

| FEATURES   | APPLICATIONS   |
|--|--|
| <ul style="list-style-type: none"> <li>- <math>\pm 25</math>ppm (Frequency Stability) Available</li> <li>- Ultra-Low Phase Noise and Jitter Performance</li> <li>- High-Q Crystal and 3<sup>rd</sup> Overtone Technology</li> <li>- RoHS Compliant</li> <li>- Tape and Reel</li> </ul> | <ul style="list-style-type: none"> <li>- High Definition TV</li> <li>- Avionics</li> <li>- Low Phase Signal Sources</li> <li>- Test and Measurement Equipment</li> </ul> |

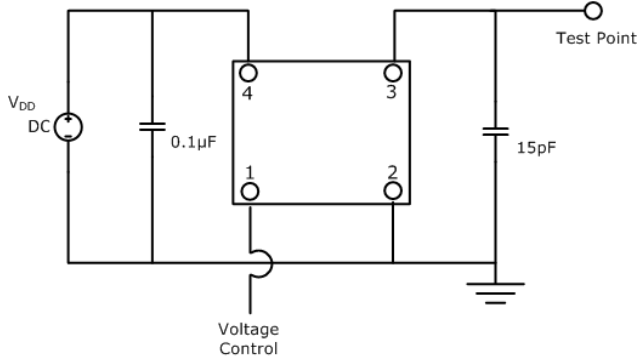


| PART NUMBERING GUIDE   |  |
|--|--|
| <p><b>SUNTSU VCXO</b> → SVC F4 C 3 A 48 B - 100.000M ← <b>FREQUENCY (MHz)</b></p> <p><b>FR4 PCB 4 PAD</b></p> <p><b>CMOS</b></p> <p><b>SUPPLY VOLTAGE</b><br/>3: 3.3V<math>\pm</math>5%</p> <p><b>FREQUENCY STABILITY</b><br/>A: <math>\pm 50</math>ppm<br/>B: <math>\pm 30</math>ppm<br/>C: <math>\pm 25</math>ppm<br/>*D: <math>\pm 20</math>ppm</p> | <p><b>PULLABILITY</b><br/>B: <math>\pm 100</math>ppm<br/>C: <math>\pm 50</math>ppm</p> <p><b>OPERATING TEMPERATURE RANGE</b><br/>07: 0°C to +70°C<br/>16: -10°C to +60°C<br/>17: -10°C to +70°C<br/>27: -20°C to +70°C<br/>38: -30°C to +85°C<br/>48: -40°C to +85°C</p> |
| <p>Cage Code: 4GUT4<br/>To customize your parameters contact a Suntsu representative.<br/>*For frequency stability D option contact a Suntsu representative.</p>   |  |

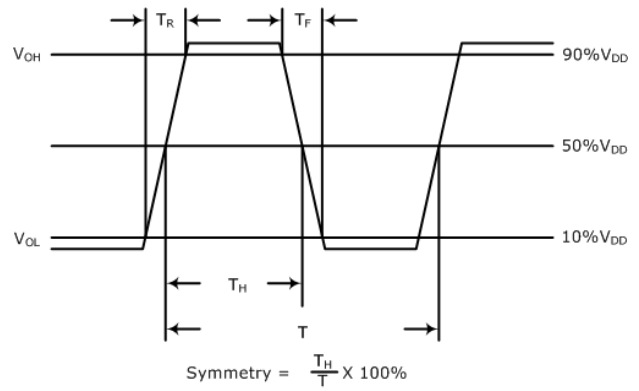
| ELECTRICAL PARAMETERS                       | UNITS                          | MIN.     | TYP.               | MAX.               | REMARKS                               |
|---|--------------------------------|----------|--------------------|--------------------|---------------------------------------|
| Frequency Range                             | MHz                            | 10       |                    | 130                |                                       |
| Frequency Stability (Overall)               | ppm                            | -25      |                    | +25                | See part numbering guide for options. |
| Operating Temperature                       | °C                             | -40      |                    | +85                | See part numbering guide for options. |
| Storage Temperature                         | °C                             | -45      |                    | +90                |                                       |
| Supply Voltage ( $V_{DD}$ )                 | V                              | 3.135    | 3.3                | 3.465              |                                       |
| Current ( $I_{DD}$ )                        | mA                             |          | 25                 | 30                 |                                       |
| Control Voltage ( $V_C$ )                   | V                              | 0.0      |                    | 3.3                |                                       |
| Pullability                                 | ppm                            | $\pm 50$ |                    | $\pm 100$          | See part numbering guide for options. |
| Input Impedance                             | k $\Omega$                     |          |                    | 51                 |                                       |
| Modulation Bandwidth                        | kHz                            | 10       |                    |                    | @-3dB                                 |
| Linearity                                   | %                              |          |                    | 10                 |                                       |
| Output Load (CMOS)                          | pF                             |          |                    | 15                 |                                       |
| Output Logic Levels                         | Output Logic High ( $V_{OH}$ ) | V        | $0.9 \cdot V_{DD}$ |                    |                                       |
|   | Output Logic Low ( $V_{OL}$ )  |          |                    | $0.1 \cdot V_{DD}$ |                                       |
| Rise Time ( $T_R$ ) and Fall Time ( $T_F$ ) | ns                             |          |                    | 3                  |                                       |
| Symmetry (Duty Cycle)                       | %                              | 45       | 50                 | 55                 |                                       |
| Start-Up Time                               | ms                             |          |                    | 10                 |                                       |
| Aging                                       | ppm                            | -3       |                    | +3                 | First year @ +25°C.                   |
| Phase Jitter (12kHz ~ 20MHz)                | ps                             |          | 0.1                |                    |                                       |

| OUTLINE DRAWING                              |  |     |          |   |                 |   |     |   |        |   |          |
|--|--|-----|----------|---|-----------------|---|-----|---|--------|---|----------|
|  | <p>RECOMMENDED LAND PATTERN</p>  |     |          |   |                 |   |     |   |        |   |          |
| <p>NOTE: Dimensions in millimeters (mm).</p> | <table border="1"> <thead> <tr> <th>PIN</th> <th>FUNCTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>VOLTAGE CONTROL</td> </tr> <tr> <td>2</td> <td>GND</td> </tr> <tr> <td>3</td> <td>OUTPUT</td> </tr> <tr> <td>4</td> <td><math>V_{DD}</math></td> </tr> </tbody> </table> | PIN | FUNCTION | 1 | VOLTAGE CONTROL | 2 | GND | 3 | OUTPUT | 4 | $V_{DD}$ |
| PIN  | FUNCTION   |     |          |   |                 |   |     |   |        |   |          |
| 1  | VOLTAGE CONTROL  |     |          |   |                 |   |     |   |        |   |          |
| 2  | GND  |     |          |   |                 |   |     |   |        |   |          |
| 3  | OUTPUT   |     |          |   |                 |   |     |   |        |   |          |
| 4  | $V_{DD}$   |     |          |   |                 |   |     |   |        |   |          |

**TEST CIRCUIT (CMOS)**

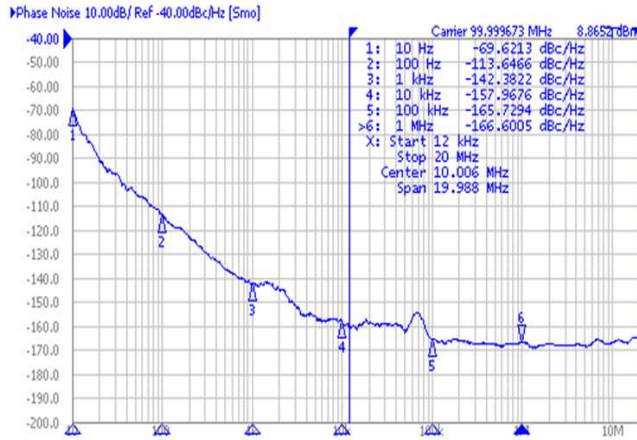


**WAVEFORM (CMOS)**

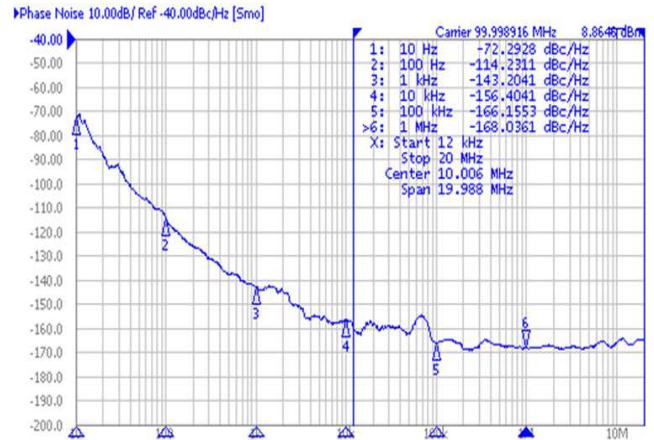


**TYPICAL PHASE NOISE PERFORMANCE (MEASURED BY AGILENT E5052A)**

Frequency 100.000MHz

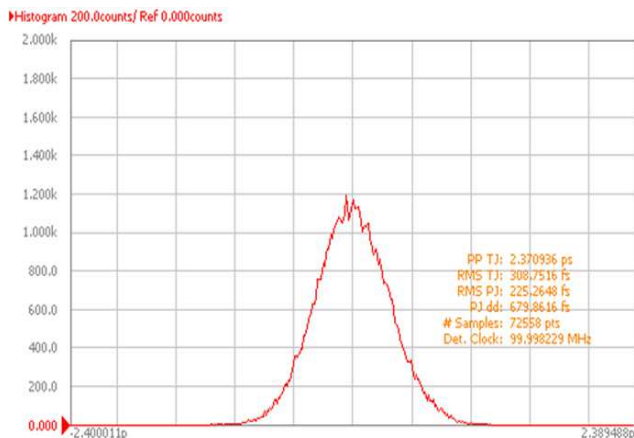


Frequency 100.000MHz

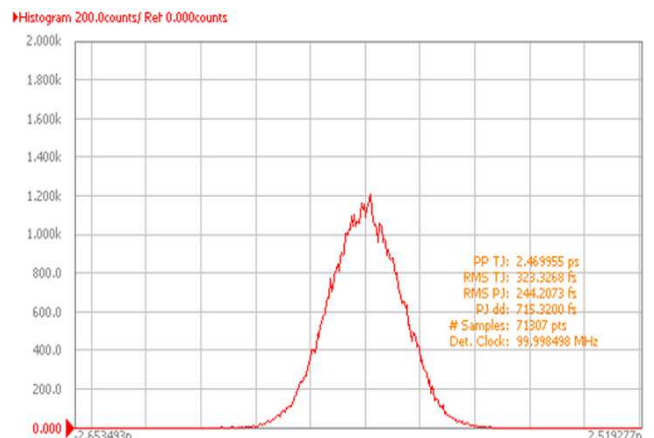


**TYPICAL JITTER PERFORMANCE (MEASURED BY AGILENT E5052A)**

Frequency 100.000MHz



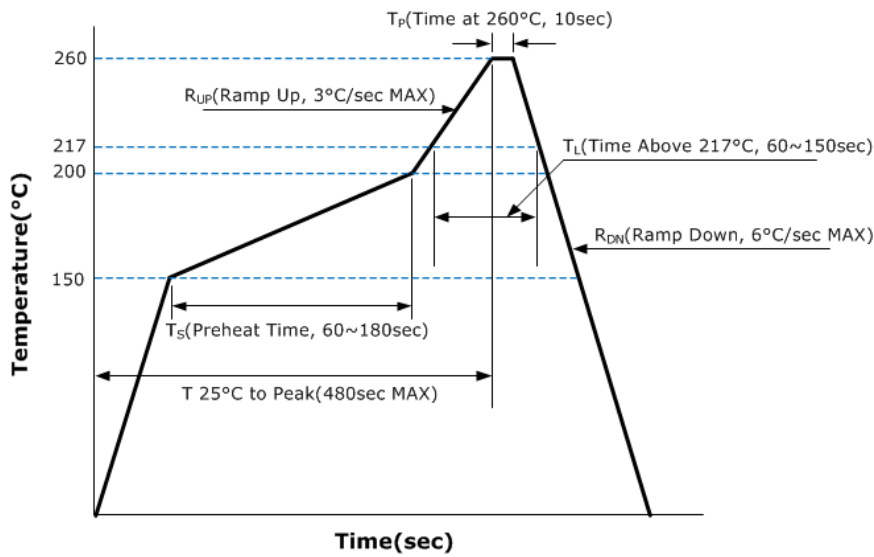
Frequency 100.000MHz



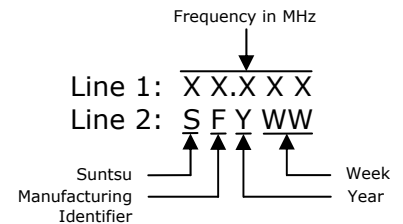
## ENVIRONMENTAL & MECHANICAL SPECIFICATIONS

|                              |                                       |
|------------------------------|---------------------------------------|
| Temperature Cycling          | MIL-STD-883, Method 1010, Condition B |
| Fine Leak Test               | MIL-STD-883, Method 1014, Condition A |
| Gross Leak Test              | MIL-STD-883, Method 1014, Condition C |
| Mechanical Shock             | MIL-STD-883, Method 2002, Condition B |
| Vibration                    | MIL-STD-883, Method 2007, Condition A |
| Moisture Resistance          | MIL-STD-883, Method 1004              |
| Moisture Sensitivity         | J-STD-020, MSL 1                      |
| Resistance to Soldering Heat | MIL-STD-202, Method 210, Condition K  |
| Resistance to Solvents       | MIL-STD-202, Method 215               |
| Solderability                | MIL-STD-883, Method 2003              |

## REFLOW PROFILE

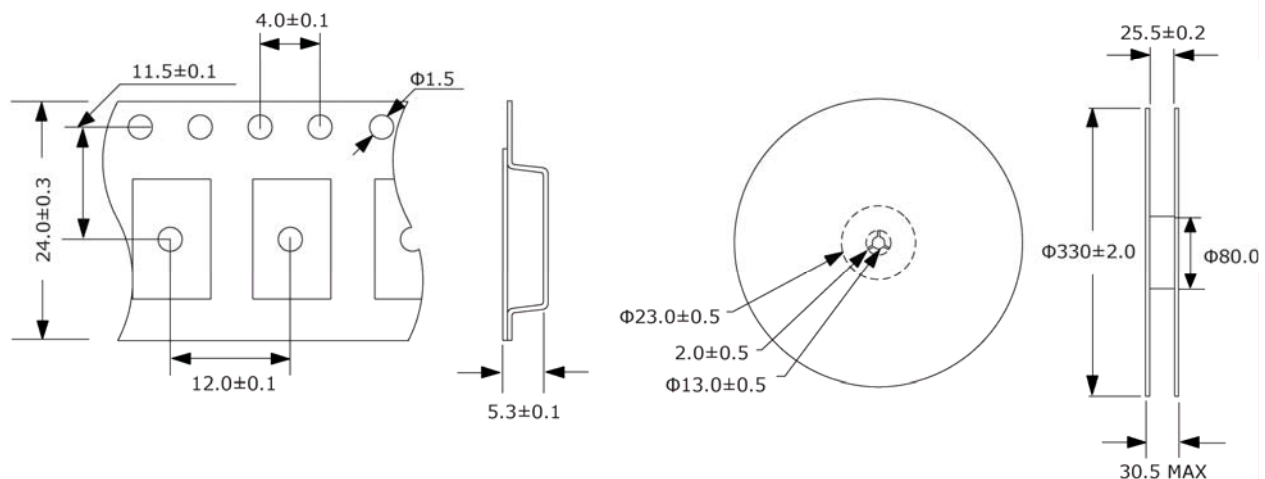


## MARKING



## TAPE AND REEL DIMENSIONS

500pcs/reel



NOTE: Dimensions in millimeters (mm); drawing is not to scale.