



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

All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: JL

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Specification Title:

Microprocessor Crystal Unit

Automotive Grade

2.0 x 1.6 millimeter Surface Mount - 4 Pad

General Product Specification

AEC-Q200 Qualified

IATF 16949 Certified

Series Name: C1E Auto Series

Electrical Specifications:

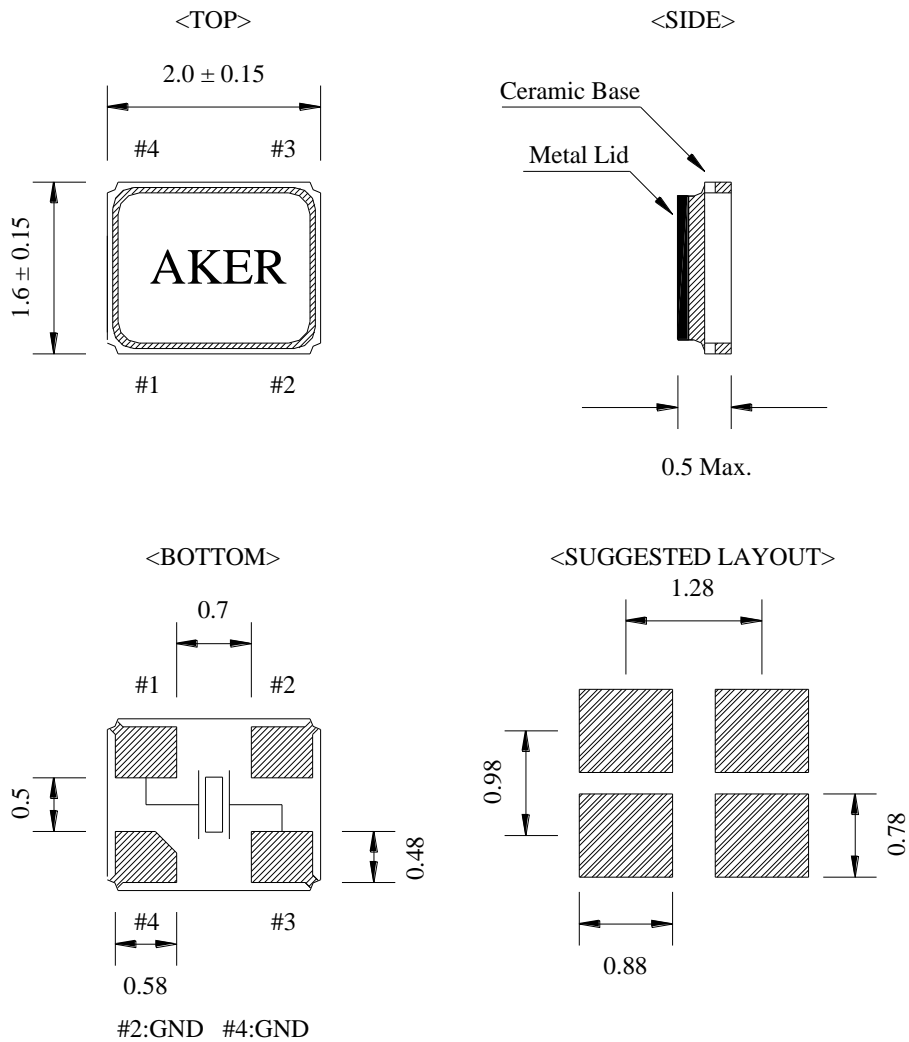
Frequency Range		16.000 to 125.000	MHz
Mode of Oscillation	Fundamental	16.000 to 96.000	MHz
	Third Overtone	100.000 to 125.000	MHz
Frequency Tolerance at 25°C	Standard	±30	PPM Max (Note 1)
	Optional	±50	
		±20	
		±15	
		±10	
Frequency Stability over Temperature Range	Standard	±50	PPM Max (Note 1)
	Optional	±100	
		±30	
		±25	
		±20	
Operating Temperature Range	Standard	-40 to +85	°C
	Optional	-40 to +105	
	Optional	-40 to +125	
Storage Temperature Range		-55 to +150	
Aging		±3	PPM Max/Year
Load Capacitance		6 to 47 and Series Resonance	pF
Shunt Capacitance		2.0	
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
16.000 to 19.199	150	Fundamental	100.000 to 125.000	100	Third Overtone
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 AEC-Q200 Qualified IATF 16949 Certified	Ltr	Revisions	Date	Appr

Mechanical Outline:



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

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How to build a Part Number:

Series		C	Parameter
Package		1E	2.0 x 1.6 mm - 4 Pad
-			
Frequency		16.000 to 125.000	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	50	±50PPM
		20	±20PPM
		15	±15PPM
		10	±10PPM
Frequency Stability (Note 1)	Standard	50	±50PPM
	Option	100	±100PPM
		30	±30PPM
		25	±25PPM
		20	±20PPM
-			
Mode of Oscillation		See Notes	Fundamental
		3	Third Overtone
-			
AECQ-200		A	Automotive
-			
Temperature Range	Standard	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-A-X-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

A: Automotive Grade

X: -40 to +85°C Temperature Range

R3: Tape and Reel Packaging - 3000pcs

Notes:

1- Frequency Tolerance and Stability options are limited due to physical size.

*** ±10 PPM Temperature Stability is only available from -30 to +85° C.**

2- Product is shipped in Tape and Reel configuration

3- Quantities less than 250pcs are shipped in tape only.

4- Specification subject to change without notice.

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