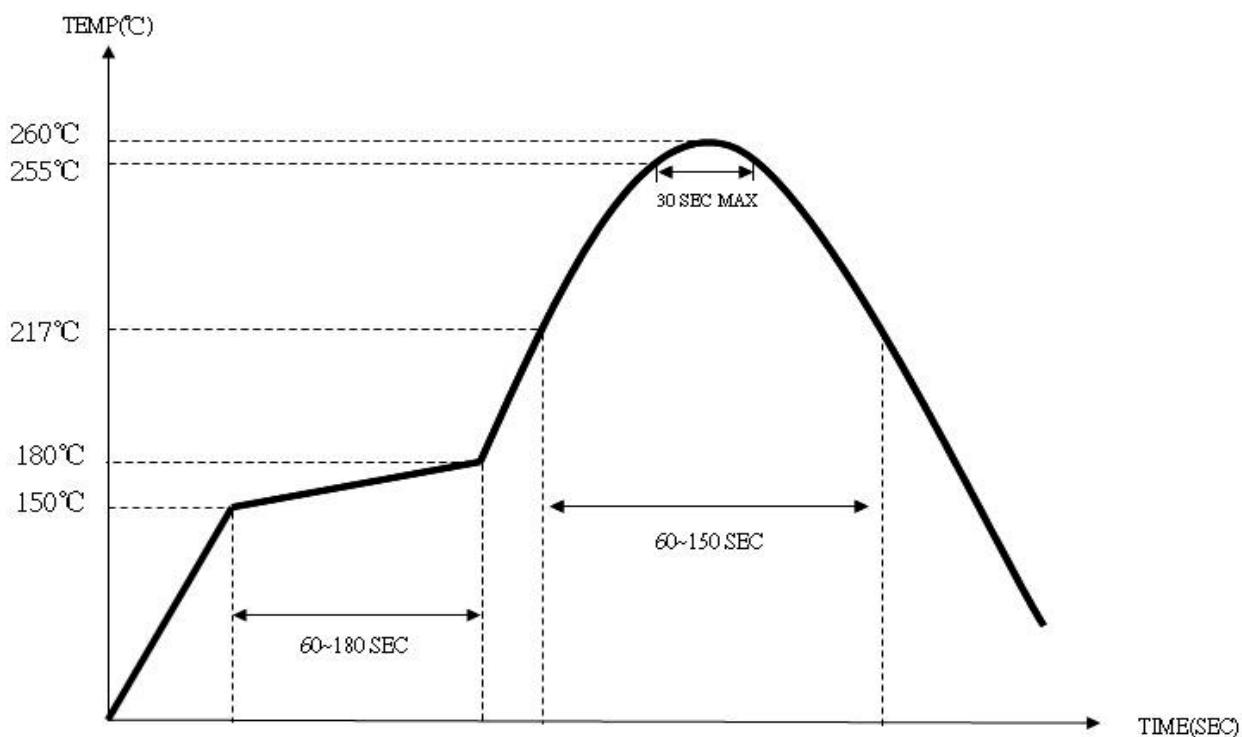
Package is Seam Sealed Ceramic-Metal.  
Dimensions are millimeters.

## Carrier Tape Dimensions:



Dimensions are millimeters.

## Solder Reflow Characteristics:



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## How to build a Part Number:

Series		C	Parameter
Package		1E	1.6 x 2.0 mm Seam Seal
Frequency		16.000 to 54.000	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	-20 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.

\* ±15 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.