

RoHS Compliant Pb - Lead Free AEC-Q200 Qualified	Ltr	Revisions	Date	Appr

Electrical Specifications:

Frequency Range		10.000 to 150.000	MHz
Mode of Oscillation	Fundamental	10.000 to 64.000	MHz
	Third Overtone	54.000 to 150.00	
Frequency Tolerance at 25°C		±50	PPM Max
Frequency Stability over Temperature Range		±100	
Operating Temperature Range		-40 to +125	°C
Storage Temperature Range		-55 to +150	
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	Frequency Range in MHz	ESR Ohm Max	Mode of Operation
10.000 to 11.999	150	Fundamental	54.000 to 99.999	150	Third Overtone
12.000 to 15.999	80	Fundamental	100.000 to 124.999	100	Third Overtone
16.000 to 19.999	60	Fundamental	125.000 to 150.000	80	Third Overtone
20.000 to 24.999	50	Fundamental			
25.000 to 53.999	40	Fundamental			
54.000 to 64.000	30	Fundamental			



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All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: JL

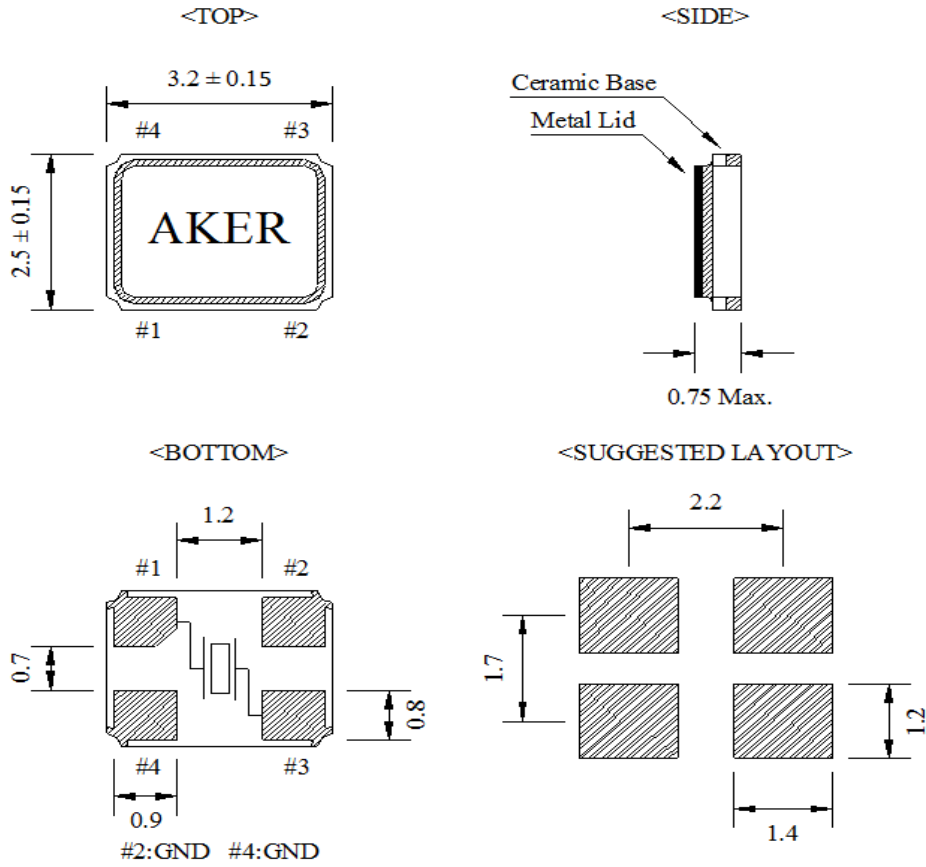
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Specification Title:

**Microprocessor Crystal Unit
Automotive Temperature Range
2.5 x 3.2 millimeter Surface Mount
General Product Specification**

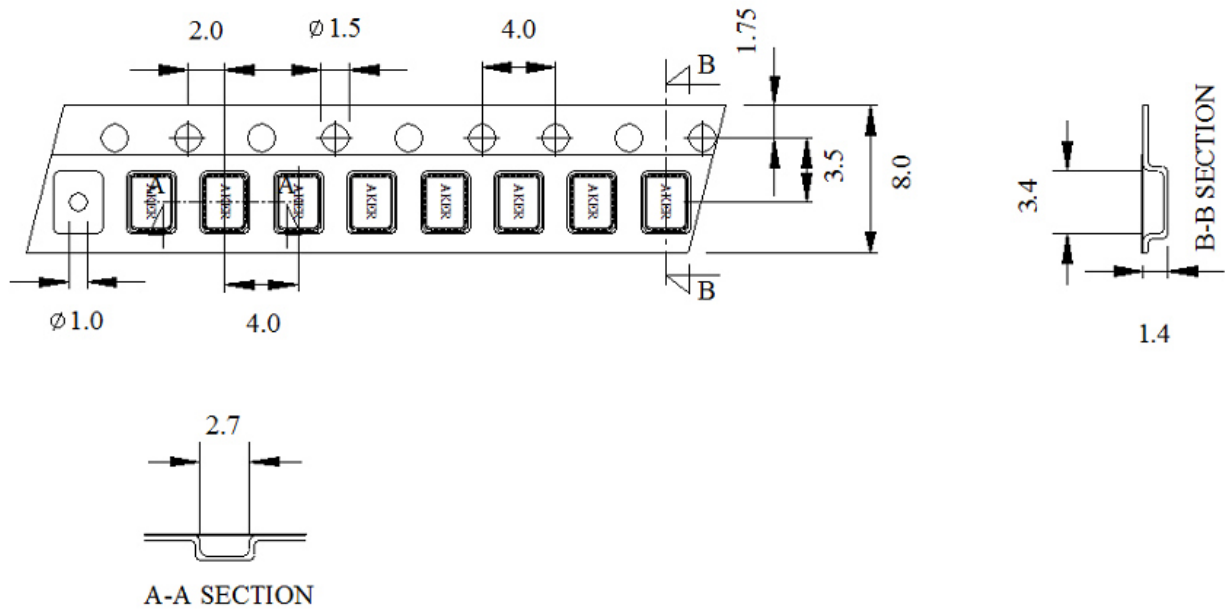
Part Number: C3E X1 Series

Mechanical Outline:



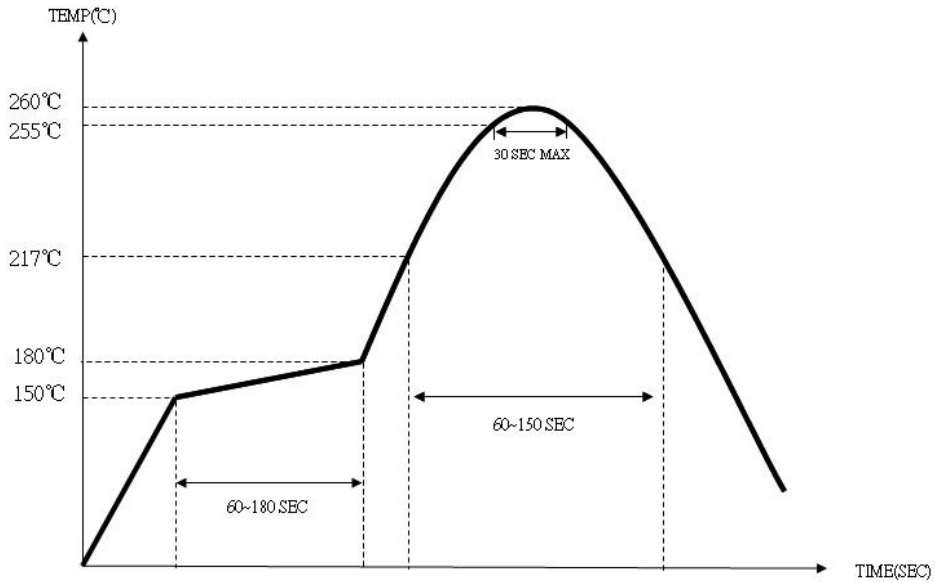
**Package is Seam Sealed Ceramic-Metal.
Dimensions are millimeters.**

Carrier Tape Dimensions:



Dimensions are millimeters.

Solder Reflow Characteristics:



How to build a Part Number:

Series	C	Parameter
Package	3E	3.2 x 2.5 mm
	-	
Frequency	10.000 to 150.000	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	50	±50PPM
Frequency Stability	100	±100PPM
	-	
Mode of Oscillation	See Notes	Fundamental
	3	Third Overtone
	-	
Temperature Range	X1	-40 to +125 °C
	-	
Packaging	R	Tape and Reel

Part Number Example:

C3E-32.768-18-50100-X1-R
C3E- 2.5 x 3.2 mm SMD Seam Seal Crystal Unit
32.768 MHz Nominal Frequency
18 pF Load Capacitance
50100: ±50 PPM Frequency Tolerance and ±100 PPM Frequency Stability
Fundamental Mode
X1: -40 to +125° C Temperature Range
R: Tape and Reel Packaging

Notes:

- 1- Product is shipped in Tape and Reel configuration. Each reel contains 3000 pieces.**
- 2- Quantities less than 3000 are shipped bulk in ESD pouches.**
- 3- Specification subject to change without notice.**

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