



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  
Automotive Grade  
2.0 x 1.6 millimeter Surface Mount - 4 Pad  
General Product Specification**

**Series Name: C1E Auto Series**

**Electrical Specifications:**

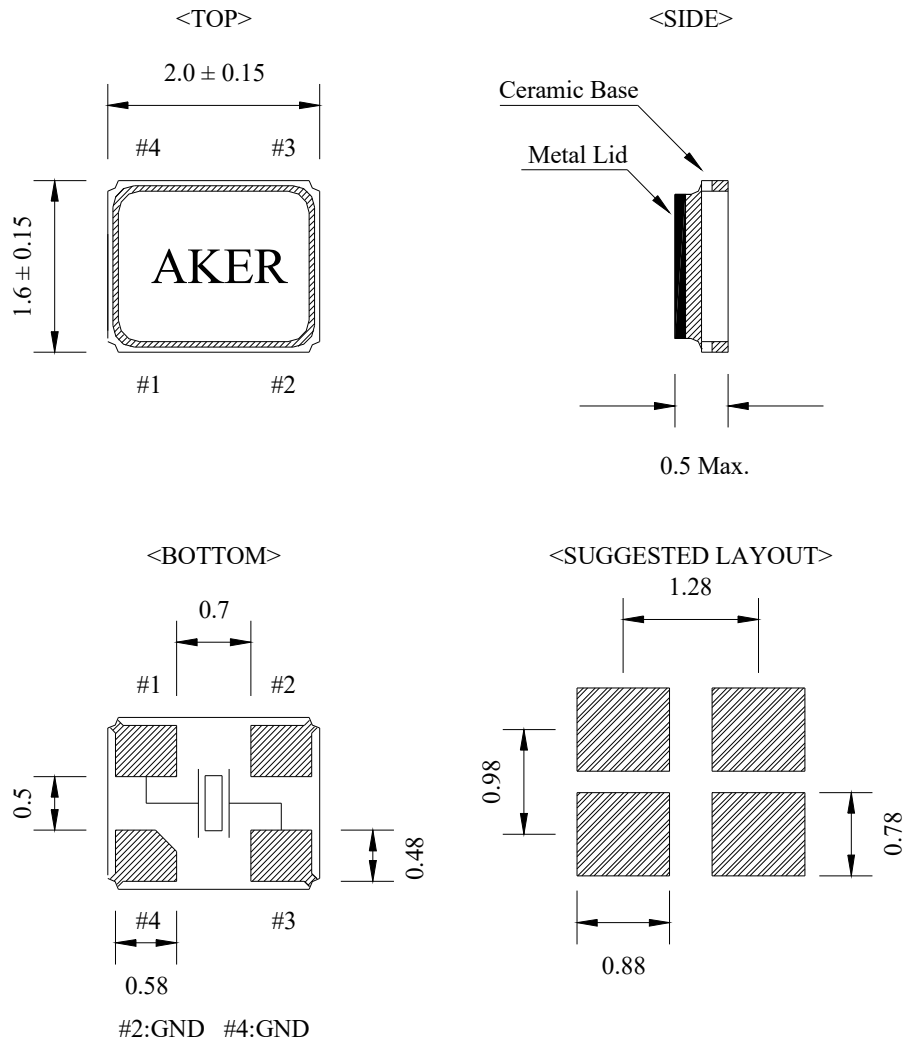
Frequency Range		16.000 to 96.000	MHz
Mode of Oscillation	Fundamental	16.000 to 96.000	MHz
Frequency Tolerance at 25°C	Standard	±30	PPM Max (Note 1)
	Optional	±50	
		±20	
		±15	
		±10	
Frequency Stability over Temperature Range	Standard	±50	PPM Max (Note 1)
	Optional	±100	
		±30	
		±25	
		±20	
Operating Temperature Range	Standard	-40 to +85	°C
	Extended	-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		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.**



**How to build a Part Number:**

<b>Series</b>	<b>C</b>	<b>Parameter</b>	
<b>Package</b>	<b>1E</b>	<b>2.0 x 1.6 mm - 4 Pad</b>	
-			
<b>Frequency</b>	<b>16.000 to 96.000</b>	<b>MHz</b>	
-			
<b>Load Capacitance</b>	<b>7</b>	<b>7pF</b>	
	<b>10</b>	<b>10 pF</b>	
	<b>12</b>	<b>12 pF</b>	
	<b>16</b>	<b>16 pF</b>	
	<b>18</b>	<b>18 pF</b>	
	<b>20</b>	<b>20 pF</b>	
	<b>32</b>	<b>32 pF</b>	
	<b>S</b>	<b>Series</b>	
-			
<b>Frequency Tolerance (Note 1)</b>	<b>Standard</b>	<b>30</b>	<b>±30PPM</b>
	<b>Option</b>	<b>50</b>	<b>±50PPM</b>
		<b>20</b>	<b>±20PPM</b>
		<b>15</b>	<b>±15PPM</b>
		<b>10</b>	<b>±10PPM</b>
<b>Frequency Stability (Note 1)</b>	<b>Standard</b>	<b>50</b>	<b>±50PPM</b>
	<b>Option</b>	<b>30</b>	<b>±30PPM</b>
		<b>25</b>	<b>±25PPM</b>
		<b>20</b>	<b>±20PPM</b>
-			
<b>AECQ-200</b>	<b>A</b>	<b>Automotive</b>	
-			
<b>Temperature Range</b>	<b>Standard</b>	<b>X</b>	<b>-40 to +85 °C</b>
	<b>Option</b>	<b>X1</b>	<b>-40 to +125 °C</b>
	<b>Option</b>	<b>X2</b>	<b>-40 to +105 °C</b>
-			
<b>Packaging</b>	<b>M</b>	<b>250pcs Reel</b>	
	<b>R</b>	<b>1000pcs Reel</b>	
	<b>R3</b>	<b>3000pcs Reel</b>	

**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**

**A: Automotive Grade**

**Fundamental Mode**

**-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.**

**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.**

Page: 4/4	Date: August 01, 2022	P/N: <b>C1E Auto Series</b>	
-----------	-----------------------	-----------------------------	--