

RoHS Compliant  
Pb - Lead Free  
AEC-Q200 Qualified

|     |           |      |      |
|-----|-----------|------|------|
| Ltr | Revisions | Date | Appr |
|     |           |      |      |
|     |           |      |      |
|     |           |      |      |

**Electrical Specifications:**

|                                 |                        |                   |          |           |            |
|---------------------------------|------------------------|-------------------|----------|-----------|------------|
| Frequency Range                 |                        | 1.000 to 54.000   |          |           | MHz        |
| Temperature Stability           |                        | ±100              |          |           | PPM Max    |
|                                 |                        | ±50               |          |           |            |
| Aging per Year                  |                        | ±3                |          |           |            |
| Operating Temperature Range     | Automotive Temperature | -40 to +125       |          |           | °C         |
| Storage Temperature Range       |                        | -55 to +125       |          |           |            |
| Supply Voltage                  |                        | 1.8 ± 5%          | 2.5 ± 5% | 3.3 ± 10% | Vdd        |
| Input Current                   | 2.000 to 9.999 MHz     | 5                 | 6        | 7         | mA Max     |
|                                 | 10.000 to 19.999 Mhz   | 6                 | 8        | 7         |            |
|                                 | 20.000 to 31.999 Mhz   | 6                 | 8        | 12        |            |
|                                 | 32.000 to 54.000 Mhz   | 15                | 20       | 20        |            |
| Output Voltage                  | Logic High (Voh)       | 90% (80% at 1.8)  |          |           | Vdd Min    |
|                                 | Logic Low (Vol)        | 10% (20% at 1.8)  |          |           | Vdd Max    |
| Output Symmetry                 | Standard               | 40 to 60          |          |           | %          |
|                                 | Tight                  | 45 to 55          |          |           |            |
| Output Level                    |                        | CMOS              |          |           | -          |
| Output Load                     |                        | 15                |          |           | pF Max     |
| Rise and Fall Time              | 2.000 to 9.999 MHz     | 7                 | 5        | 5         | ns Max     |
|                                 | 10.000 to 19.999 Mhz   | 7                 | 5        | 5         |            |
|                                 | 20.000 to 31.999 Mhz   | 6                 | 5        | 5         |            |
|                                 | 32.000 to 54.000 Mhz   | 6                 | 5        | 5         |            |
| Phase Jitter (12 KHz to 20 MHz) |                        | 1                 |          |           | ps Max RMS |
| Enable-Disable Function         |                        | Tri-State         |          |           | -          |
| Output Disable Time             |                        | 300               | 150      |           | ns Max     |
| Output Enable Time              |                        | 10                | 5        |           | ms Max     |
| Start Up Time                   |                        | 5 (10 at 1.8 Vdd) |          |           | 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

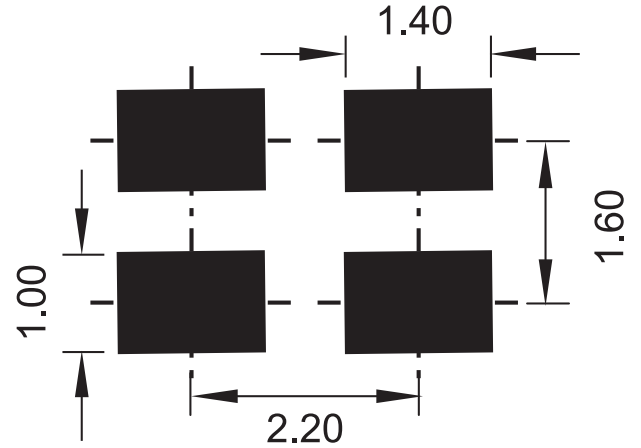
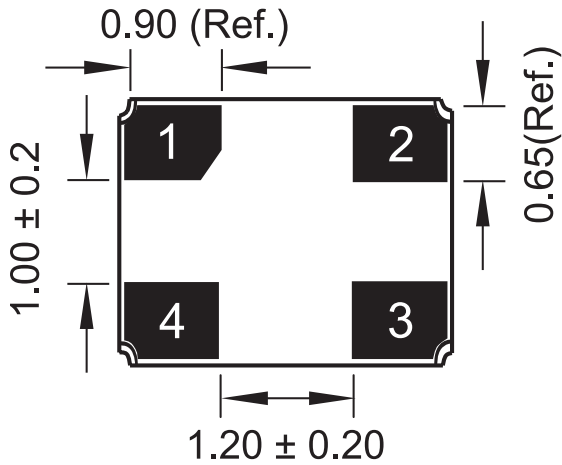
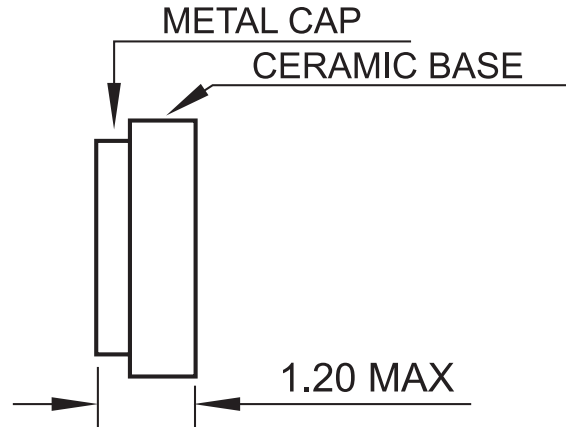
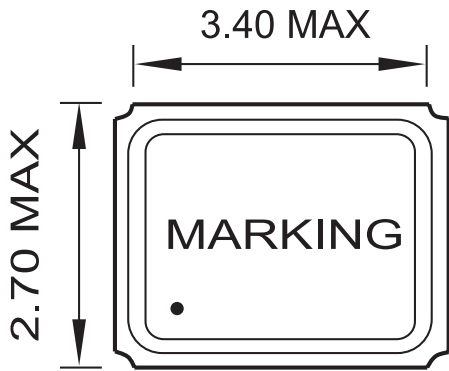
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Specification Title:

**Clock Oscillator  
Automotive Temperature Range  
Miniature - Low Profile  
3.2 x 2.5 millimeter Surface Mount  
General Product Specification**

Part Number: **S3 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.**



### How to build a Part Number:

|                       |                 |                |
|-----------------------|-----------------|----------------|
| Series                | S               | Parameter      |
| Package               | 3               | 2.5 x 3.2 mm   |
|                       |                 |                |
| Supply Voltage        | 33              | +3.3 Vdd ± 10% |
|                       | 25              | +2.5 Vdd ± 5%  |
|                       | 18              | +1.8 Vdd ± 5%  |
|                       |                 |                |
| Temperature Stability | 10              | ±100 PPM       |
|                       | 05              | ±50 PPM        |
|                       |                 |                |
| Duty Cycle            | See Notes       | 40 / 60 %      |
|                       | T               | 45 / 55 %      |
|                       |                 |                |
| Frequency             | 1.000 to 54.000 | MHz            |
|                       |                 |                |
| Temperature Range     | X1              | -40 to +125 °C |
|                       |                 |                |
| Packaging             | M               | 250pcs Reel    |
|                       | R               | 1000pcs Reel   |
|                       | R3              | 3000pcs Reel   |

### Part Number Example:

**S33310-30.000-X1-R**

**S3: 2.5 x 3.2 mm SMD Package**

**33: +3.3 ± 10% Vdd Supply Voltage**

**10: ±100 PPM Temperature Stability**

**30.000 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.
- 3- Quantities less than 250pcs are shipped in tape
- 4- Specification subject to change without notice.