

**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
		±25	
	Optional	±20	
		±15	
		±10	
Frequency Stability over Temperature Range	Standard	±50	PPM Max
		±30	
	Optional	±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

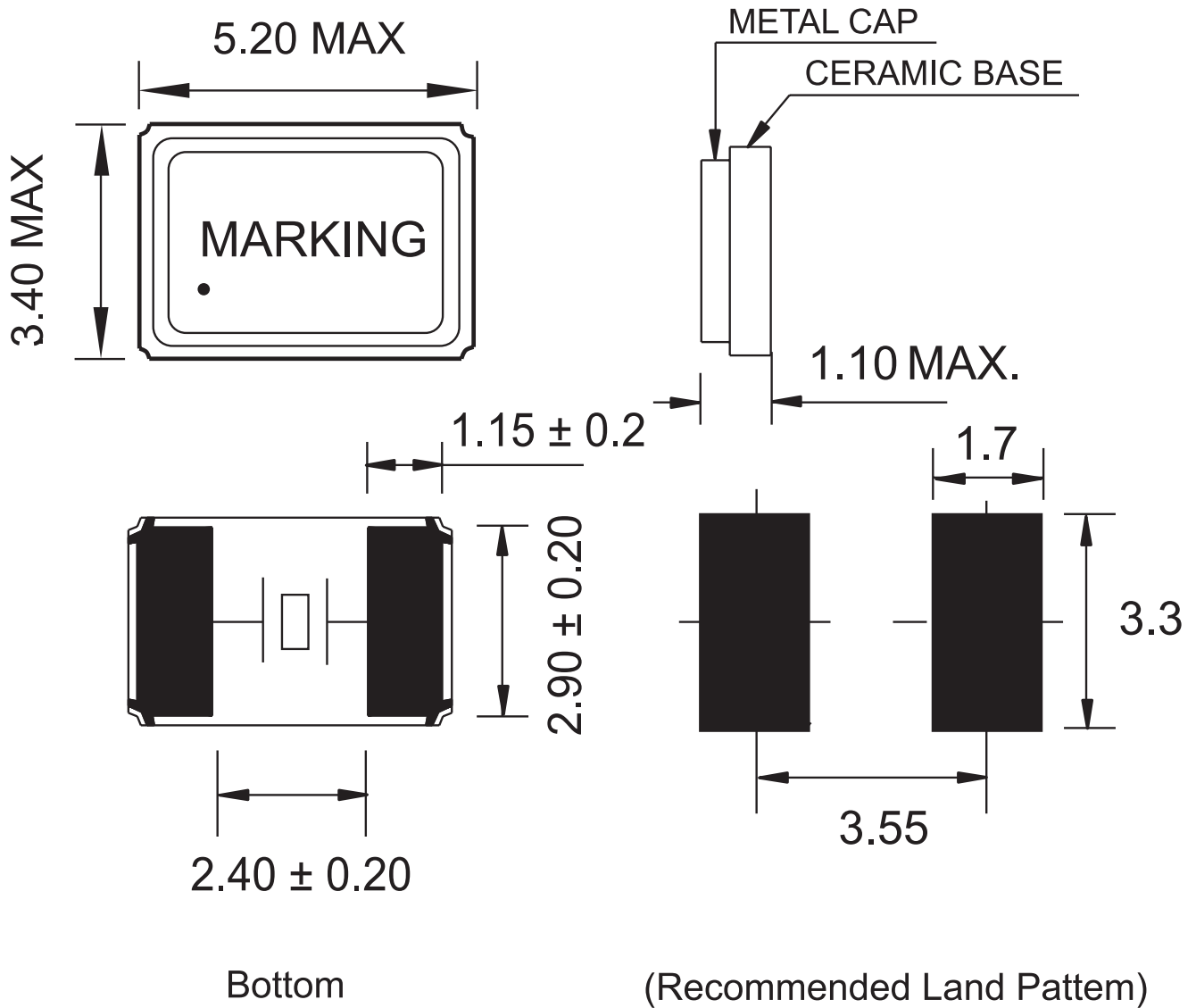
Page: 1/4 Date: May 1, 2013

Specification Title:

**Microprocessor Crystal Unit
Low Profile - 2 Pad
5.0 x 3.2 millimeter Surface Mount
General Product Specification**

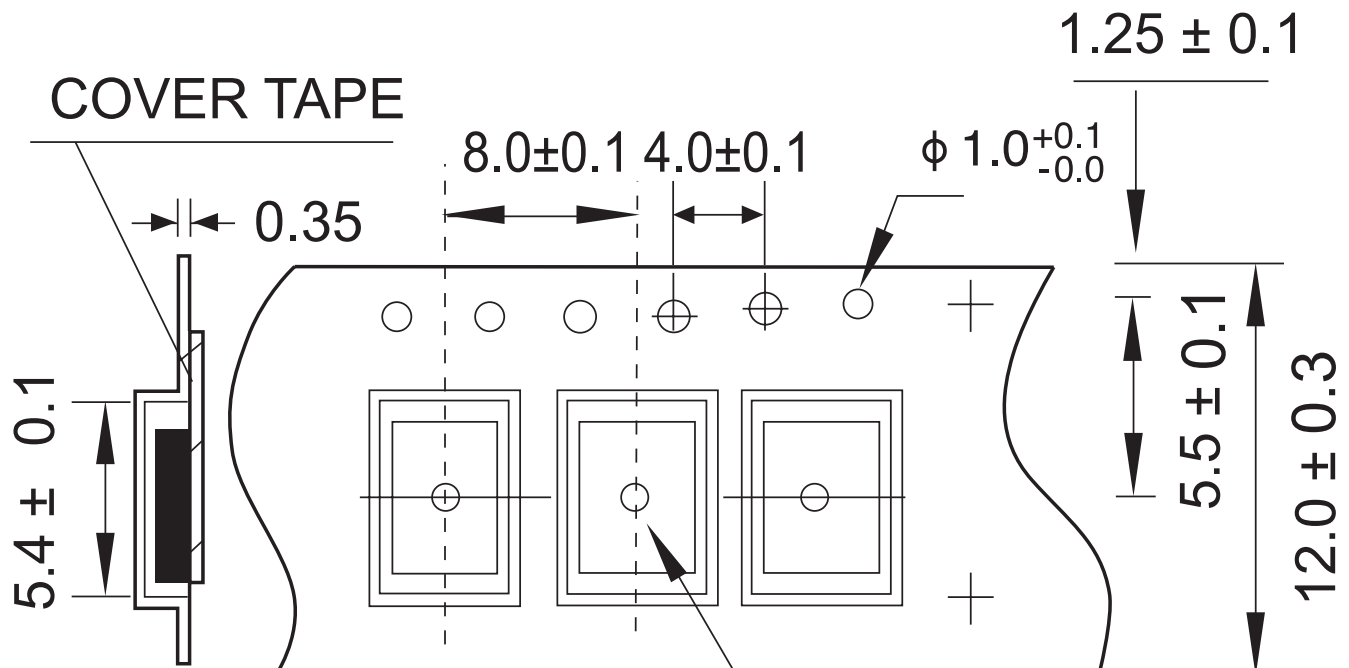
Part Number: **C5SA Series**

Mechanical Outline:



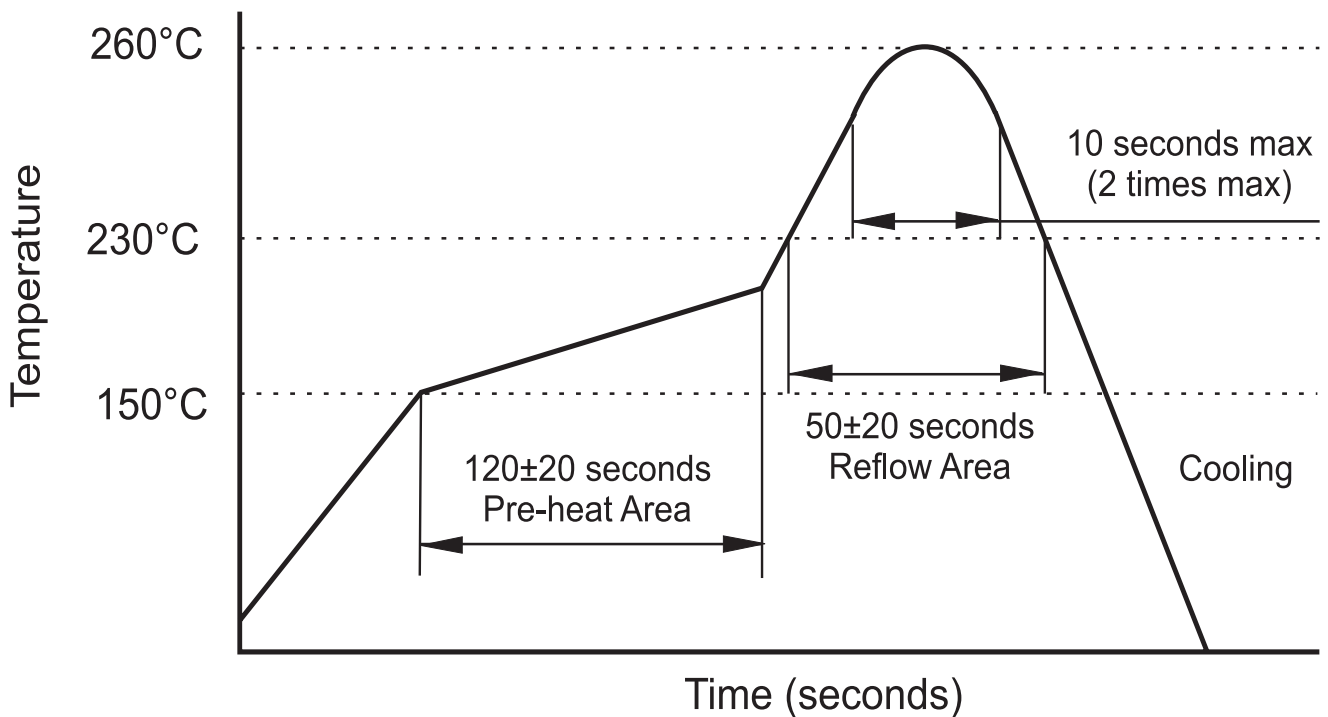
**Package is Seam Sealed Ceramic-Metal.
Dimensions are millimeters.**

Carrier Tape Dimensions:



Dimensions are millimeters.

Solder Reflow Characteristics:



How to build a Part Number:

Series		C	Parameter
Package		5SA	5.0 x 3.2 mm - 2 Pad
		-	
Frequency		8.000 to 150.000	MHz
		-	
Load Capacitance		10	10 pF
		12	12 pF
		16	16 pF
		18	18 pF
		20	20 pF
		32	32 pF
		S	Series
		-	
Frequency Tolerance	Standard	30	±30 PPM
	Option	20	±20 PPM
		15	±15 PPM
		10	± 10 PPM
Frequency Stability	Standard	50	±50 PPM
	Option	30	±30 PPM
		20	±20 PPM
		15	±15 PPM
		10	±10 PPM*
		-	
Mode of Oscillation		See Notes	Fundamental
		3	Third Overtone
		-	
Temperature Range	Standard	See Notes	-10 to +70 °C
	Option	X	-40 to +85 °C
		-	
Packaging		R	Tape and Reel

Part Number Example:

C5SA-50.000-18-3050-R

C5SA: 5.0 x 3.2 mm SMD Seam Seal Ceramic - Metal Package - 2 Pad

50.000 MHz Nominal Frequency

18 pF Load Capacitance

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

-10 to +70° C 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- Standard Temperature Range does not need to be included in Part Number description.
- 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