



No.11-3 Jianguo Rd., T.E.P.Z. 42760 Taiwan, ROC

All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: JL

Page: 1/4 Date: August 01, 2022

Specification Title:

**Microprocessor Crystal Unit
Low Profile
2.0 x 1.6 millimeter Surface Mount - 4 Pad
General Product Specification**

Series Name: C1E Series

Electrical Specifications:

Frequency Range		16.000 to 96.000	MHz
Mode of Oscillation	Fundamental	16.000 to 96.000	MHz
Frequency Tolerance at 25°C	Standard	±30	PPM Max (Note 1)
	Optional	±50	
		±20	
		±15	
		±10	
Frequency Stability over Temperature Range	Standard	±50	PPM Max (Note 1)
	Optional	±100	
		±30	
		±25	
		±20	
Operating Temperature Range	Standard	-20 to +70	°C
	Extended	-40 to +85	
		-40 to +125	
Storage Temperature Range		-55 to +125	
Aging		±3	PPM Max/Year
Load Capacitance		6 to 47 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

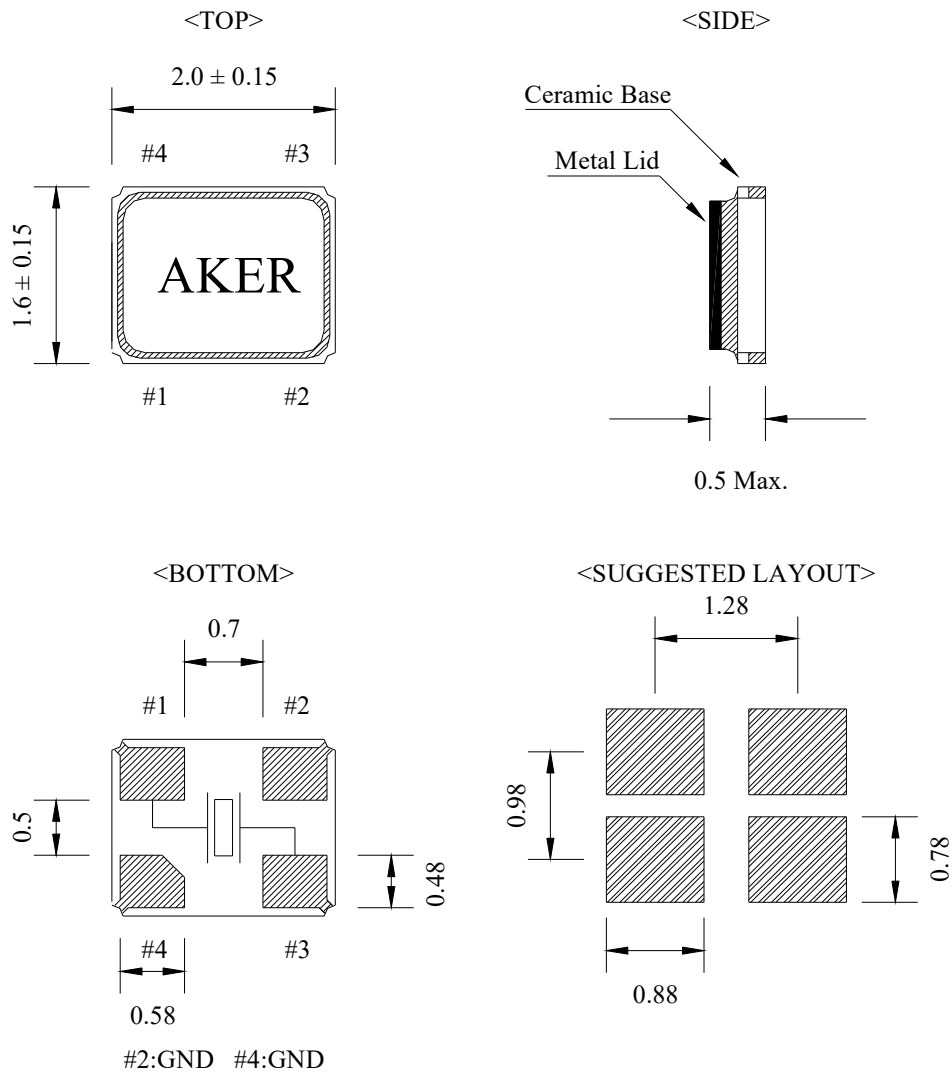
Frequency Range and ESR Values:

Frequency Range in MHz	ESR Ohm Max	Mode of Operation
16.000 to 19.199	200	Fundamental
19.200 to 21.999	100	Fundamental
22.000 to 35.999	80	Fundamental
36.000 to 96.000	60	Fundamental

**RoHS Compliant
Pb - Lead Free**

Ltr	Revisions	Date	Appr

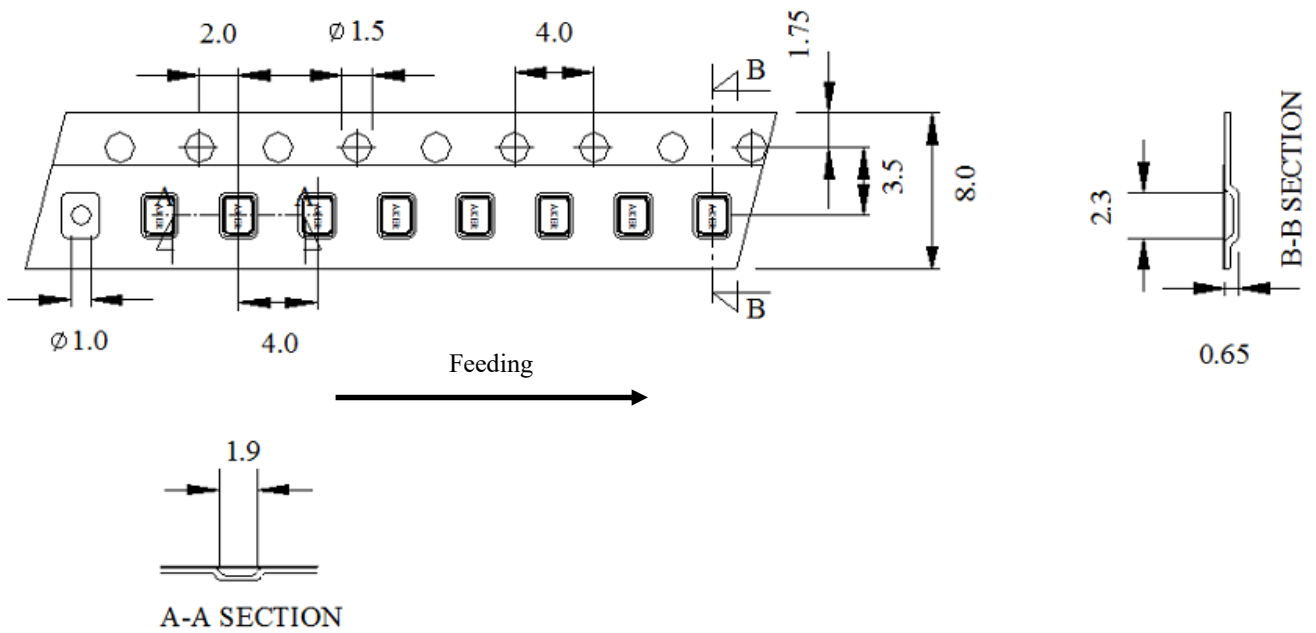
Mechanical Outline:



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

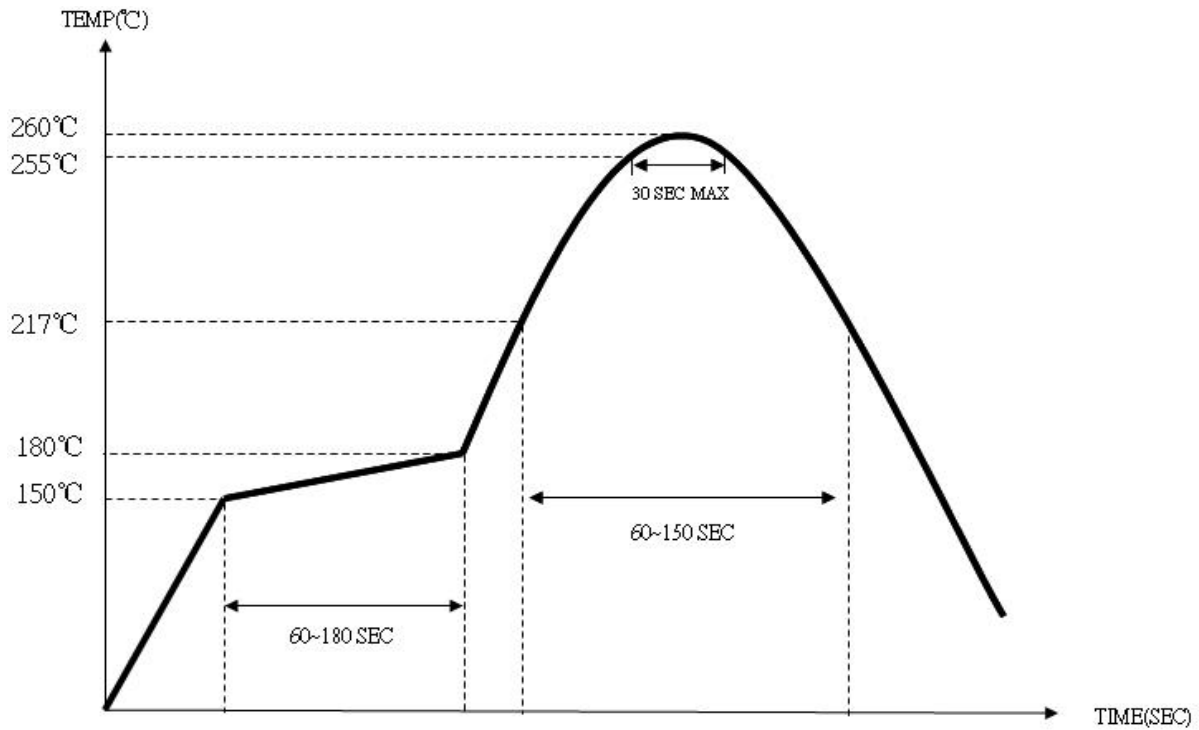
Page:	2/4	Date: August 01, 2022	P/N:	C1E Series	
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Carrier Tape Dimensions:



Dimensions are millimeters.

Solder Reflow Characteristics:



How to build a Part Number:

Series	C	Parameter	
Package	1E	2.0 x 1.6 mm - 4 Pad	
	-		
Frequency	16.000 to 96.000	MHz	
	-		
Load Capacitance	7	7pF	
	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	±30PPM
	Option	25	±25PPM
		20	±20PPM
		15	±15PPM
		10	±10PPM
Frequency Stability (Note 1)	Standard	50	±50PPM
	Option	30	±30PPM
		25	±25PPM
		20	±20PPM
		15	±15PPM
	-		
Temperature Range	Standard	See Notes	-20 to +70 °C
	Option	X	-40 to +85 °C
	Option	X1	-40 to +125 °C
	Option	X2	-40 to +105 °C
	-		
Packaging	M	250pcs Reel	
	R	1000pcs Reel	
	R3	3000pcs Reel	

Part Number Example:

C1E-50.000-10-3050-R3

C1E- 2.0 x 1.6 mm SMD Seam Seal Crystal Unit - 4 Pad

50.000 MHz Nominal Frequency

10 pF Load Capacitance

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

Fundamental Mode

-20 to +70°C Temperature Range

R3: Tape and Reel Packaging - 3000pcs

Notes:

- 1- Frequency Tolerance and Stability options are limited due to physical size.
- 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 250pcs are shipped in tape only.
- 5- Specification subject to change without notice.

Page: 4/4	Date: August 01, 2022	P/N: C1E Series	
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