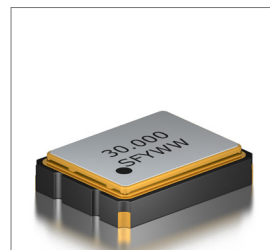


### Features

- $\pm 20$ ppm (Frequency Stability) Available
- Ceramic Package
- CMOS
- Programmed VCXO
- Tape and Reel

### Applications

- Micro Processors
- FPGA
- Storage Area/Networking
- Digital Video
- Portable Computers



### Part Numbering Guide

**SQV 32 C 3 A 48 A 2 - 30.000M**

SUNTSU QUICK  
TURN VCXO

3.2mm x 2.5mm

CMOS

SUPPLY VOLTAGE

2 : 2.5V $\pm 5\%$

3 : 3.3V $\pm 5\%$

FREQUENCY STABILITY

A :  $\pm 50$ ppm

B :  $\pm 30$ ppm

C :  $\pm 25$ ppm

D :  $\pm 20$ ppm

\*E :  $\pm 15$ ppm

OPERATING  
TEMPERATURE RANGE

07 : 0°C - +70°C

16 : -10°C - +60°C

17 : -10°C - +70°C

27 : -20°C - +70°C

38 : -30°C - +85°C

48 : -40°C - +85°C

PULLABILITY

A :  $\pm 150$ ppm

B :  $\pm 100$ ppm

C :  $\pm 80$ ppm

D :  $\pm 50$ ppm

FREQUENCY  
MHz

TRI-STATE  
(ENABLE/DISABLE)

BLANK : No Connect

2 : Pin 2



Cage Code: 4GUT4

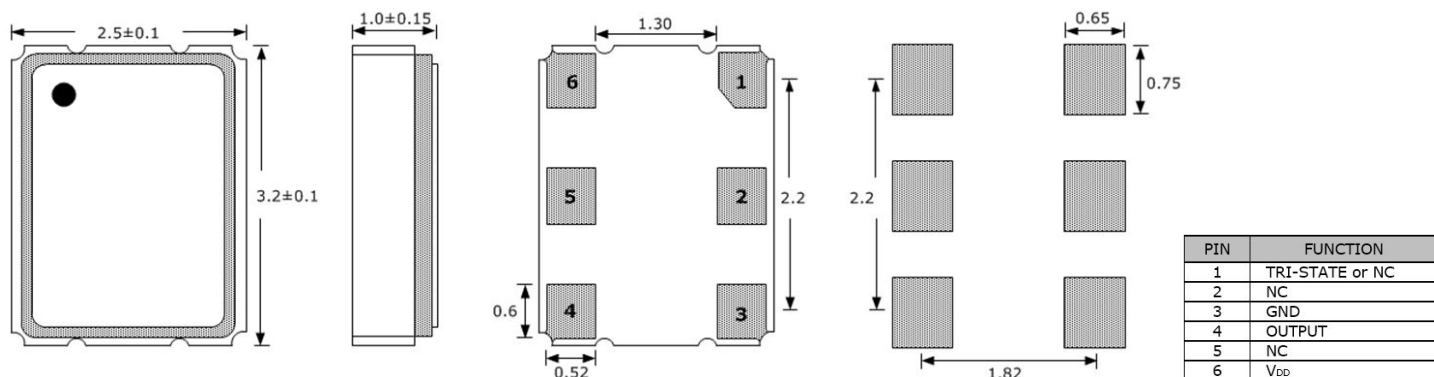
To customize your parameters contact a Suntsu representative.

\* For frequency stability option E contact a Suntsu representative.

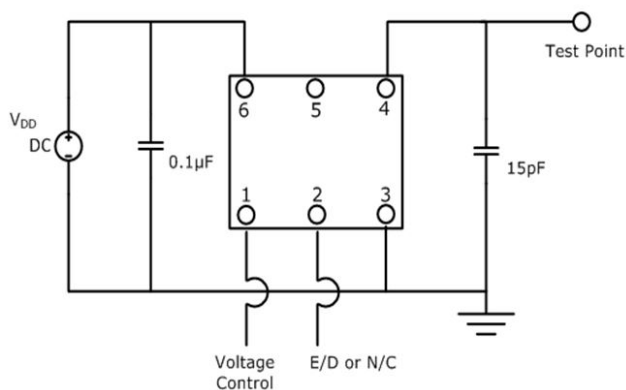
| Electrical Parameters                                                                                                                                                              | Units | Minimum             | Typical   | Maximum             | Remarks                               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------------|-----------|---------------------|---------------------------------------|
| Frequency Range                                                                                                                                                                    | MHz   | 8                   |           | 1500                |                                       |
| Frequency Stability (Includes Initial Tolerance at 25°C, Frequency Stability over Operating Temperature, Output Load Change, Supply Voltage Change, and First Year Aging at 25°C.) | ppm   | -20                 |           | +20                 | See part numbering guide for options. |
| Operating Temperature                                                                                                                                                              | °C    | -40                 |           | +85                 | See part numbering guide for options. |
| Storage Temperature                                                                                                                                                                | °C    | -55                 |           | +125                |                                       |
| Supply Voltage (V <sub>DD</sub> ) 2.5V Option                                                                                                                                      | V     | 2.375               | 2.5       | 2.625               |                                       |
| Supply Voltage (V <sub>DD</sub> ) 3.3V Option                                                                                                                                      | V     | 3.135               | 3.3       | 3.465               |                                       |
| Current (I <sub>DD</sub> ) 2.5V Option                                                                                                                                             | mA    |                     |           | 35                  |                                       |
| Current (I <sub>DD</sub> ) 3.3V Option                                                                                                                                             | mA    |                     |           | 45                  |                                       |
| Current Voltage (V <sub>C</sub> ) 2.5V Option                                                                                                                                      | V     | 0                   |           | 2.5                 |                                       |
| Current Voltage (V <sub>C</sub> ) 3.3V Option                                                                                                                                      | V     | 0                   |           | 3.3                 |                                       |
| Pullability                                                                                                                                                                        | ppm   | $\pm 50$            | $\pm 100$ | $\pm 150$           | See part numbering guide for options. |
| Linearity                                                                                                                                                                          | %     |                     |           | 10                  |                                       |
| Output Load (CMOS)                                                                                                                                                                 | pF    |                     |           | 15                  |                                       |
| Output Logic HIGH Level (V <sub>OH</sub> )                                                                                                                                         | V     | 0.9*V <sub>DD</sub> |           |                     |                                       |
| Output Logic LOW Level (V <sub>OL</sub> )                                                                                                                                          | V     |                     |           | 0.1*V <sub>DD</sub> |                                       |
| Rise (T <sub>R</sub> ) And Fall (T <sub>F</sub> ) Time                                                                                                                             | ns    |                     |           | 3                   |                                       |
| Symmetry (Duty Cycle)                                                                                                                                                              | %     | 45                  | 50        | 55                  |                                       |
| Tri-State Input Voltage - Enable                                                                                                                                                   | V     | 0.7*V <sub>DD</sub> |           |                     |                                       |
| Tri-State Input Voltage - Disable                                                                                                                                                  | V     |                     |           | 0.3*V <sub>DD</sub> |                                       |
| Start-Up Time                                                                                                                                                                      | ms    |                     |           | 10                  |                                       |
| Phase Jitter (12KHz ~ 20MHz)                                                                                                                                                       | ps    |                     | 0.7       | 1.5                 |                                       |

### Outline Drawing & Land Pattern

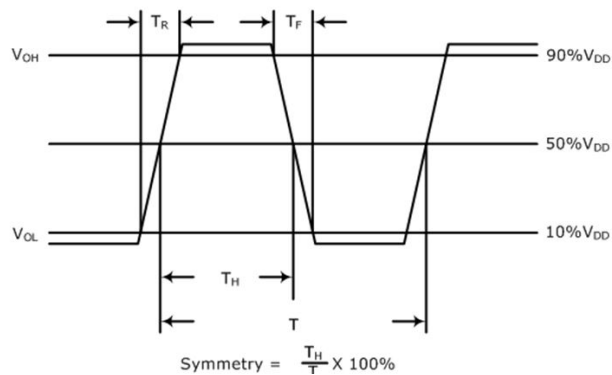
All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.



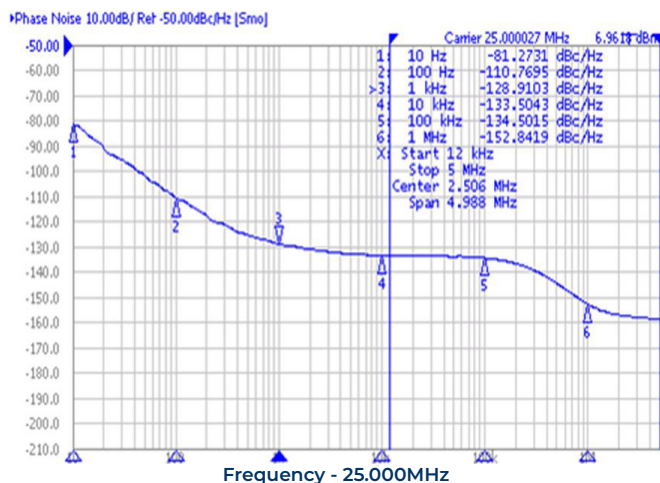
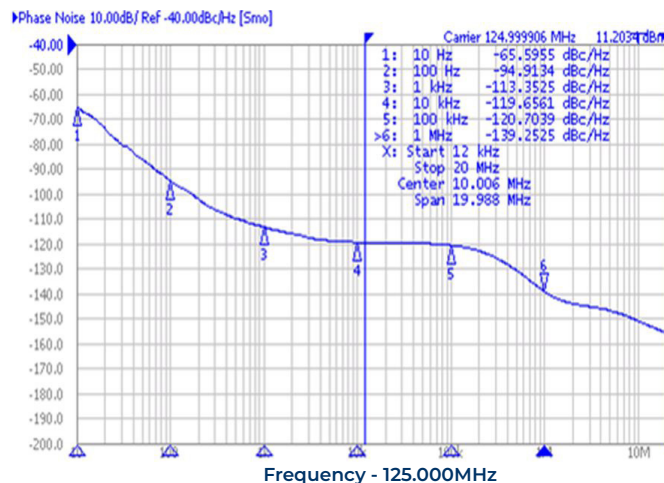
### Test Circuit (CMOS)



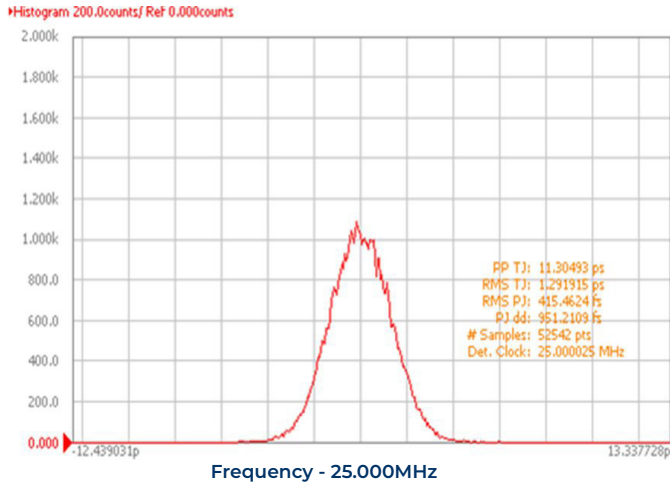
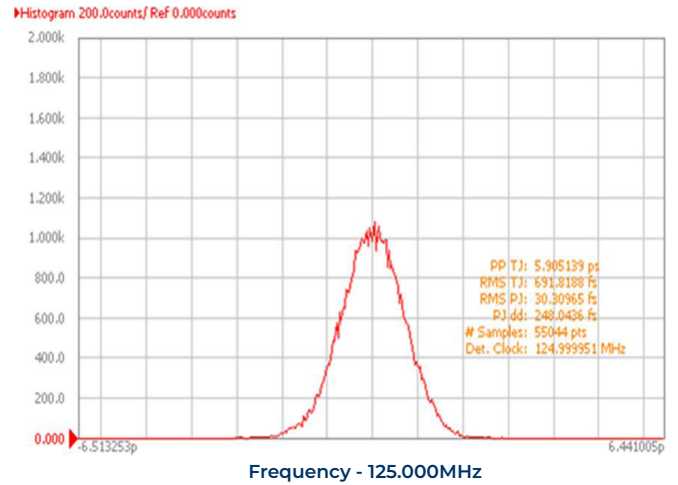
### Waveform (CMOS)



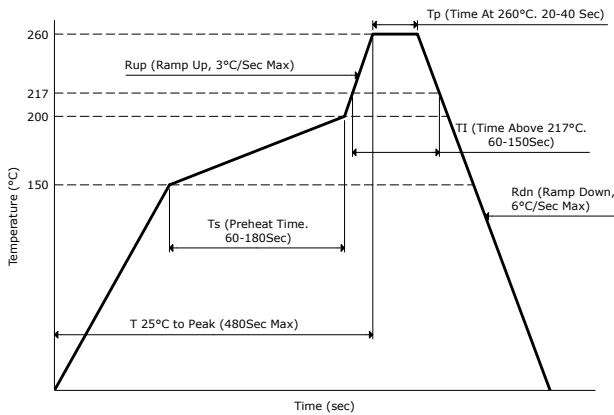
### Typical Phase Noise Performance (Measured By Agilent E5052A)



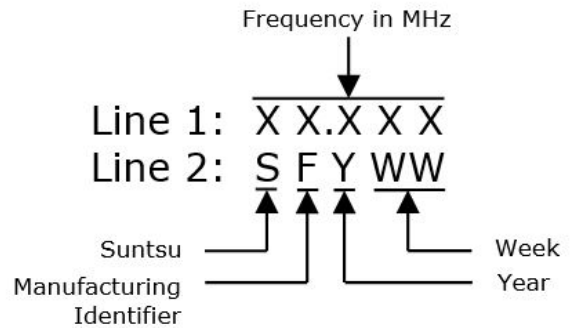
### Typical Jitter Performance (Measured By Agilent E5052A)



### Reflow Profile



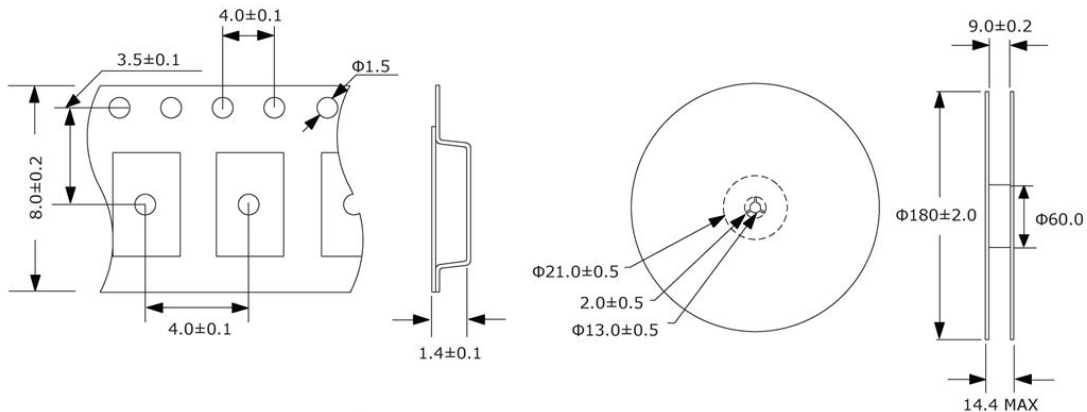
### Part Marking



### Tape And Reel Dimensions

All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.

3,000pcs/Reel



| Environmental Specifications |                                       | Mechanical Specifications    |                                       |
|------------------------------|---------------------------------------|------------------------------|---------------------------------------|
| Temperature Cycling          | MIL-STD-883, Method 1010, Condition B | Mechanical Shock             | MIL-STD-202, Method 213, Condition B  |
| Fine Leak Test               | MIL-STD-883, Method 1014, Condition A | Vibration                    | MIL-STD-883, Method 2007, Condition A |
| Gross Leak Test              | MIL-STD-883, Method 1014, Condition C | Moisture Resistance          | MIL-STD-883, Method 1004              |
| Solderability                | MIL-STD-883, Method 2003              | Resistance to Solvents       | MIL-STD-202, Method 215               |
| Moisture Sensitivity         | J-STD-020, MSL 1                      | Resistance to Soldering Heat | MIL-STD-202, Method 210, Condition K  |