

**RoHS Compliant  
Pb - Lead Free**

Ltr	Revisions	Date	Appr

**Electrical Specifications:**

Frequency Range		8.000 to 150.000	MHz
Mode of Oscillation	Fundamental	8.000 to 52.000	MHZ
	Third Overtone	40.000 to 150.000	
Frequency Tolerance at 25°C	Standard	±30	PPM Max
	Optional	±25	
		±20	
		±15	
		±10	
Frequency Stability over Temperature Range	Standard	±50	PPM Max
	Optional	±30	
		±25	
		±20	
		±15	
Operating Temperature Range	Standard	-10 to +70	° C
	Extended	-40 to +85	
Storage Temperature Range		-55 to +125	
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 Typ
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
8.000 to 10.000	150	Fundamental
10.100 to 12.000	90	Fundamental
12.100 to 15.000	70	Fundamental
15.100 to 30.000	50	Fundamental
30.100 to 52.000	30	Fundamental
40.000 to 52.000	100	Third Overtone
52.100 to 80.000	100	Third Overtone
80.100 to 150.000	80	Third Overtone



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All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: JL

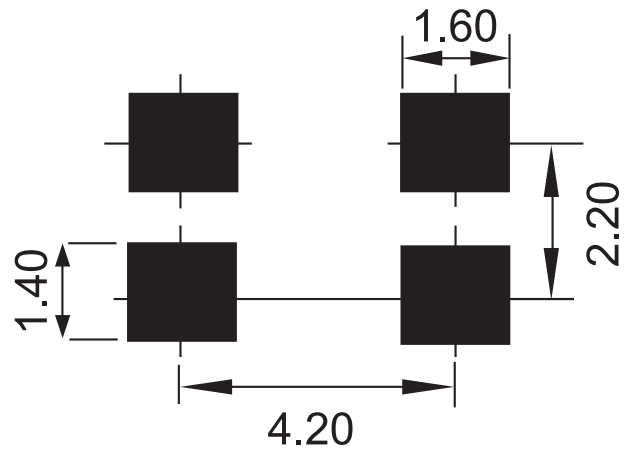
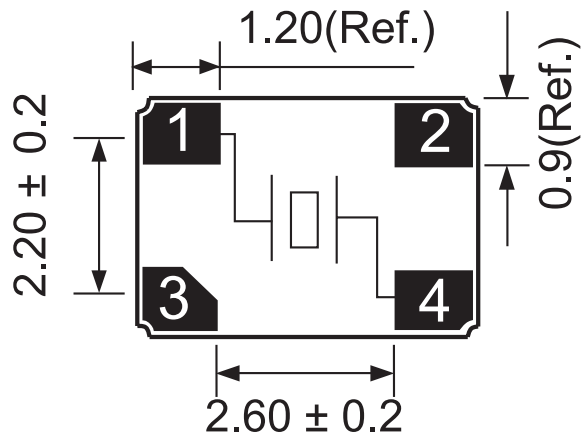
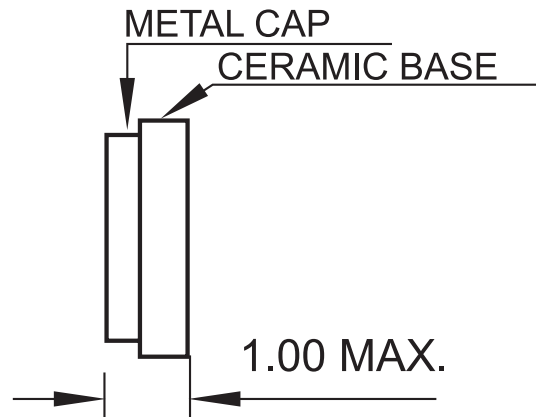
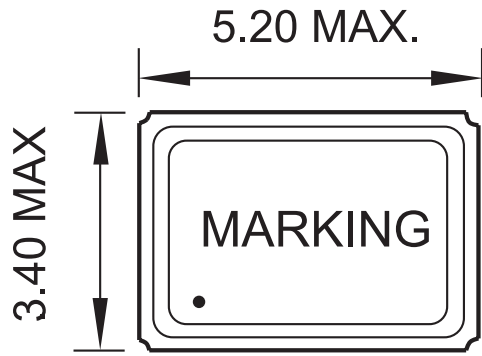
Page: 1/4 Date: May 1, 2013

Specification Title:

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

Part Number: **C5S Series**

**Mechanical Outline:**

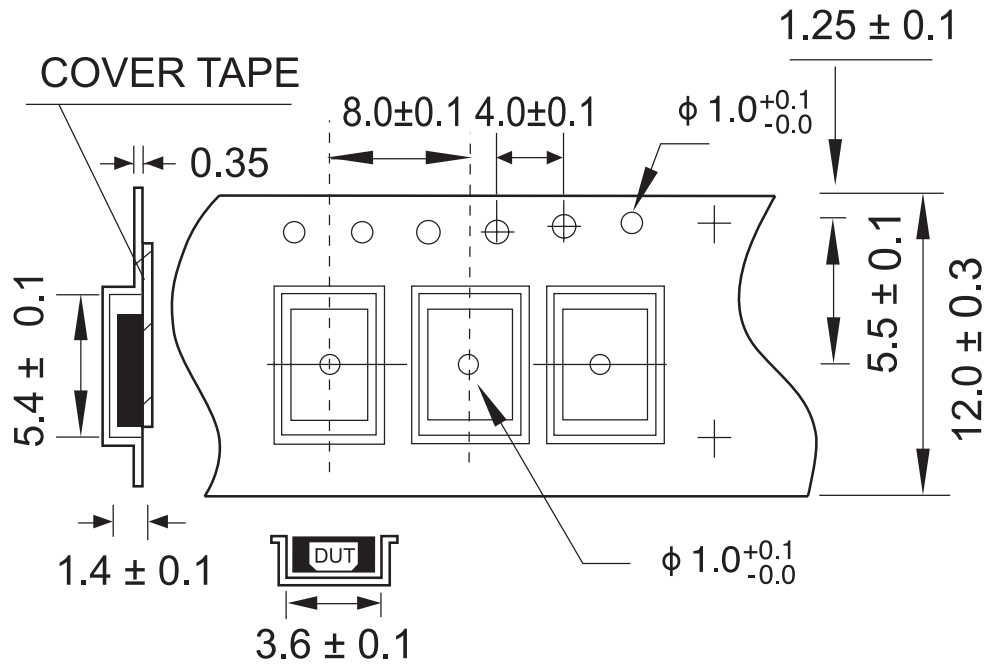


#2 & #4 : GND  
Bottom

Recommended Land Pattern

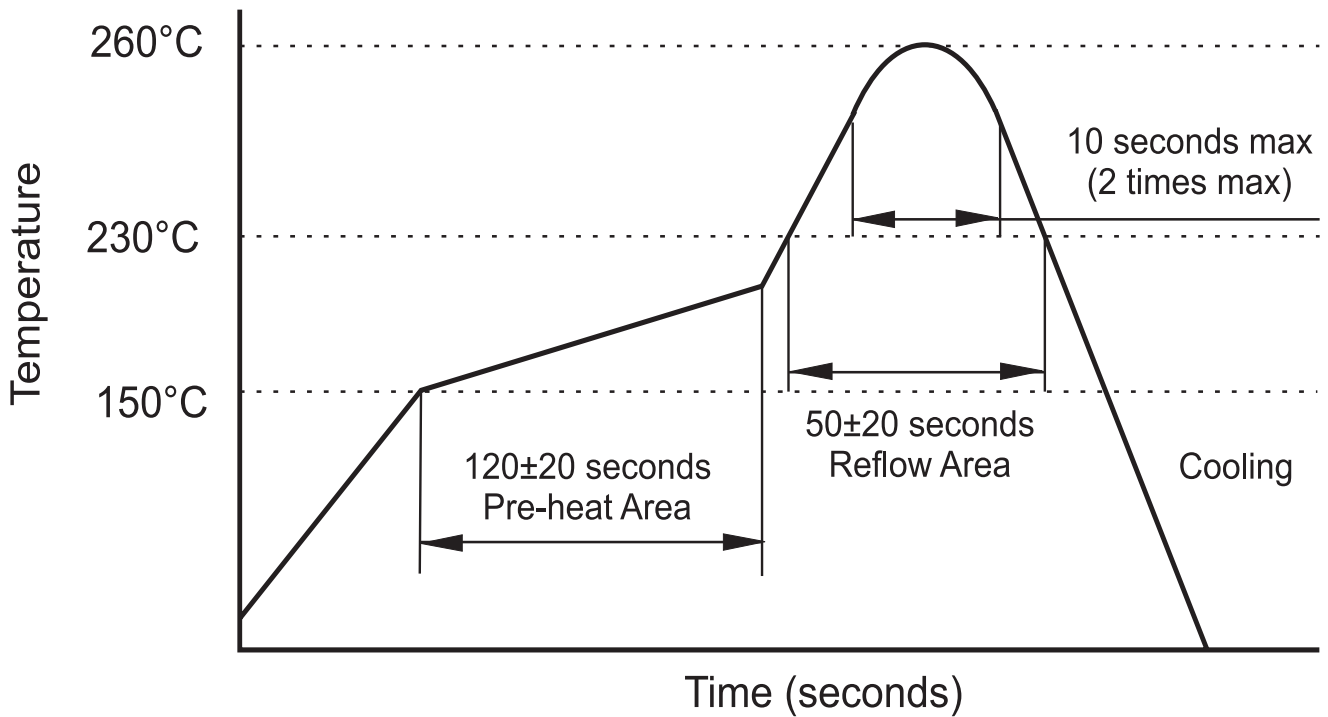
Package is Seam Sealed Ceramic-Metal.  
Dimensions are millimeters.

### 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>5S</b>	<b>5.0 x 3.2 mm</b>
		-	
<b>Frequency</b>		<b>8.000 to 150.000</b>	<b>MHz</b>
		-	
<b>Load Capacitance</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>Standard</b>	<b>30</b>	<b>±30 PPM</b>
	<b>Option</b>	<b>20</b>	<b>±20 PPM</b>
		<b>15</b>	<b>±15 PPM</b>
		<b>10</b>	<b>± 10 PPM</b>
<b>Frequency Stability</b>	<b>Standard</b>	<b>50</b>	<b>±50 PPM</b>
	<b>Option</b>	<b>30</b>	<b>±30 PPM</b>
		<b>20</b>	<b>±20 PPM</b>
		<b>15</b>	<b>±15 PPM</b>
		<b>10</b>	<b>±10 PPM*</b>
		-	
<b>Mode of Oscillation</b>		<b>See Notes</b>	<b>Fundamental</b>
		<b>3</b>	<b>Third Overtone</b>
		-	
<b>Temperature Range</b>	<b>Standard</b>	<b>See Notes</b>	<b>-10 to +70 °C</b>
	<b>Option</b>	<b>X</b>	<b>-40 to +85 °C</b>
		-	
<b>Packaging</b>		<b>R</b>	<b>Tape and Reel</b>

**Part Number Example:**

**C5S-40.000-3050-X-R**

**C5S: 5.0 x 3.2 mm SMD Seam Sealed Package**

**40.000 MHz Nominal Frequency**

**18 pF Load Capacitance**

**3050: ±30 PPM Frequency Tolerance and ±50 PPM Frequency Stability**

**X: -40 to +85° C Extended Temperature Range**

**R: Tape and Reel Packaging**

**Notes:**

- 1- Fundamental mode does not need to be included in Part Number description.  
\* ±10 PPM Temperature Stability is only available from -30 to +85° C.
- 2- Othe Load Capacitances are availble 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