

RoHS Compliant  
Pb - Lead Free  
AEC-Q200 Qualified

Ltr	Revisions	Date	Appr

**Electrical Specifications:**

Frequency Range		12.000 to 52.000	MHz
Mode of Oscillation	Fundamental	12.000 to 52.000	
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 per Year		±3	PPM Max
Load Capacitance		7 to 32 and Series Resonance	pF
Shunt Capacitance		5.0	
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 29.900	100	Fundamental
30.000 to 52.000	50	Fundamental



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

All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: JL

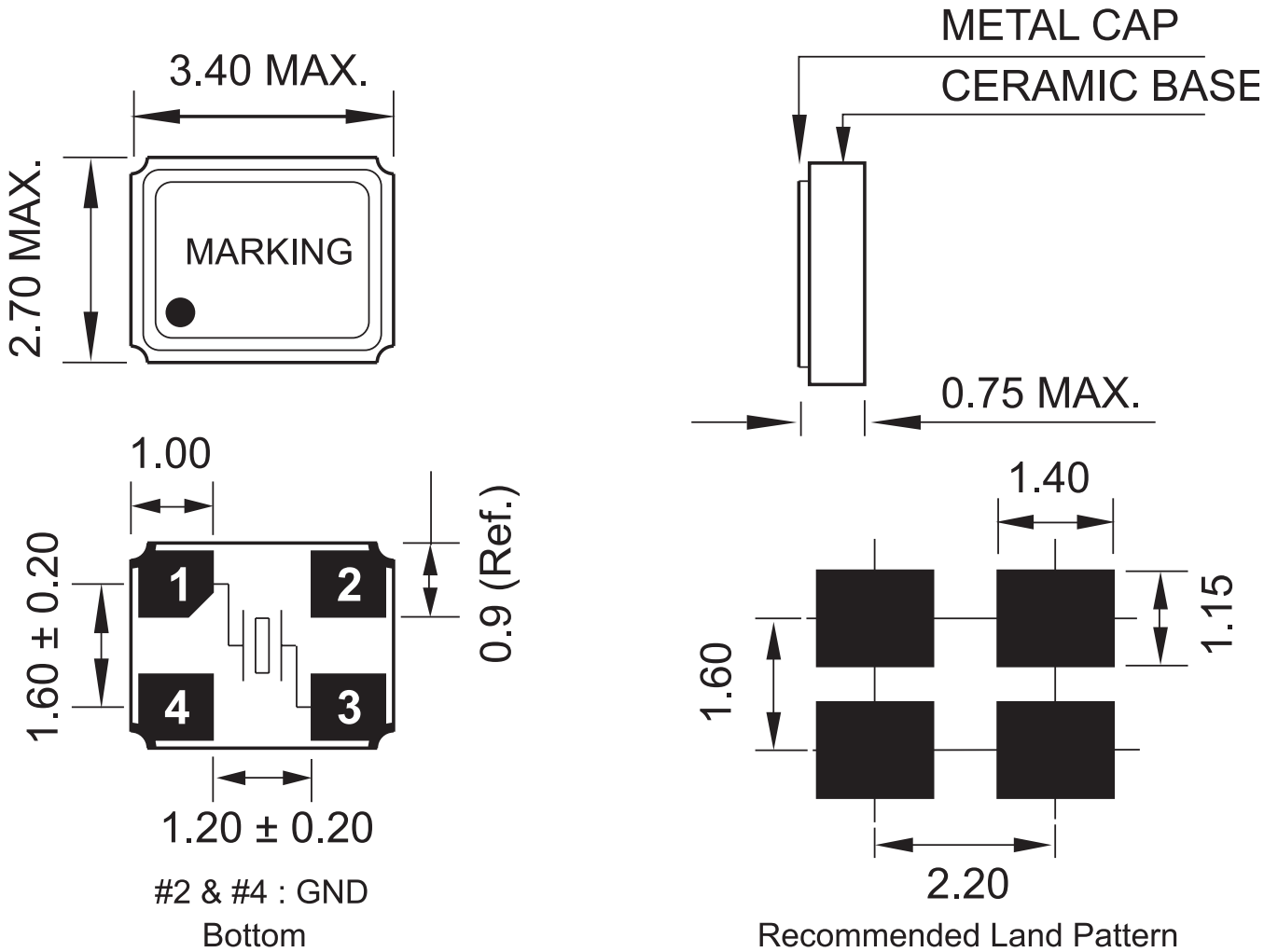
Page: 1/4 Date: April 15, 2008

Specification Title:

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

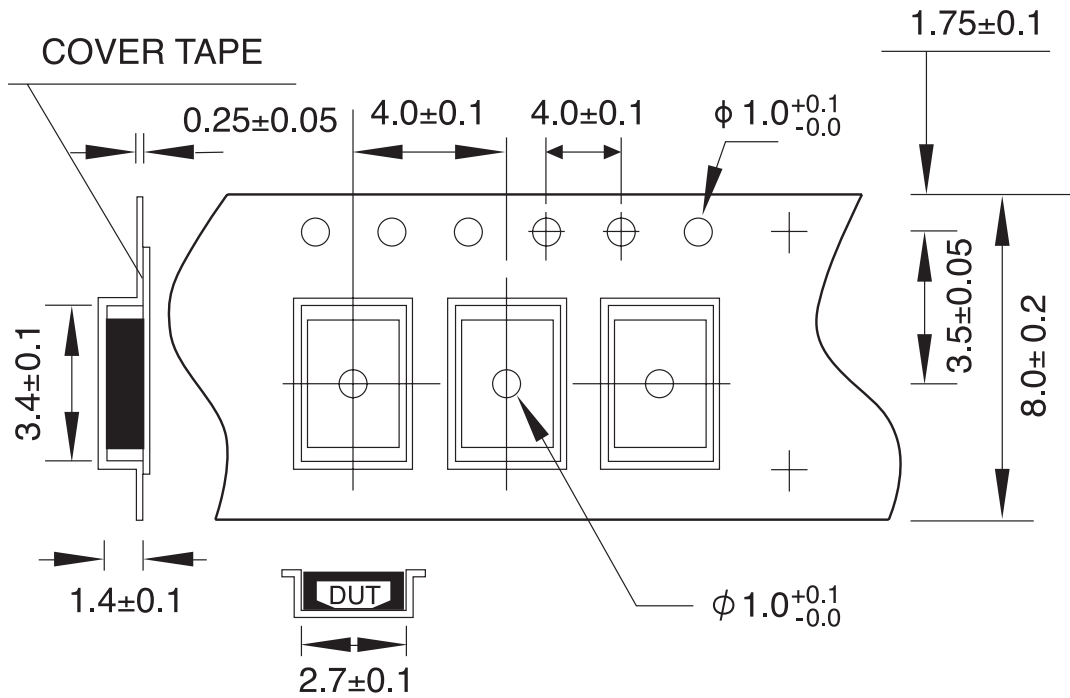
Part Number: **C3E X1 Series**

**Mechanical Outline:**



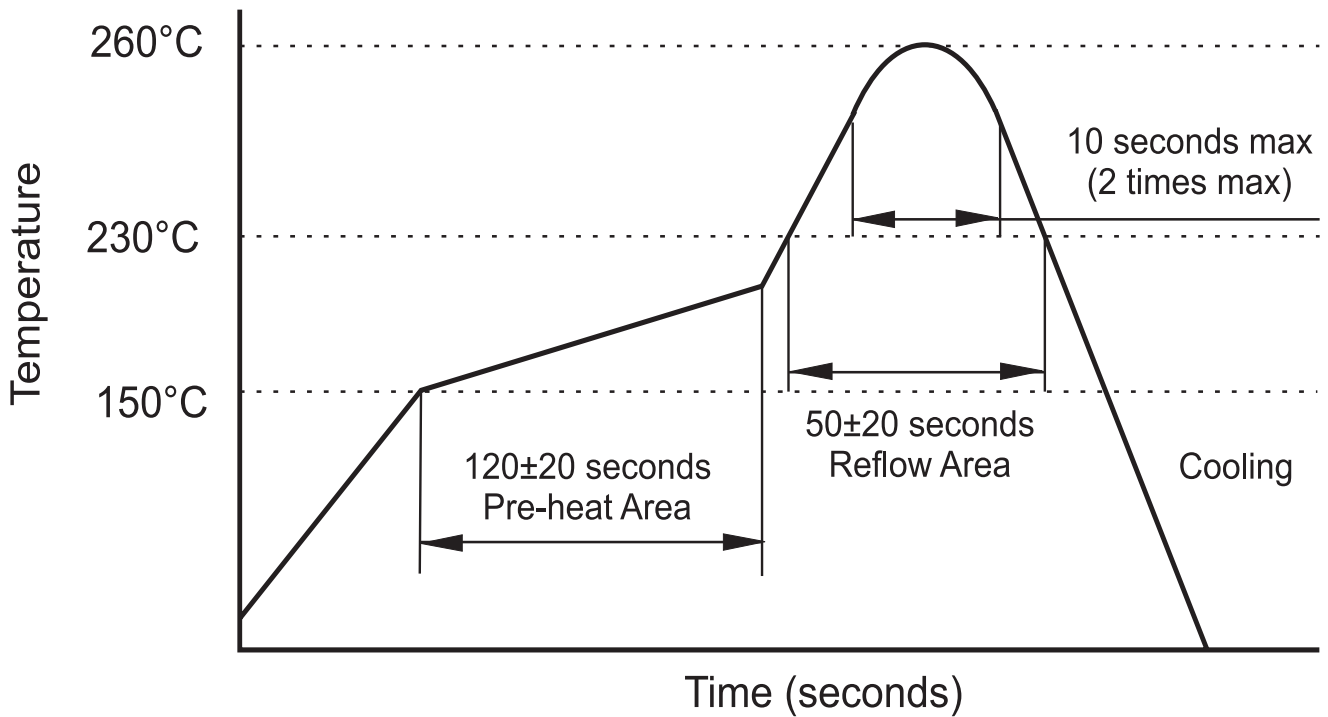
**Package is Seam Sealed Ceramic-Metal.  
Dimensions are millimeters.**

**Carrier Tape Dimensions:**



**Dimensions are millimeters.**

**Solder Reflow Characteristics:**



**How to build a Part Number:**

<b>Series</b>	<b>C</b>	<b>Parameter</b>
<b>Package</b>	<b>3E</b>	<b>3.2 x 2.5 mm</b>
	-	
<b>Frequency</b>	<b>12.000 to 52.000</b>	<b>MHz</b>
	-	
<b>Load Capacitance</b>	<b>7</b>	<b>7 pF</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</b>	<b>50</b>	<b>±50 PPM</b>
<b>Frequency Stability</b>	<b>100</b>	<b>±100 PPM</b>
	-	
<b>Temperature Range</b>	<b>X</b>	<b>-40 to +125 °C</b>
	-	
<b>Packaging</b>	<b>R</b>	<b>Tape and Reel</b>

**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.**