

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

Electrical Specifications:

Frequency Range		12.000 to 60.000	MHz
Mode of Oscillation	Fundamental	12.000 to 60.000	MHz
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
12.000 to 13.999	200	Fundamental
14.000 to 15.999	150	Fundamental
16.000 to 19.999	90	Fundamental
20.000 to 23.999	70	Fundamental
24.000 to 24.999	60	Fundamental
25.000 to 44.999	50	Fundamental
45.000 to 60.000	40	Fundamental



11-3 Chien-Kuo Rd T.E.P.Z. 4027 Taiwan, ROC

All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: JL

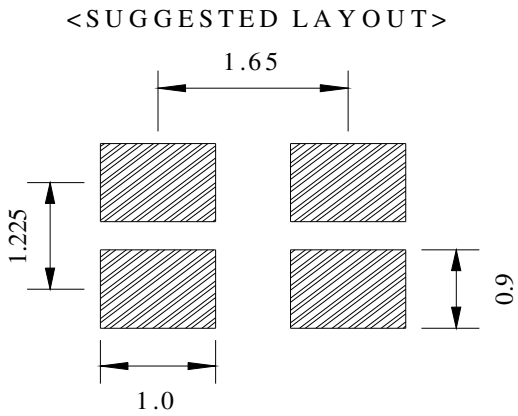
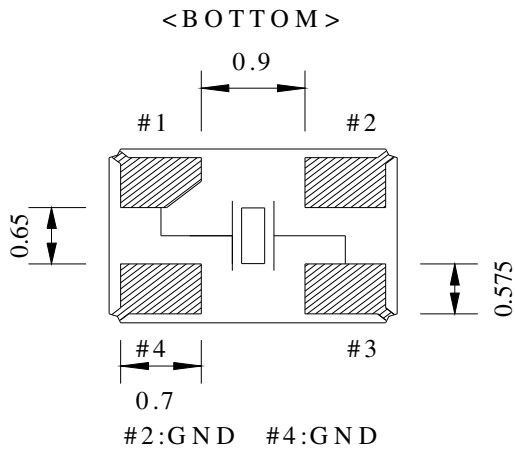
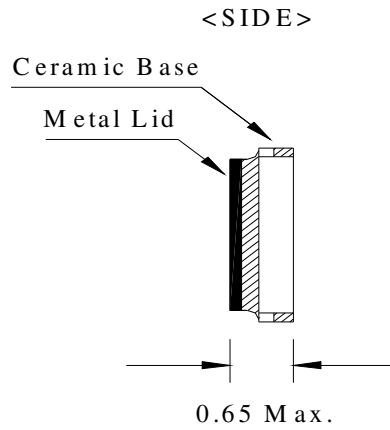
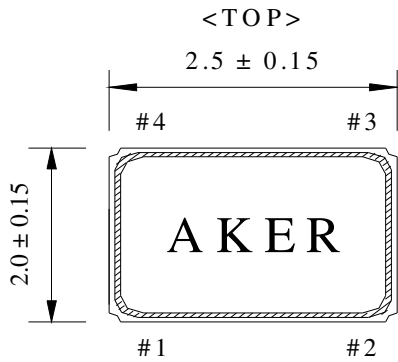
Page: 1/4 Date: Dec 28,2018

Specification Title:

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

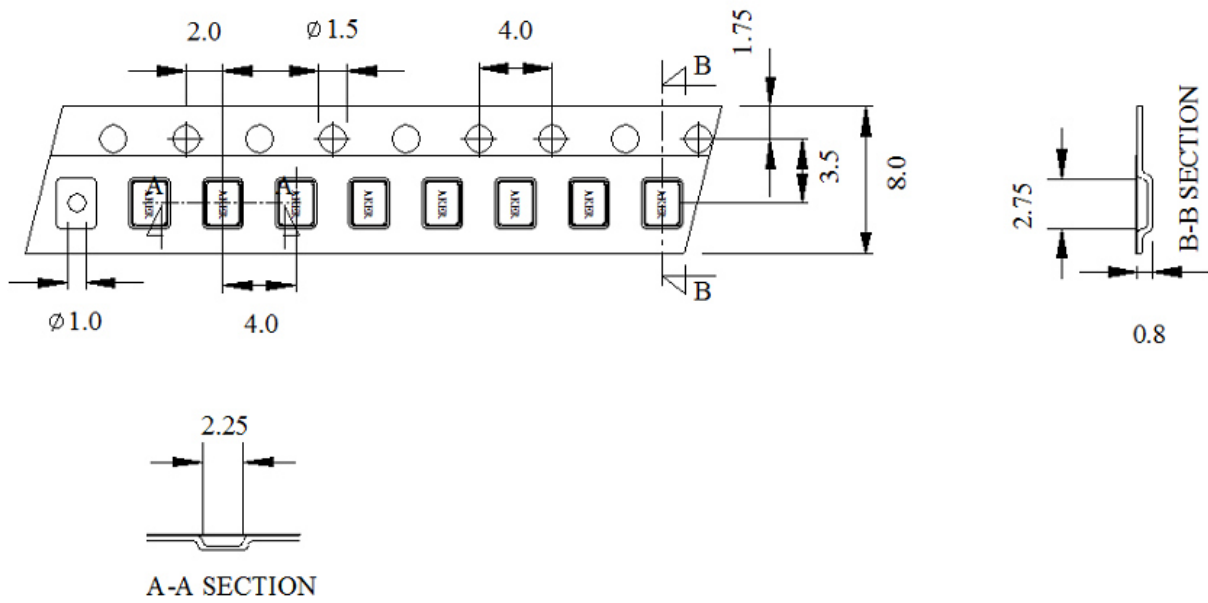
Part Number: C2E X1 Series

Mechanical Outline:



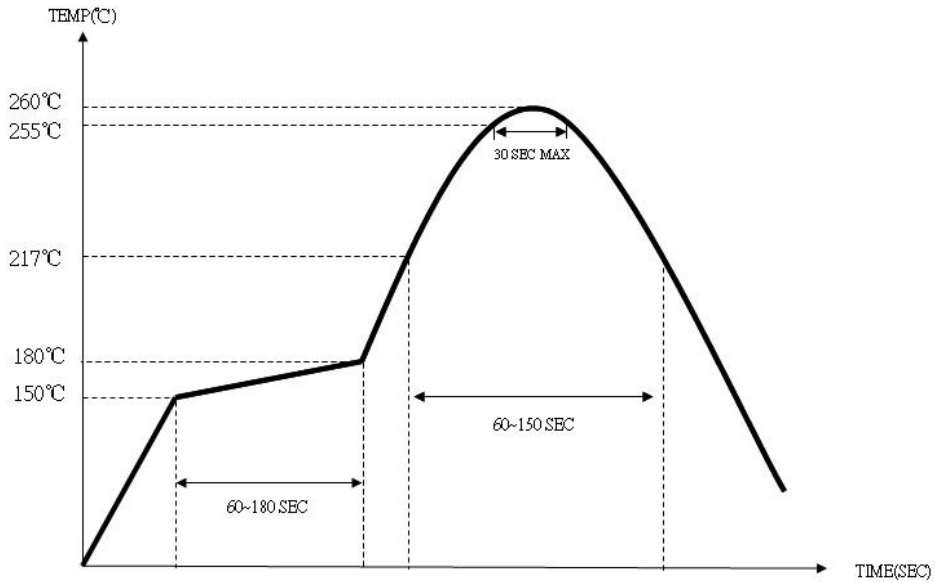
**Package is Seam Sealed Ceramic-Metal.
 Dimensions are millimeters.**

Carrier Tape Dimensions:



Dimensions are millimeters.

Solder Reflow Characteristics:



How to build a Part Number:

Series	C	Parameter
Package	2E	2.5 x 2.0 mm
	-	
Frequency	12.000 to 60.000	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	50	±50PPM
Frequency Stability	100	±100PPM
	-	
Temperature Range	X1	-40 to +125 °C
	-	
Packaging	R	Tape and Reel

Part Number Example:

C2E-50.000-18-50100-X1-R

C2E- 2.0 x 2.5 mm SMD Seam Seal Crystal Unit

50.000 MHz Nominal Frequency

18 pF Load Capacitance

50100: ±50 PPM Frequency Tolerance and ±100 PPM Frequency Stability

Fundamental Mode

X1: -40 to +125° C Automotive 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.**

Page: 4/4	Date: Dec 28,2018	P/N: C2E X1 Series	
-----------	-------------------	---------------------------	--