

RoHS Compliant
Pb - Lead Free
AEC-Q200 Qualified

Ltr	Revisions	Date	Appr

Electrical Specifications:

Frequency Range		0.500 to 156.000			MHz
Temperature Stability		±100			PPM Max
Aging per Year		±3			
Operating Temperature Range		Automotive Range			°C
Storage Temperature Range		-40 to +125			
Supply Voltage		-55 to +150			Vdd
		1.8 ± 5%	2.5 ± 5%	3.3 ± 10%	
Input Current	0.500 to 9.999 MHz	5	6	7	mA Max
	10.000 to 19.999 MHz	5	8	7	
	20.100 to 31.999 MHz	6	8	12	
	32.000 to 49.999 MHz	15	20	20	
	50.000 to 79.999 MHz	15	20	25	
	80.000 to 99.999 MHz	20	25	30	
	100.000 to 156.000 MHz	25	30	40	
Output Voltage	Logic High (Voh)	90% (80% at 1.8)			Vdd Min
	Logic Low (Vol)	10% (20% at 1.8)			Vdd Max
Output Symmetry (Duty Cycle)	Standard	40 to 60			%
	Tight	45 to 55			
Output Load		15			pF Max
Rise and Fall Time	0.500 to 31.999 MHz	5	5	10	ns Max
	32.000 to 49.999 MHz	5	5	10	
	50.000 to 79.999 MHz	4	4	8	
	80.000 to 99.999 MHz	3	3	5	
	100.000 to 156.000 MHz	3	3	4	
Phase Jitter (12 KHz to 20 MHz)		1			1 ps Max RMS
Enable-Disable Function		Tri-State			-
Output Disable Time		300	150		ns Max
Output Enable Time		10	10		ms Max
Start Up Time		10			ms Max

Temperature stability is Inclusive of all conditions:
Calibration Tolerance at +25°C, frequency stability over the operating temperature range, supply voltage, supply voltage change, output load changes, shock, vibration, and 1st year aging at +25°C.



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All dimensions are millimeters.

CAD: TCR

Review: EG

Appr: JL

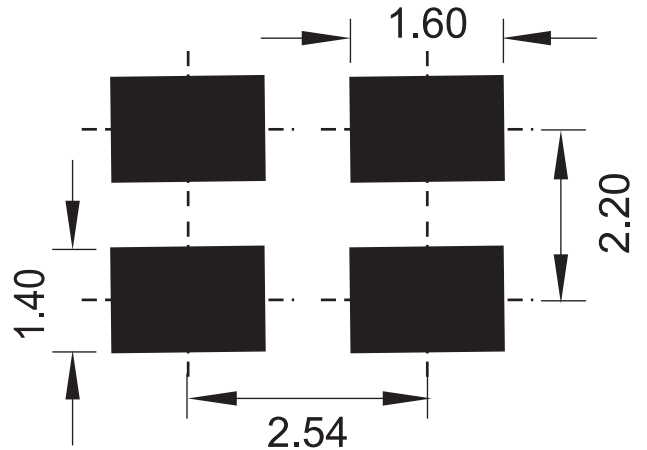
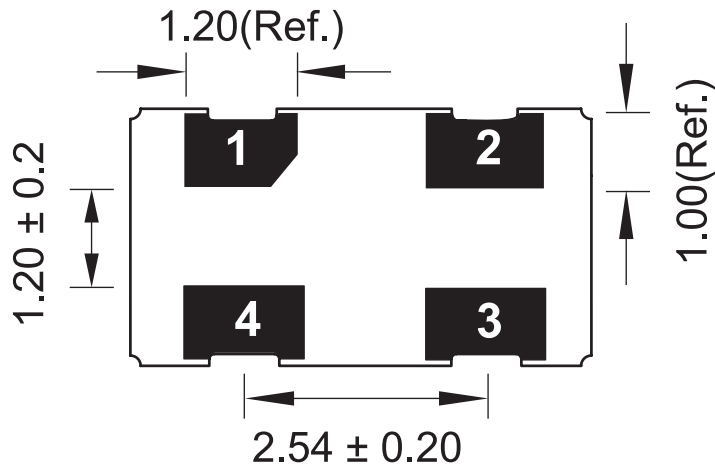
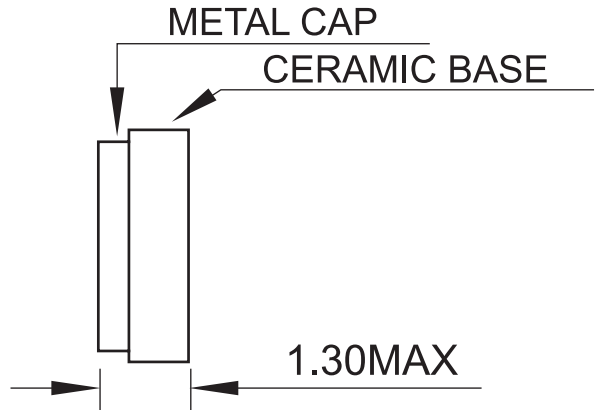
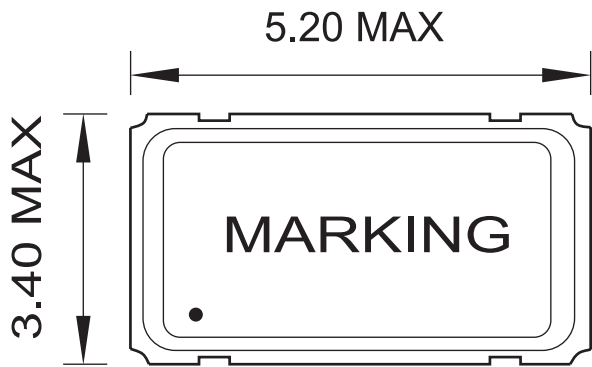
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Specification Title:

Clock Oscillator
Automotive Temperature Range
5.0 x 3.2 millimeter Surface Mount
General Product Specification

Part Number: **S5 X1 Series**

Mechanical Outline:



#1 : E/D #2 : GND
 #4 : VDC #3 : OUTPUT

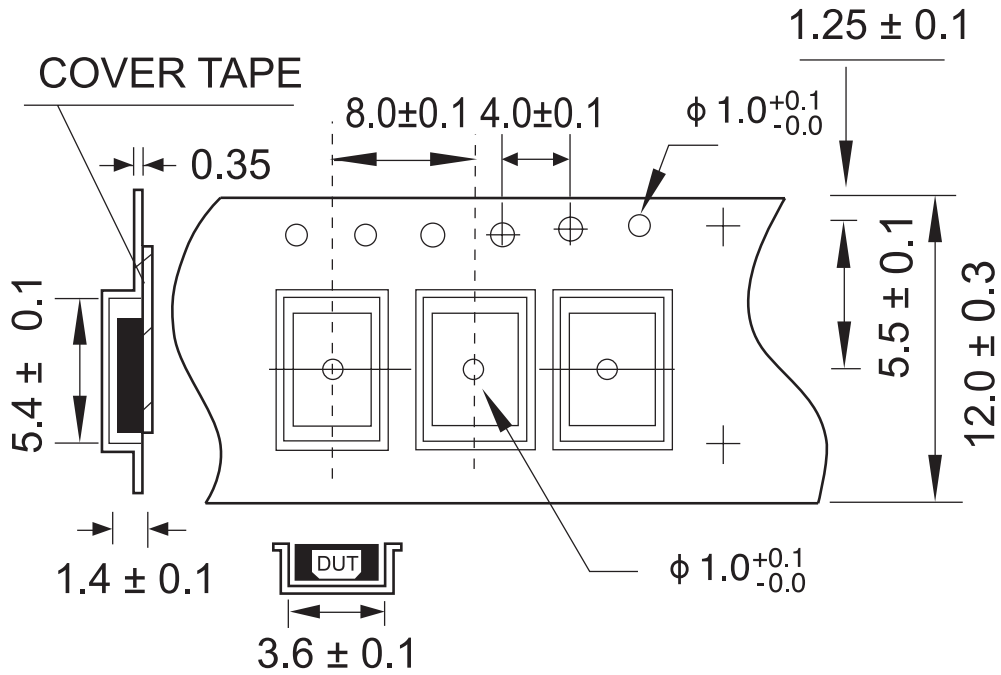
Bottom

Recommended Land Pattern

Pin1	Pin 3
INH	Output
High or Open	Operating
Low	High Impedance

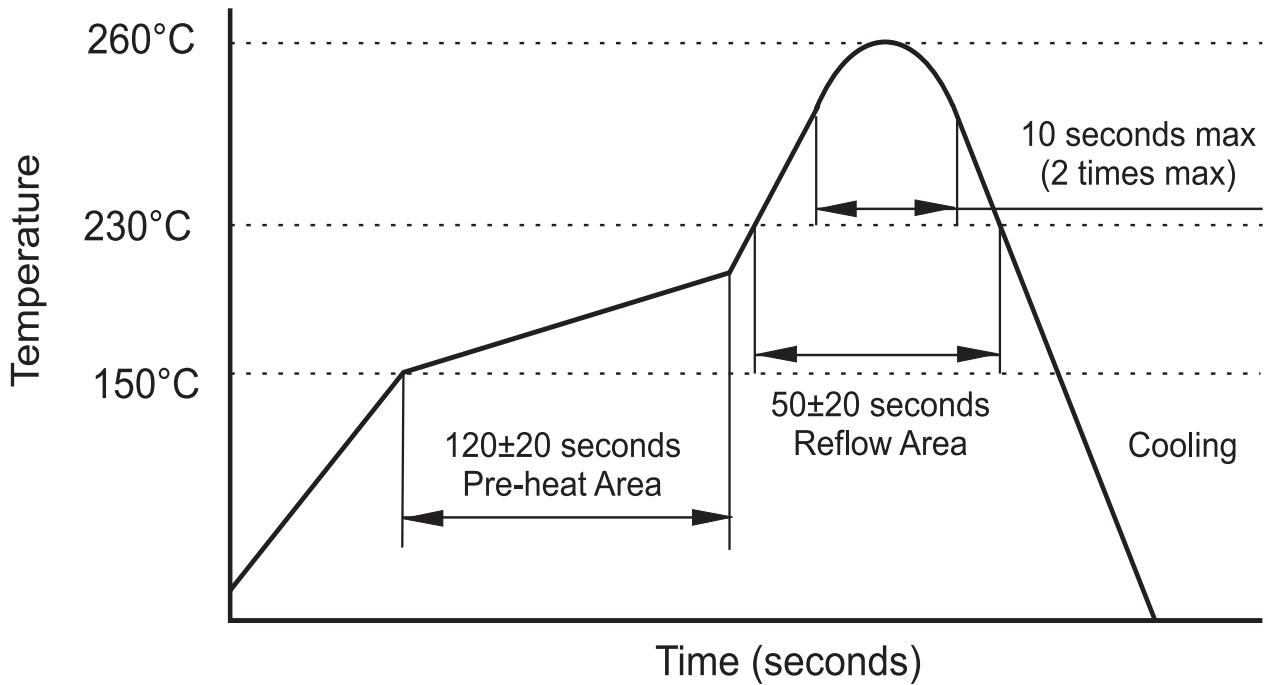
**Package is Seam Sealed Ceramic-Metal.
 Dimensions are millimeters.**

Carrier Tape Dimensions:



Dimensions are millimeters.

Solder Reflow Characteristics:



How to build a Part Number:

Series	S	Parameter
Package	5	5.0 x 3.2 mm
Supply Voltage	50	+5.0 Vdd ± 10%
	33	+3.3 Vdd ± 5%
	25	+2.5 Vdd ± 5%
	18	+1.8 Vdd ± 5%
Temperature Stability	10	±100 PPM
Duty Cycle	See Notes	40 / 60 %
	T	45 / 55 %
Frequency	0.500 to 156.000	MHz
Temperature Range	X1	-40 to +125 °C
Packaging	R	Tape and Reel

Part Number Example:

S53310-24.000-X1-R

S5: 5.0 x 3.2 mm SMD Package

33: +3.3 ± 5% Vdd Supply Voltage

10: ±100 PPM Temperature Stability

24.000 MHz Nominal Frequency

X1: -40 to + 125° C Automotive Temperature Range

R: Tape and Reel Packaging

Notes:

- 1- Standard Duty Cycle does not need to be included in Part Number description.
- 2- Product is shipped in Tape and Reel configuration. Each reel contains 1000 pieces.
- 3- Quantities less than 1000 are shipped bulk in ESD pouches.
- 4- Specification subject to change without notice.