

**RoHS Compliant
Pb - Lead Free**

Ltr	Revisions	Date	Appr

Electrical Specifications:

Frequency Range		8.000 to 133.000	MHz
Mode of Oscillation	Fundamental	10.000 to 52.000	MHZ
	Third Overtone	52.100 to 133.000	
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	Ohms
Drive Level		100	uW Typ
Insulation Resistance		500 at 100 Vdc ± 15 Vdc	M Ohms

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	80	Fundamental
12.100 to 20.000	50	Fundamental
20.100 to 40.000	40	Fundamental
40.100 to 52.000	20	Fundamental
52.100 to 133.000	70	Third Overtone



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All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: JL

Page: 1/4 Date: May 1, 2013

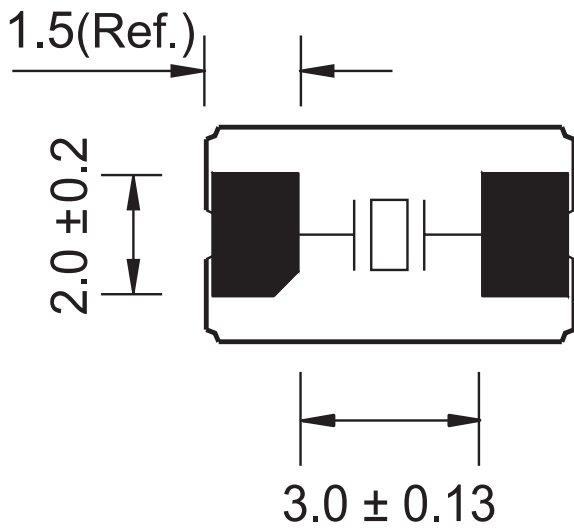
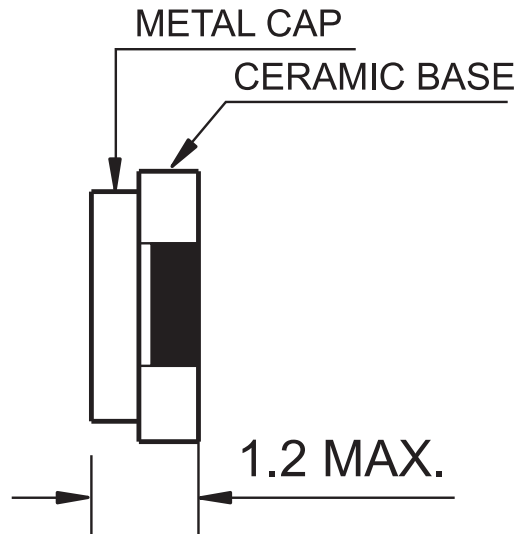
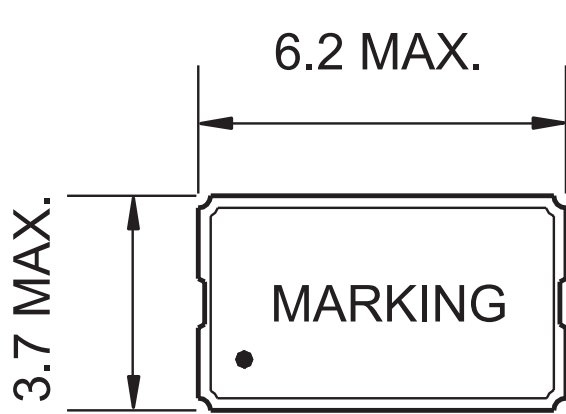
Specification Title:

**Microprocessor Crystal Unit
Low Profile**

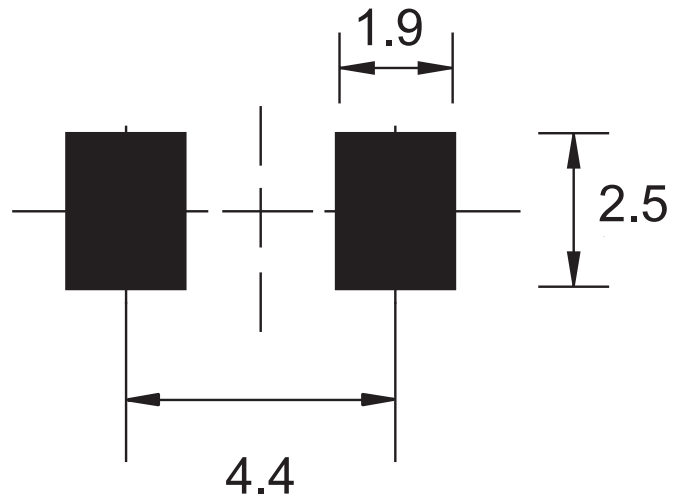
**6.0 x 3.5 millimeter Surface Mount - 2 Pad
General Product Specification**

Part Number: **C6SA Series**

Mechanical Outline:



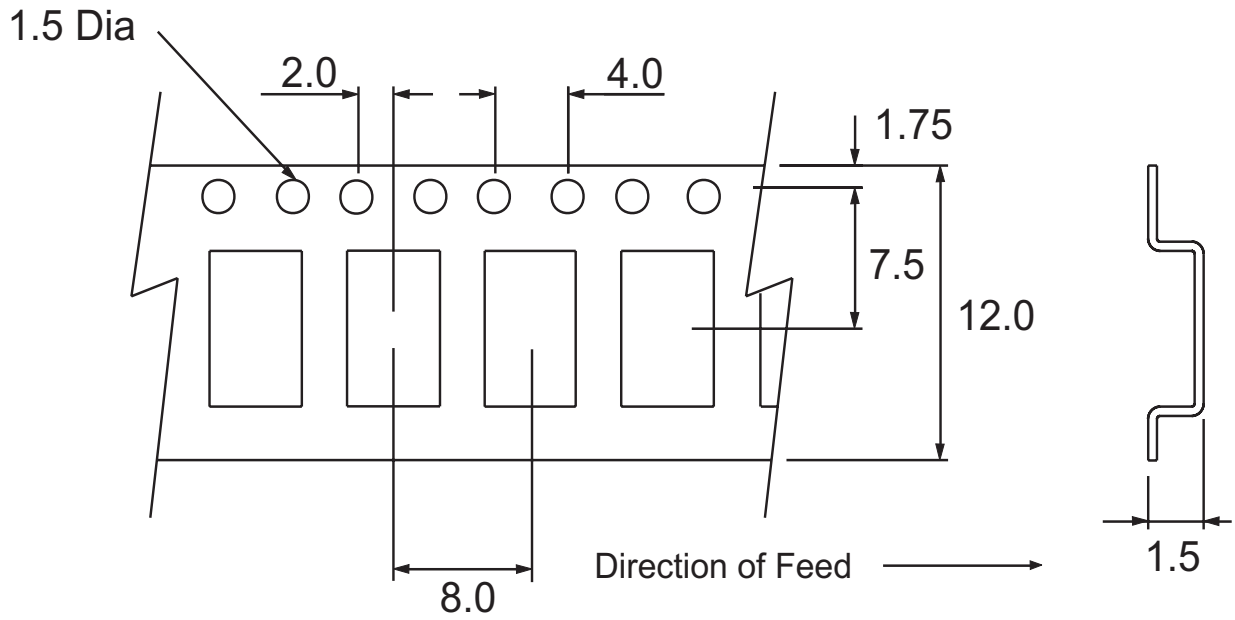
Bottom



(Recommended Land Pattern)

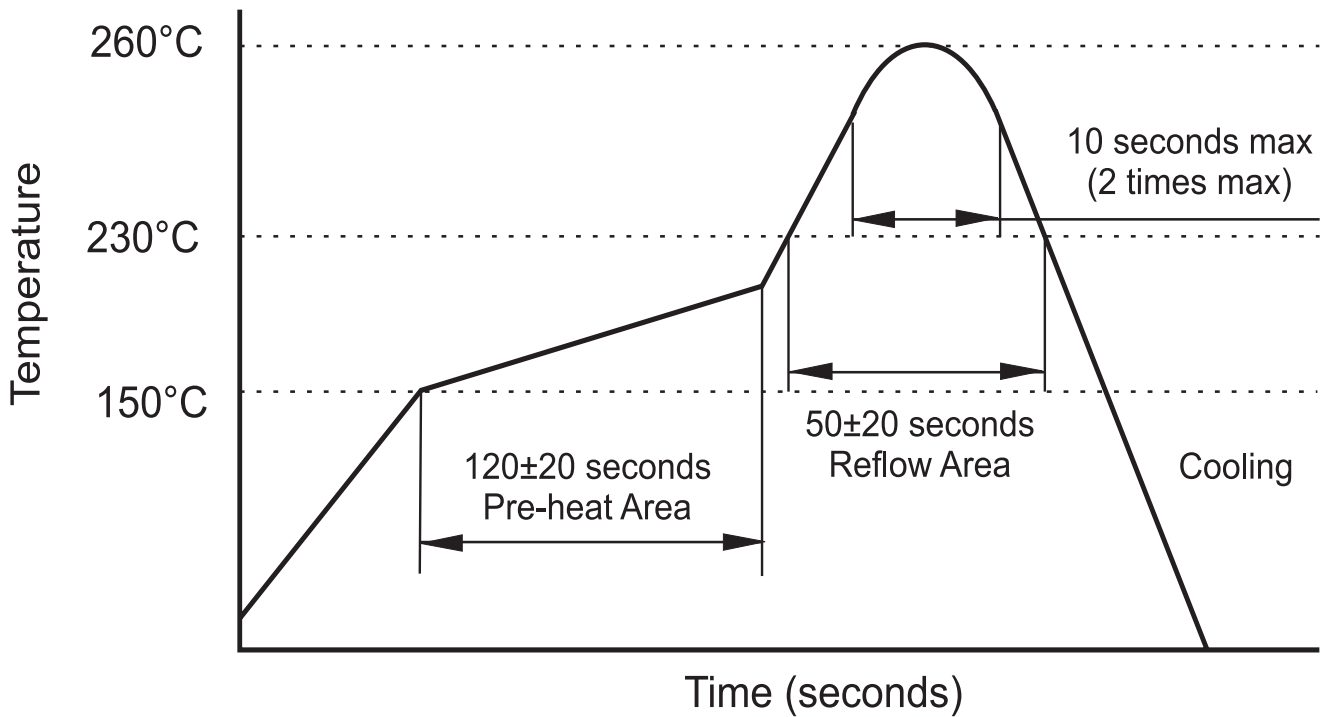
**Package is Seam Sealed Ceramic - Metal.
Dimensions are millimeters.**

Carrier Tape Dimensions:



Dimensions are millimeters.

Solder Reflow Characteristics:



How to build a Part Number:

Series	C	Parameter
Package	6SA	6.0 x 3.5 mm - 2 Pad
	-	
Frequency	8.000 to 133.000	MHz
	-	
Frequency Tolerance	30	±30 PPM
	25	±25 PPM
	20	±20 PPM
	15	± 15 PPM
	10	±10 PPM
Frequency Stability	50	±50 PPM
	30	±30 PPM
	25	±25 PPM
	20	±20 PPM
	15	±15 PPM
	10	±10 PPM*
	-	
Load Capacitance	10	10 pF
	12	12pF
	16	16 pF
	18	18 pF
	20	20 pF
	32	32 pF
	S	Series
	-	
Mode of Oscillation	See Notes	Fundamental
	3	Third Overtone
	-	
Temperature Range	See Notes	-10 to +70 °C
	X	-40 to +85 °C
	-	

Part Number Example:

C6SA-24.576.000-18-3050-R

C6SA: 6.0 x 3.5 mm Seam Seal Crystal Unit - 2 Pad

24.576 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