

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

Electrical Specifications:

Frequency Range		8.000 to 133.000	MHz
Mode of Oscillation	Fundamental	8.000 to 54.000	MHz
	Third Overtone	40.000 to 133.00	
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		10 to 32 and Series Resonance	pF
Shunt Capacitance		7.0	
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
8.000 to 9.749	70	Fundamental	40.000 to 79.999	100	Third Overtone
9.750 to 9.999	60	Fundamental	80.000 to 99.999	80	Third Overtone
10.000 to 11.999	45	Fundamental	100.000 to 133.000	60	Third Overtone
12.000 to 15.999	35	Fundamental			
16.000 to 19.999	30	Fundamental			
20.000 to 49.999	25	Fundamental			
50.000 to 54.000	20	Fundamental			



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All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: JL

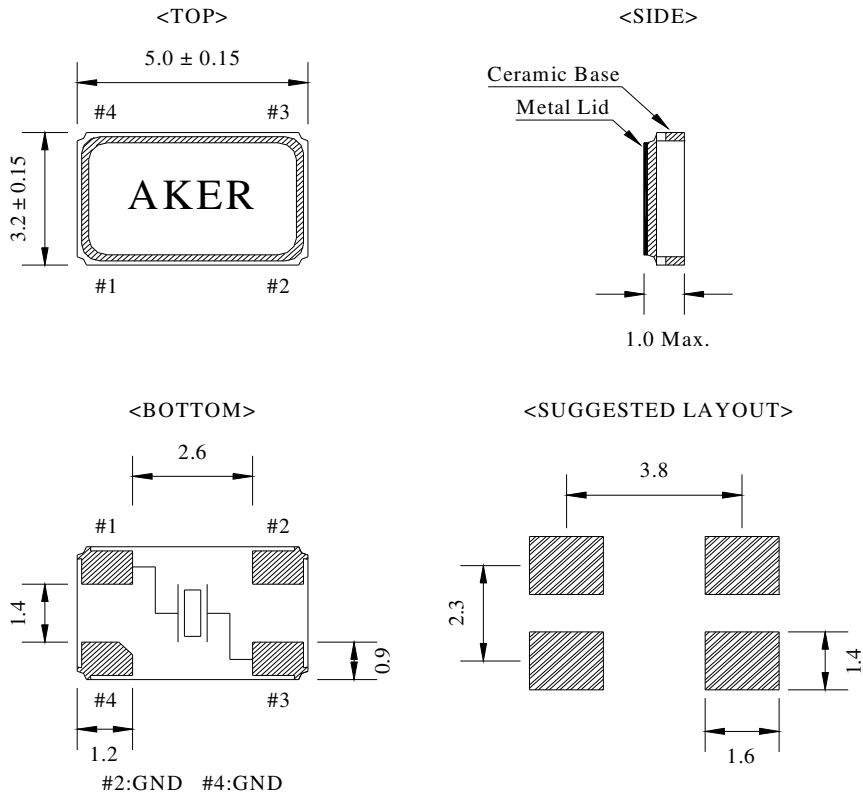
Page: 1/4 Date: Dec 28,2018

Specification Title:

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

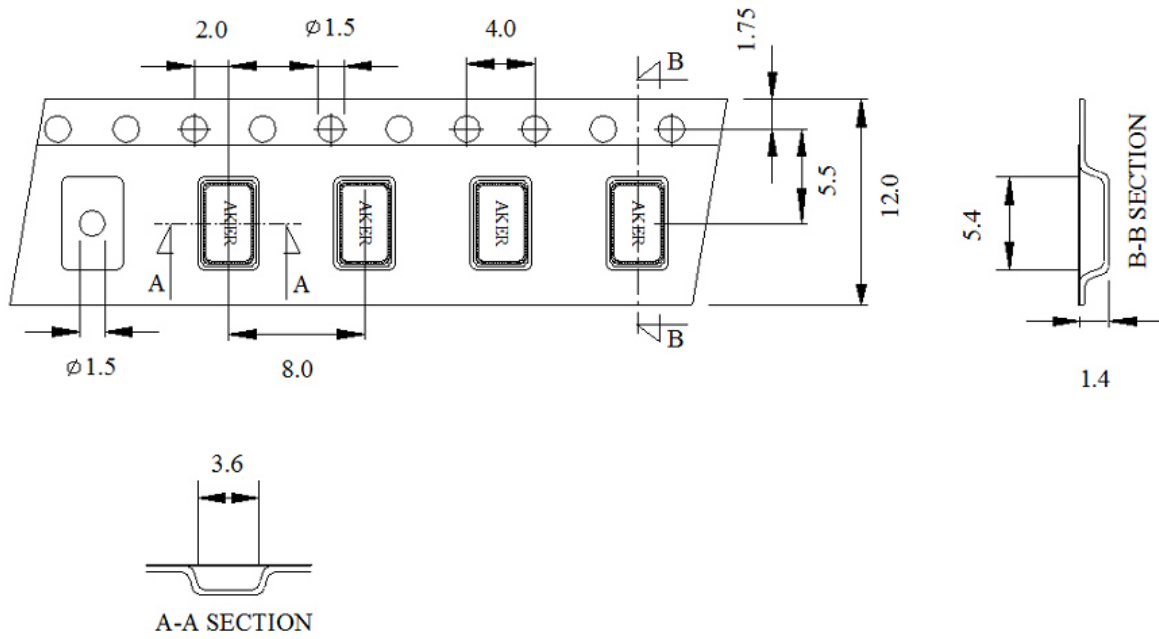
Part Number: C5S X1 Series

Mechanical Outline:



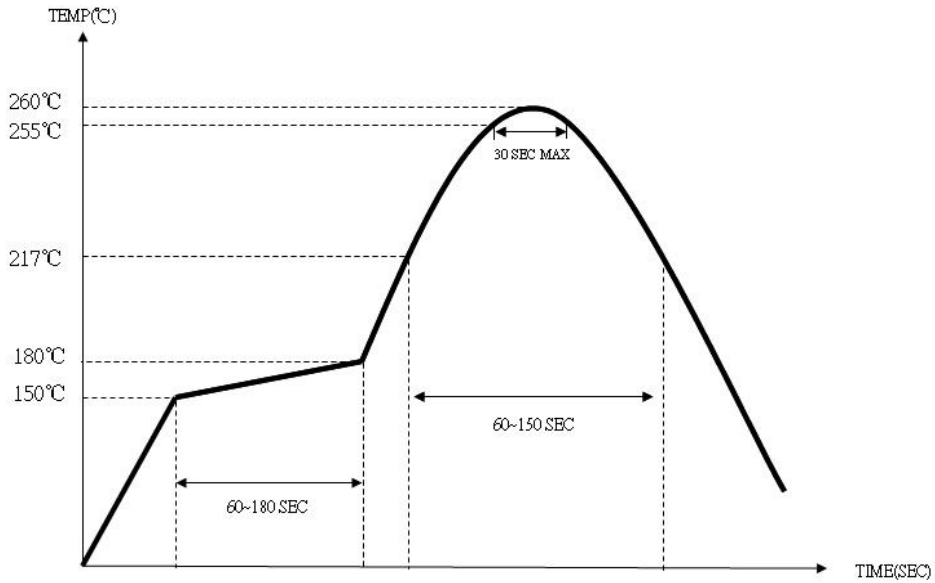
**Package is Seam Sealed Ceramic-Metal.
Dimensions are millimeters.**

Carrier Tape Dimensions:



Dimensions are millimeters.

Solder Reflow Characteristics:



How to build a Part Number:

Series	C	Parameter
Package	5S	5.0 x 3.2 mm
	-	
Frequency	8.000 to 133.000	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:

C5S-40.000-18-50100-X1-R

C5S: 5.0 x 3.2 mm SMD Seam Sealed Package

40.000 MHz Nominal Frequency

18 pF Load Capacitance

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

X1: -40 to +125° C Automotive Temperature Range

R: Tape and Reel Packaging

Notes:

- 1- Fundamental mode does not need to be included in Part Number description.
- 2- Other Load Capacitances are available than those listed in Part Number table above.
- 3- Product is shipped in Tape and Reel configuration. Each reel contains 1000 pieces.
- 4- Quantities less than 1000 are shipped bulk in ESD pouches.
- 5- Specification subject to change without notice

Page: 4/4	Date: Dec 28,2018	P/N: C5S X1 Series	
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