SUNTSU

Metal Stratum 3 DIP CMOS (VC) TCXO

SST20C Series

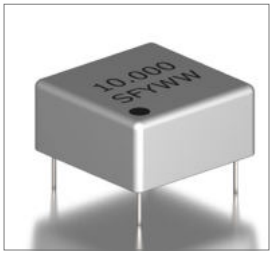
20.0mm x 20.0mm

Features

- Stratum 3 (Overall ±4.6ppm)
- CMOS
- (VC)TCXO

Applications

- Base Stations
- Stratum 3



Part Numbering Guide

SST 20 C 33 R 48 V E - 10.000M

- **SST** — SUNTSU STRATUM 3 TCXO
- **20** — 20.0mm x 20.0mm
- **C** — CMOS
- **33** — SUPPLY VOLTAGE: 33 : 3.3V±5%; 50 : 5.0V±5%
- **R** — FREQUENCY STABILITY: Q : ±1.5ppm; R : ±1.0ppm
- **48** — OPERATING TEMPERATURE RANGE: 27 : -20°C - +70°C; 48 : -40°C - +85°C
- **V** — TCXO/VCTCXO: BLANK : TCXO; V : VCTCXO
- **E** — PULLABILITY: BLANK : TCXO; E : ±12.0ppm; F : ±8.0ppm; G : ±5.0ppm
- **10.000M** — FREQUENCY: MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	2		150	
Frequency Tolerance at +25°C	ppm	-0.3		+0.3	
Freq. Stability vs. Op Temp.	ppm	-1.0		+1.0	See part numbering guide for options.
Freq. Stability vs. Supply Voltage	ppm	-0.1		0.1	V_{DD} ±5% Change
Freq. Stability vs. Load	ppm	-0.1		0.1	±5% Change
Freq. Stability vs. Aging/Year	ppm	-1.0		1.0	1 year, ±2.6ppm for 10years
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-55		+125	
Supply Voltage (V_{DD}) - 3.3V Option	V	3.135	3.3	3.465	
Supply Voltage (V_{DD}) - 5.0V Option	V	4.750	5.0	5.250	
Current (I_{DD})	mA			20	
Voltage (VC, VCTCXO) - 3.3V Option	V	0.3		3.0	
Voltage (VC, VCTCXO) - 5.0V Option	V	0.5		4.5	
Pullability (VCTCXO)	PPM	±5.0		±12.0	See part numbering guide for options.
Linearity (VCTCXO)	%			20	
Output Load (CMOS)	pF			15	
Output Logic Level High (V_{OH})	V	0.9*V_{DD}			
Output Logic Level Low (V_{OL})	V			0.1*V_{DD}	
Rise (T_R) And Fall (T_F) Time	ns			10	
Symmetry (Duty Cycle)	%	40	50	60	
Start-Up Time	ms			3	
Frequency Adjustment	ppm	3			
Phase Noise (Typical) 10Hz Offset	dBc/Hz		-70		
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-115		
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-132		
Phase Noise (Typical) 10KHz Offset	dBc/Hz		-144		
Phase Noise (Typical) 100KHz Offset	dBc/Hz		-150		

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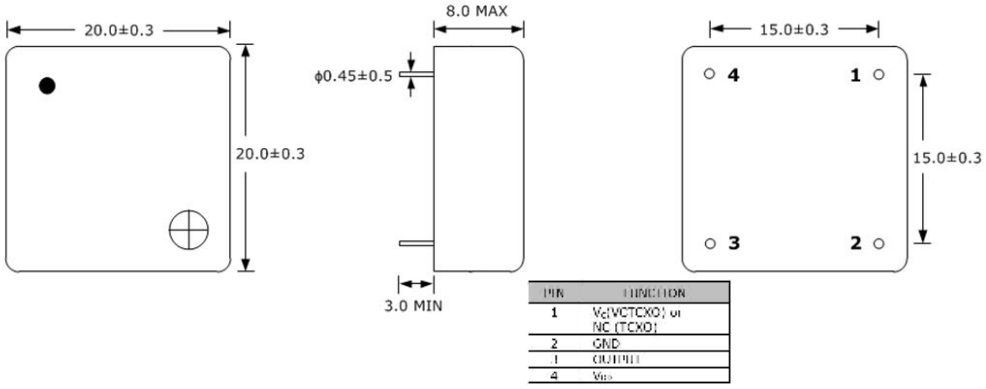
Metal Stratum 3 DIP CMOS (VC) TCXO

SST20C Series

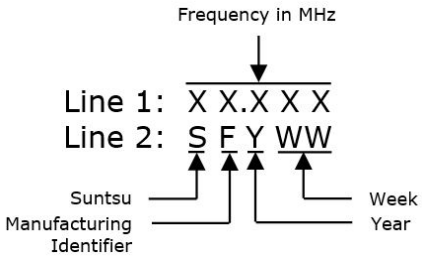
20.0mm x 20.0mm

Outline Drawing & Part Marking

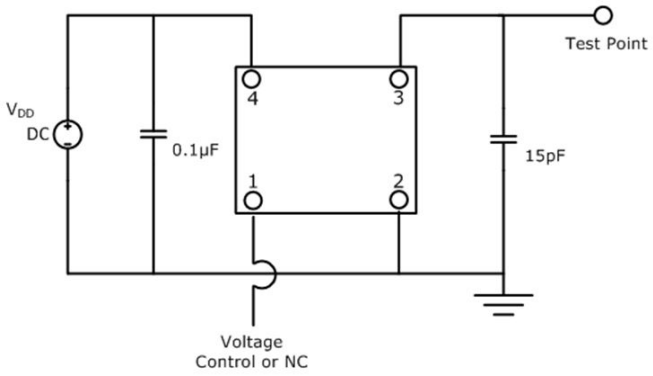
All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.



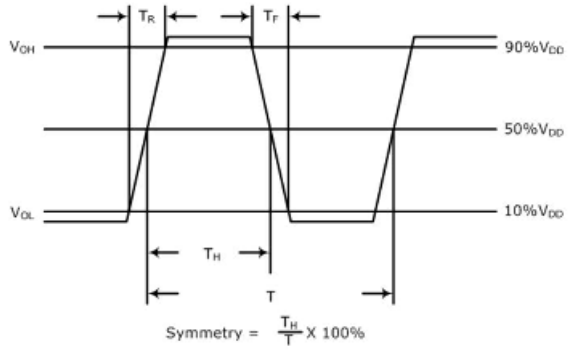
PIN	FUNCTION
1	V_C (VCTCXO) or NC (TCXO)
2	GND
3	OUTPUT
4	V_{DD}



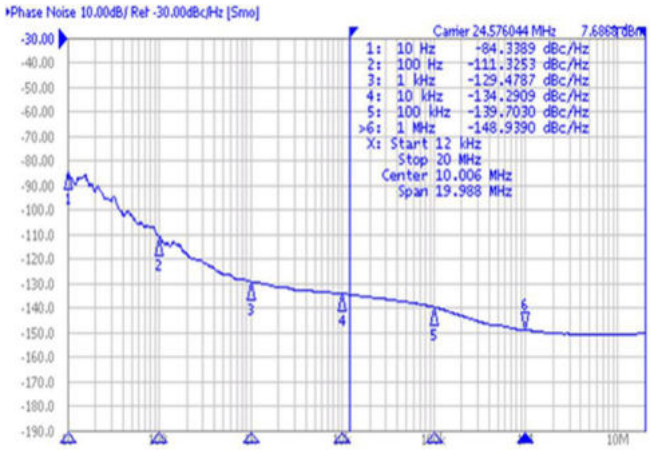
Test Circuit (CMOS)



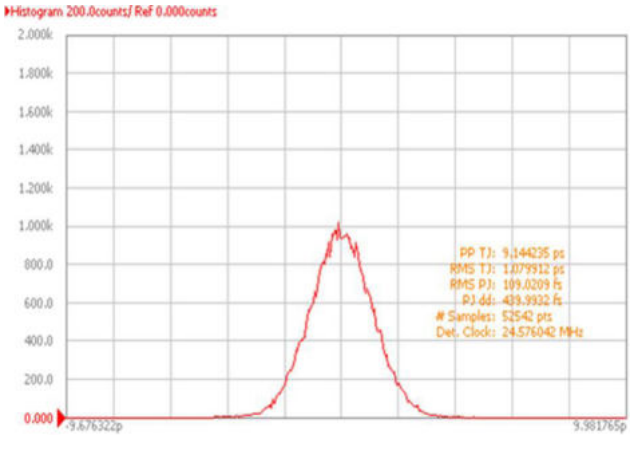
Waveform (CMOS)



Typical Phase Noise And Jitter Performance (Measured By Agilent E5052A)



Frequency - 24.576MHz



Frequency - 24.576MHz

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Specifications are subject to change without notice.

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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

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SUNTSU

Ceramic SMD 4 Pad Clipped Sinewave (VC)TCXO

STC11K Series

1.6mm x 1.2mm

Features

- ±0.5ppm (Frequency Stability) Available
- Clipped Sinewave
- (VC)TCXO
- Tape and Reel

Applications

- GPS
- Mobile Communication Equipment
- Cellular And Cordless Phones
- IP Networking

Part Numbering Guide

STC 11 K 30 R 48 V E - 26.000M

- **SUNTSU TCXO**
- **1.6mm x 1.2mm**
- **CLIPPED SINEWAVE**
- **SUPPLY VOLTAGE**
  - 18 : 1.8V±5%
  - 25 : 2.5V±5%
  - 27 : 2.7V±5%
  - 28 : 2.8V±5%
  - 30 : 3.0V±5%
  - 33 : 3.3V±5%
- **FREQUENCY STABILITY**
  - P : ±2.0ppm
  - Q : ±1.5ppm
  - R : ±1.0ppm
  - F : ±0.5ppm
- **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
- **TCXO/VCTCXO**
  - BLANK : TCXO
  - V : VCTCXO
- **PULLABILITY**
  - BLANK : TCXO
  - H : ±16.00ppm
  - I : ±7.0ppm
- **FREQUENCY**
  - MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	26		52	
Frequency Tolerance at +25°C	ppm	-2.0		+2.0	After 2 times reflow
Freq. Stability vs. Op Temp.	ppm	-0.5		+0.5	See part numbering guide for options
Freq. Stability vs. Supply Voltage	ppm	-0.2		+0.2	±5% change
Freq. Stability vs. Load	ppm	-0.2		+0.2	±10% change
Freq. Stability vs. Aging	ppm	-1.0		+1.0	1 Year
Operating Temperature	°C	-30		+85	See part numbering guide for options.
Storage Temperature	°C	-40		+85	
Supply Voltage (V_{DD})	V	1.8		3.3	See part numbering guide for options.
Current (I_{DD})	mA			2	
Control Voltage (V_C, VCTCXO)	V	0.1*V_{DD}		0.9* V_{DD}	Center Voltage: V_{DD}*50%.
Pullability (VCTCXO)	ppm	±7.0		±16.0	See part numbering guide for options.
Linearity (VCTCXO)	%	-10		+10	
Output Load (Clipped Sinewave)	kΩ//pF			10//10	
Output Logic Levels	V_{P-P}	0.8			
Symmetry (Duty Cycle)	%	40	50	60	
Start-Up Time	ms			5.0	
VC Input Impedance (VCTCXO)	kΩ	500			
Phase Noise (Typical) 1Hz Offset	dBc/Hz		-57		
Phase Noise (Typical) 10Hz Offset	dBc/Hz		-95		
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-120		
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-140		
Phase Noise (Typical) 10KHz Offset	dBc/Hz		-155		

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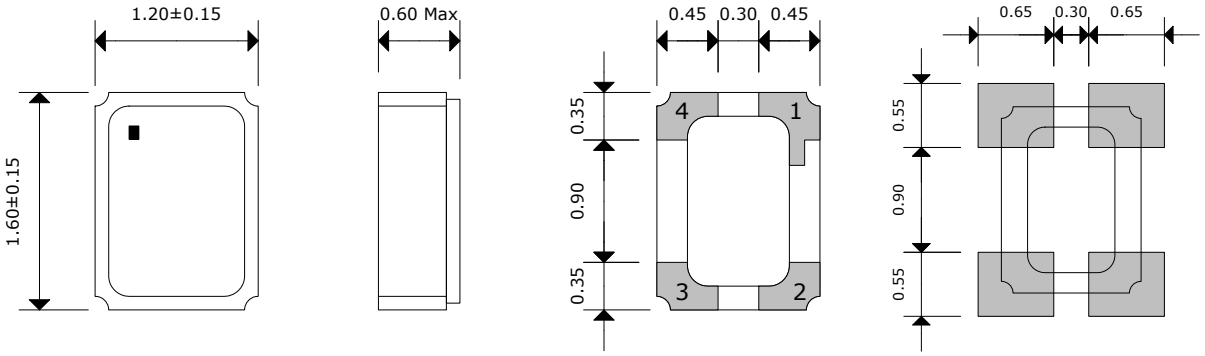
Ceramic SMD 4 Pad Clipped Sinewave (VC)TCXO

STC11K Series

1.6mm x 1.2mm

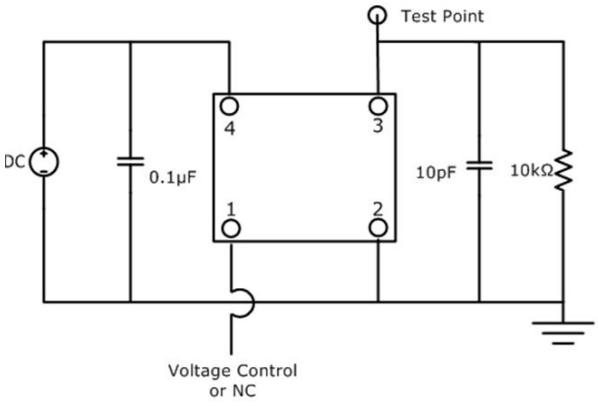
Outline Drawing and Land Pattern

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

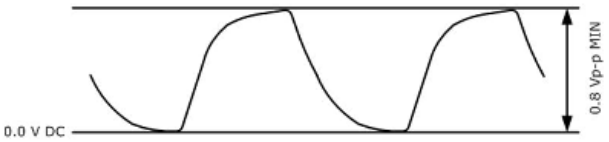


PIN	FUNCTION
1	AFC or GROUND
2	GROUND
3	OUTPUT
4	V_{DD}

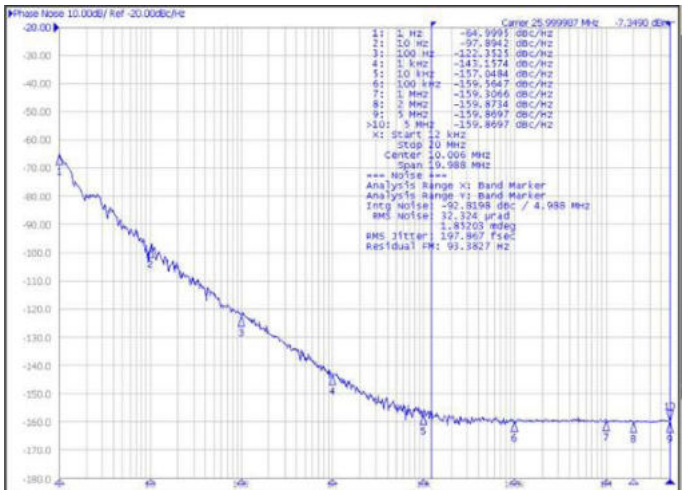
Test Circuit (Clipped Sinewave)



Waveform (Clipped Sinewave)



Typical Phase Noise



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Tape And Reel Dimensions

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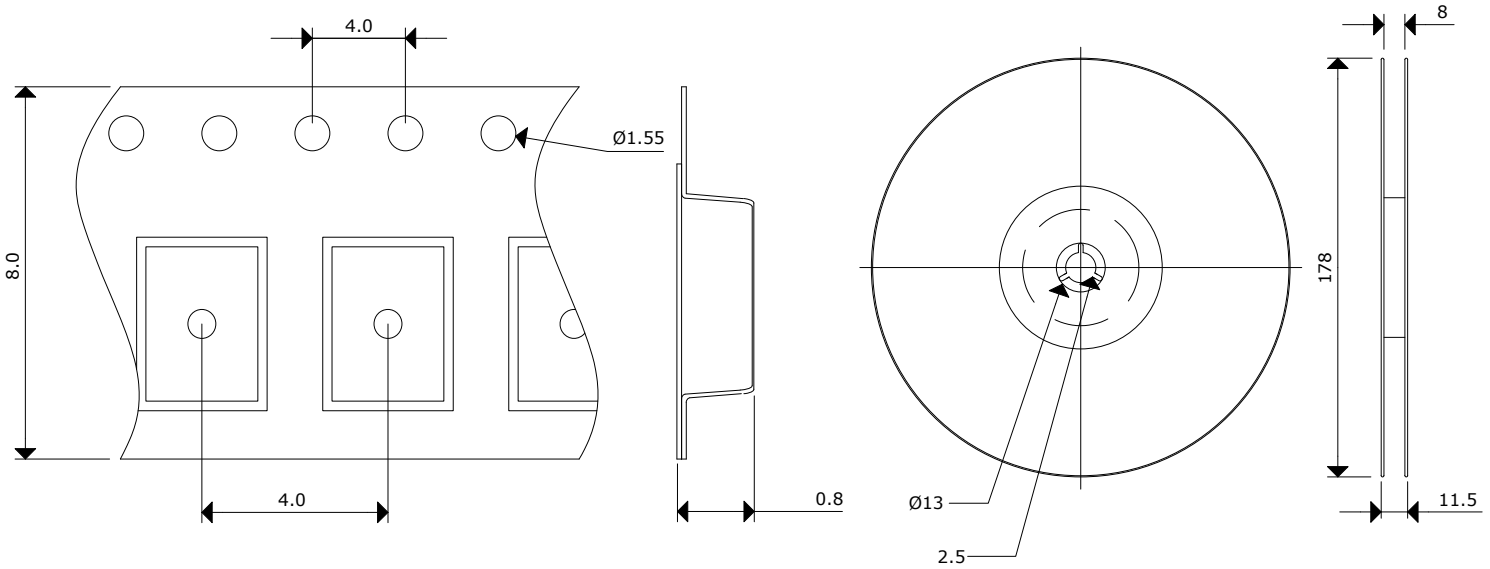
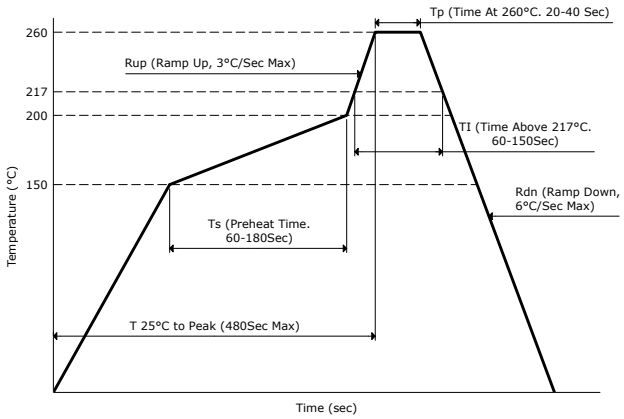
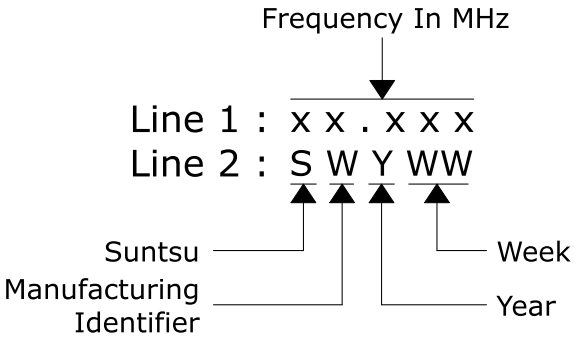
3,000pcs/Reel



Reflow Profile & Part Marking





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

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SUNTSU

Ceramic Stratum 3 SMT 10 Pad CMOS (VC)TCXO

SST75C Series

7.0mm x 5.0mm

Features

- Stratum 3 (Overall ±4.6ppm)
- CMOS
- (VC)TCXO
- Tape and Reel

Applications

- Base Stations
- Stratum 3
- Small Cell

Part Numbering Guide

SST 75 C 33 S 48 V F - 10.000M

- **SUNTSU TCXO**
- **7.0mm x 5.0mm**
- **CMOS**
- **SUPPLY VOLTAGE**
  - 33 : 3.3V±5%
  - 50 : 5.0V±5%
- **FREQUENCY STABILITY**
  - F : ±0.50ppm
  - S : ±0.37ppm
  - T : ±0.28ppm
  - *U : ±0.14ppm
- **OPERATING TEMPERATURE RANGE**
  - 07 : 0°C - +70°C
  - 16 : -10°C - +60°C
  - 27 : -20°C - +70°C
  - 48 : -40°C - +85°C
- **TCXO/VCTCXO**
  - BLANK : TCXO
  - V : VCTCXO
- **PULLABILITY**
  - BLANK : TCXO
  - F : ±8.0ppm
  - G : ±5.0ppm
- **FREQUENCY**
  - MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

* Option U is available only for -20°C to +70°C

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	5		26	
Frequency Tolerance at +25°C	ppm	-4.6		+4.6	
Freq. Stability vs. Op Temp.	ppm	-0.28		+0.28	See part numbering guide for options.
Holdover Stability	ppm	-0.37		+0.37	
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-55		+125	
Supply Voltage (V_{DD}) - 3.3V Option	V	3.135	3.3	3.465	
Supply Voltage (V_{DD}) - 5.0V Option	V	4.750	5.0	5.250	
Current (I_{DD})	mA			6	
Voltage (VC, VCTCXO) - 3.3V Option	V	0.5		2.5	
Voltage (VC, VCTCXO) - 5.0V Option	V	0.5		2.5	
Pullability (VCTCXO)	ppm	±5.0		±8.0	See part numbering guide for options.
Linearity (VCTCXO)	%			10	
Output Load (CMOS)	pF			15	
Output Logic HIGH Level (V_{OH})	V	0.9*V_{DD}			
Output Logic LOW Level (V_{OL})	V			0.1*V_{DD}	
Rise (T_R) And Fall (T_F) Time	ns			5	
Symmetry (Duty Cycle)	%	45	50	55	
Tri-State Input Voltage (Enabled)	V	0.7*V_{DD}			
Tri-State Input Voltage (Disabled)	V			0.3*V_{DD}	
Start-Up Time	ms			2	
VC Input Impedance (VCTCXO)	kΩ	100			
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-120		
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-140		
Phase Noise (Typical) 10KHz Offset	dBc/Hz		-148		

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SST75C Series

7.0mm x 5.0mm

Outline Drawing & Land Pattern

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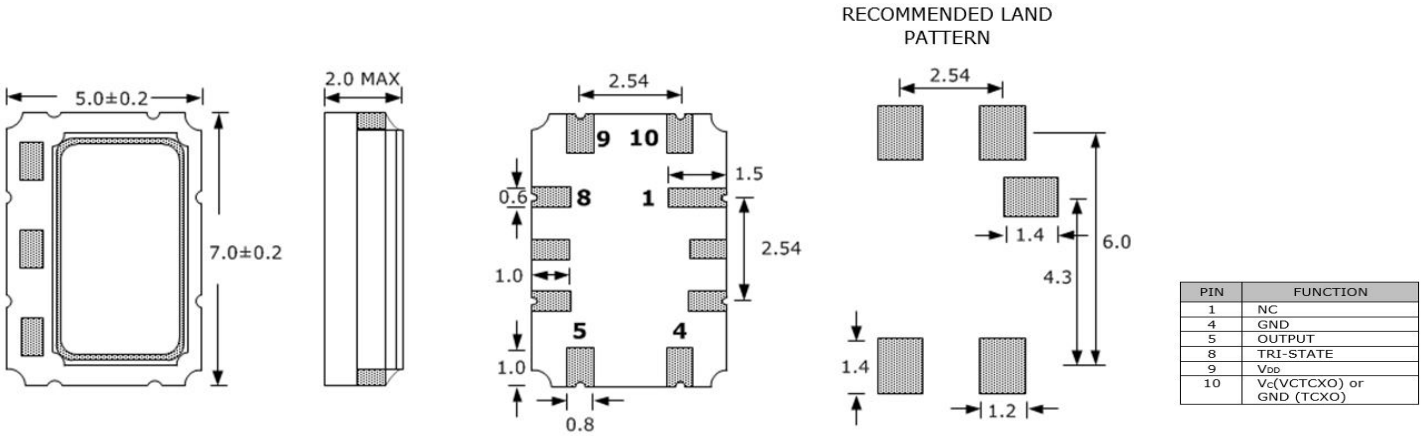
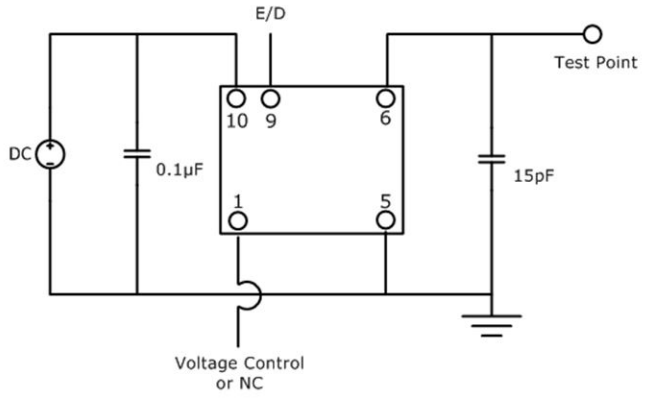
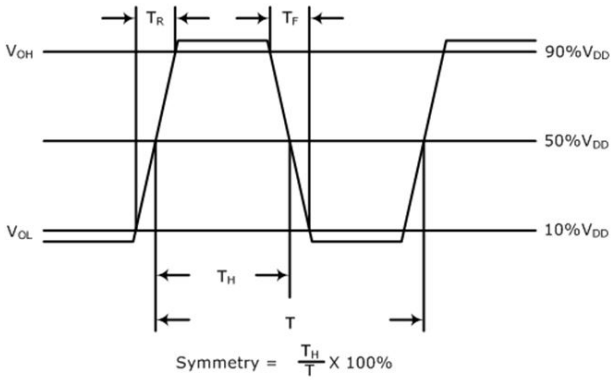


PIN	FUNCTION
1	NC
4	GND
5	OUTPUT
8	TRI-STATE
9	V_{DD}
10	V_C(VCTCXO) or GND (TCXO)

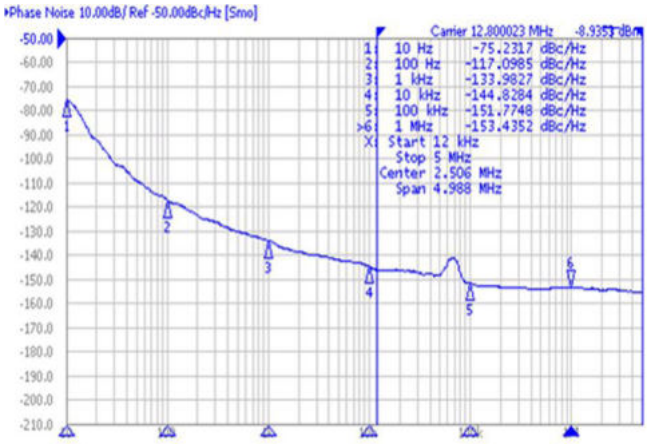
Test Circuit (CMOS)



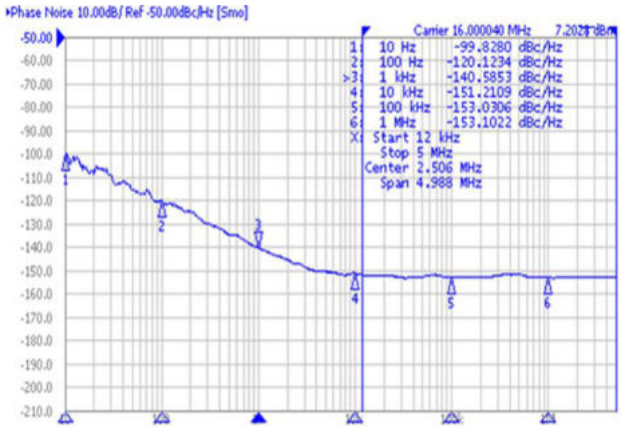
Waveform (CMOS)



Typical Phase Noise Performance (Measured By Agilent E5052A)



Frequency - 12.288MHz



Frequency - 16.000MHz

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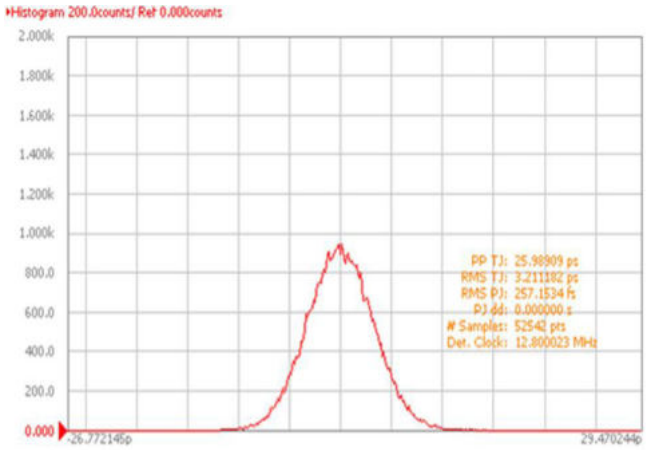
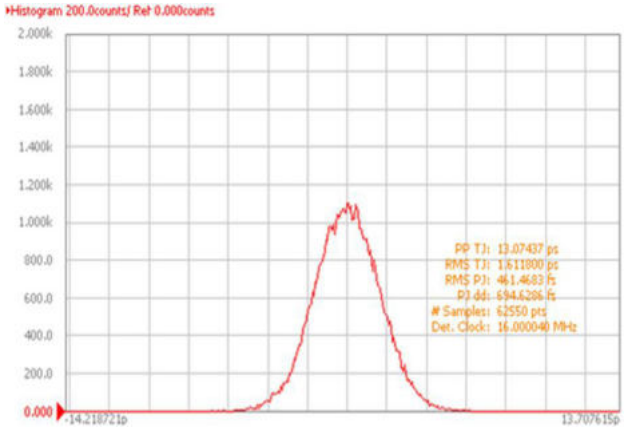
Typical Jitter Performance (Measured By Agilent E5052A)

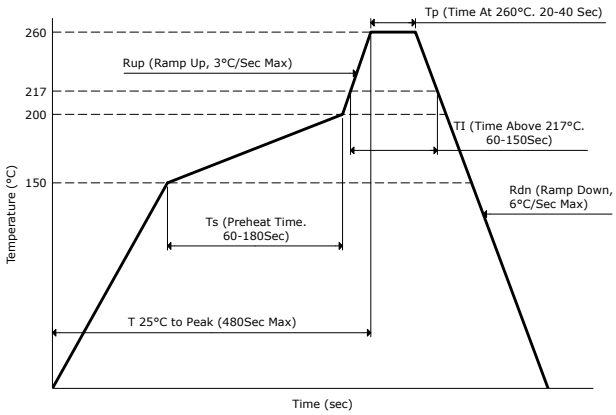


Frequency - 12.288MHz

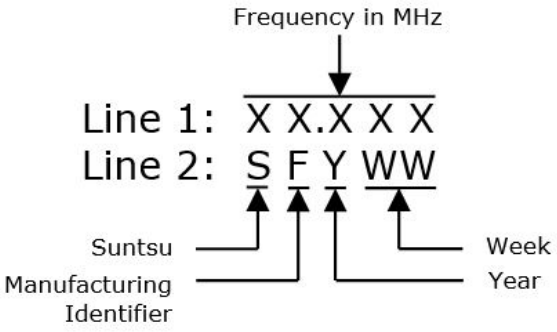


Frequency - 16.000MHz

Reflow Profile



Part Marking



Tape And Reel Dimensions

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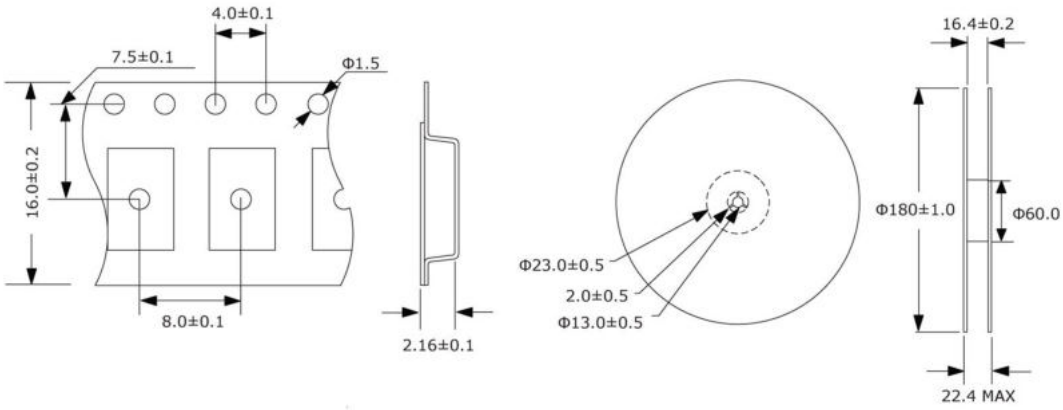
1,000pcs/Reel



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Environmental Specifications		Mechanical Specifications	
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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

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Ceramic Stratum 3 SMT 10 Pad Clipped Sinewave (VC)TCXO

SST75K Series

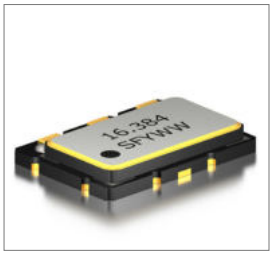
7.0mm x 5.0mm

Features

- Stratum 3 (Overall ±4.6ppm)
- Clipped Sinewave
- (VC)TCXO
- Tape and Reel

Applications

- Base Stations
- Stratum 3
- Small Cell



Part Numbering Guide

SST 75 K 33 S 48 V F - 16.384M

- **SST** — SUNTSU STRATUM 3 TCXO
- **75** — 7.0mm x 5.0mm
- **K** — CLIPPED SINEWAVE
- **33** — SUPPLY VOLTAGE: 33 : 3.3V±5%; 50 : 5.0V±5%
- **S** — FREQUENCY STABILITY: F : ±0.50ppm; S : ±0.37ppm; T : ±0.28ppm; *U : ±0.14ppm
- **48** — OPERATING TEMPERATURE RANGE: 07 : 0°C - +70°C; 16 : -10°C - +60°C; 27 : -20°C - +70°C; 48 : -40°C - +85°C
- **V** — TCXO/VCTCXO: BLANK : TCXO; V : VCTCXO
- **F** — PULLABILITY: BLANK : TCXO; F : ±8.0ppm; G : ±5.0ppm
- **16.384M** — FREQUENCY: MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

* Option U is available only for -20°C to +70°C

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	5		26	
Frequency Tolerance at +25°C	ppm	-4.6		+4.6	
Freq. Stability vs. Op Temp.	ppm	-0.28		+0.28	See part numbering guide for options.
Holdover Stability	ppm	+0.37		+0.37	
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-55		+125	
Supply Voltage (V_{DD}) - 3.3V Option	V	3.135	3.3	3.465	
Supply Voltage (V_{DD}) - 5.0V Option	V	4.750	5.0	5.250	
Current (I_{DD})	mA			6	
Voltage (VC, VCTCXO) - 3.3V Option	V	0.5		2.5	
Voltage (VC, VCTCXO) - 5.0V Option	V	0.5		2.5	
Pullability (VCTCXO)	ppm	±5.0		±8.0	See part numbering guide for options.
Linearity (VCTCXO)	%			10	
Output Load (Clipped Sinewave)	kΩ//pF			10//10	
Output Logic Levels	V_{P-P}	0.8			
Symmetry (Duty Cycle)	%	40	50	60	
Tri-State Input Voltage (Enabled)	V	0.7*V_{DD}			
Tri-State Input Voltage (Disabled)	V			0.3*V_{DD}	
Start-Up Time	ms			2	
VC Input Impedance (VCTCXO)	kΩ	100			
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-120		
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-140		
Phase Noise (Typical) 10KHz Offset	dBc/Hz		-148		

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SUNTSU

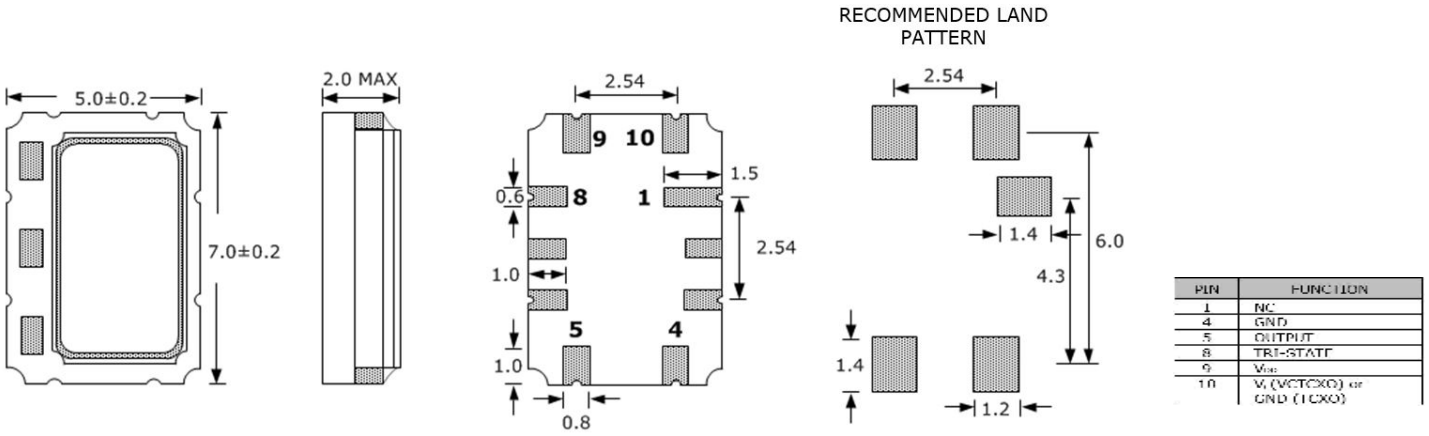
Ceramic Stratum 3 SMT 10 Pad Clipped Sinewave (VC)TCXO

SST75K Series

7.0mm x 5.0mm

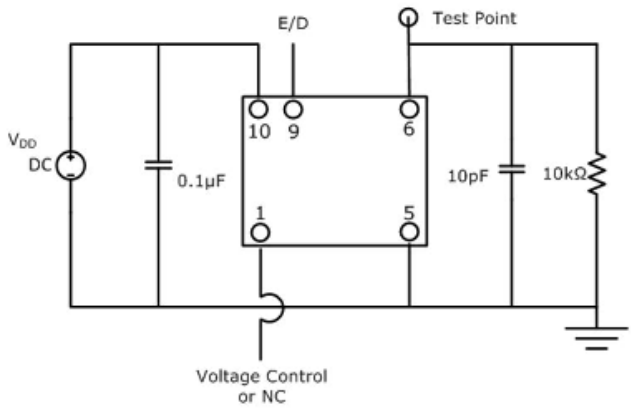
Outline Drawing & Land Pattern

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

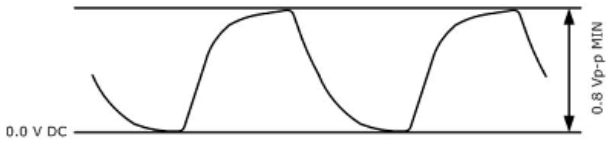


PIN	FUNCTION
1	NC
4	GND
5	OUTPUT
8	TRI-STATE
9	V_{DD}
10	V_C (VCTCXO) or GND (TCXO)

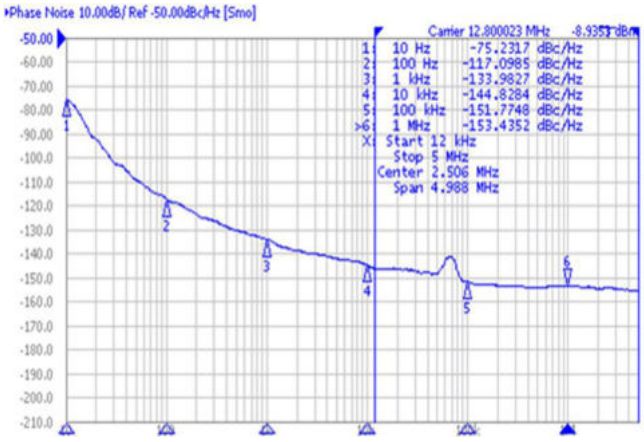
Test Circuit (Clipped Sinewave)



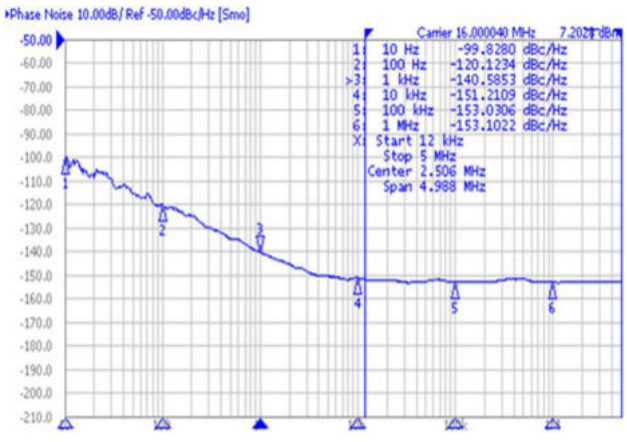
Waveform (Clipped Sinewave)



Typical Phase Noise Performance (Measured By Agilent E5052A)



Frequency - 12.288MHz



Frequency - 16.000MHz

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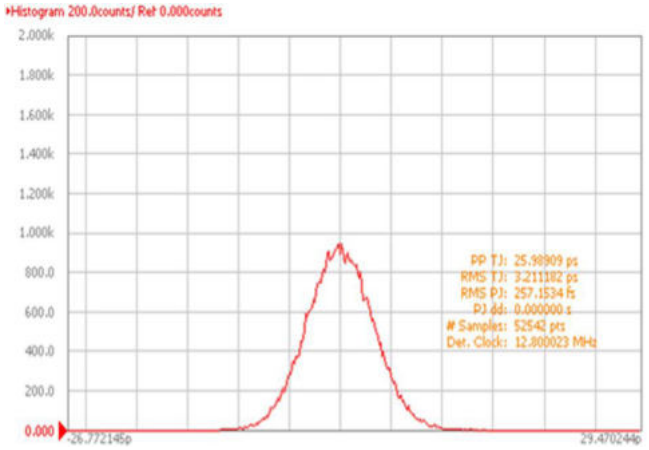
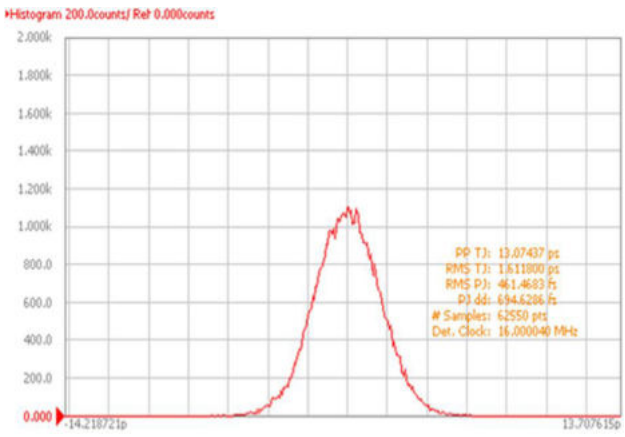
Typical Jitter Performance (Measured By Agilent E5052A)

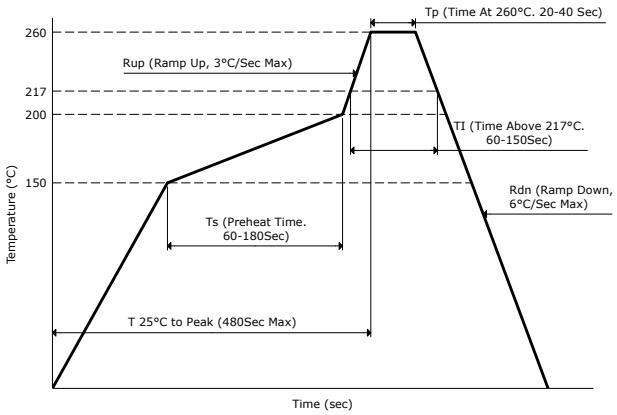


Frequency - 12.288MHz

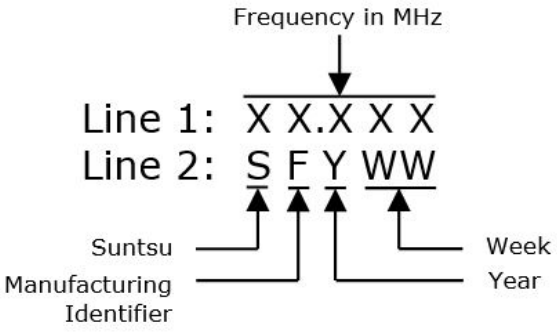


Frequency - 16.000MHz

Reflow Profile



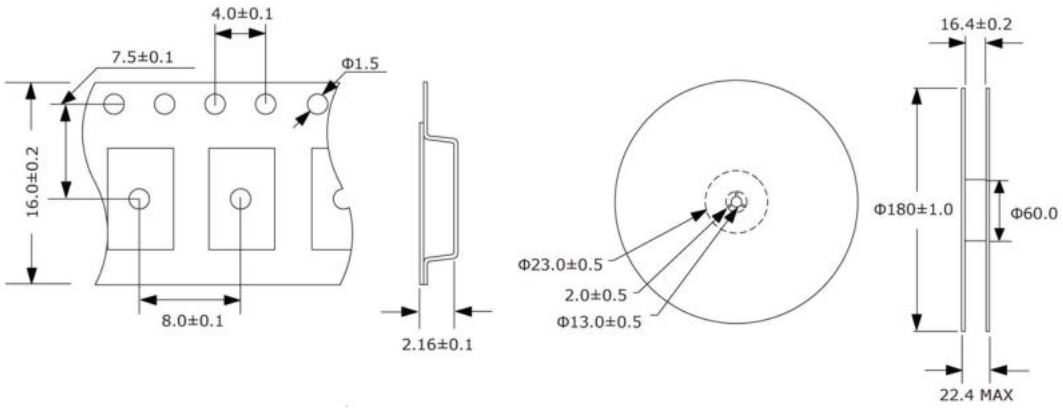
Part Marking



Tape And Reel Dimensions

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

1,000pcs/Reel



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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

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SUNTSU

Metal Full Size Dip Stratum 3 CMOS (VC)TCXO

SSTFSC Series

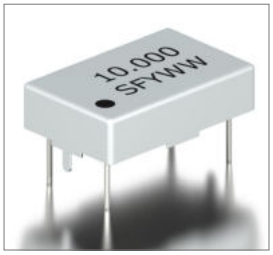
18.3mm x 11.7mm

Features

- Stratum 3 (Overall ±4.6ppm)
- CMOS
- (VC)TCXO

Applications

- Base Stations
- Stratum 3



Part Numbering Guide

SST FS C 33 R 48 V E - 10.000M

- **SUNTSU STRATUM 3 TCXO**
- **FULL SIZE**
- **CMOS**
- **SUPPLY VOLTAGE**
  - 33 : 3.3V±5%
  - 50 : 5.0V±5%
- **FREQUENCY STABILITY**
  - R : ±1.0ppm
- **OPERATING TEMPERATURE RANGE**
  - 27 : -20°C - +70°C
  - 48 : -40°C - +85°C
- **TCXO/VCTCXO**
  - BLANK : TCXO
  - V : VCTCXO
- **PULLABILITY**
  - BLANK : TCXO
  - E : ±12.0ppm
  - F : ±8.0ppm
  - G : ±5.0ppm
- **FREQUENCY**
  - MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	2		40	
Frequency Tolerance at +25°C	ppm	-0.3		+0.3	
Freq. Stability vs. Op Temp.	ppm	-1.0		+1.0	See part numbering guide for options.
Freq. Stability vs. Supply Voltage	ppm	-0.1		0.1	V_{DD} ±5% Change
Freq. Stability vs. Load	ppm	-0.1		0.1	±5% Change
Freq. Stability vs. Aging/Year	ppm	-1.0		1.0	1 year, ±2.6ppm for 10years
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-55		+125	
Supply Voltage (V_{DD}) - 3.3V Option	V	3.135	3.3	3.465	
Supply Voltage (V_{DD}) - 5.0V Option	V	4.750	5.0	5.250	
Current (I_{DD})	mA			20	
Current (VC, VCTCXO) - 3.3V Option	V	0.3		3.0	
Current (VC, VCTCXO) - 5.0V Option	V	0.5		4.5	
Pullability (VCTCXO)	PPM	±5.0		±12.0	See part numbering guide for options.
Linearity (VCTCXO)	%			20	
Output Load (CMOS)	pF			15	
Output Level High (V_{OH})	V	0.9*V_{DD}			
Output Level Low (V_{OL})	V			0.1*V_{DD}	
Rise (T_R) And Fall (T_F) Time	ns			10	
Symmetry (Duty Cycle)	%	40	50	60	
Start-Up Time	ms			3	
Frequency Adjustment	ppm	3			
Phase Noise (Typical) 10Hz Offset	dBc/Hz		-80		
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-120		
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-135		
Phase Noise (Typical) 10KHz Offset	dBc/Hz		-140		
Phase Noise (Typical) 100KHz Offset	dBc/Hz		-145		

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SUNTSU

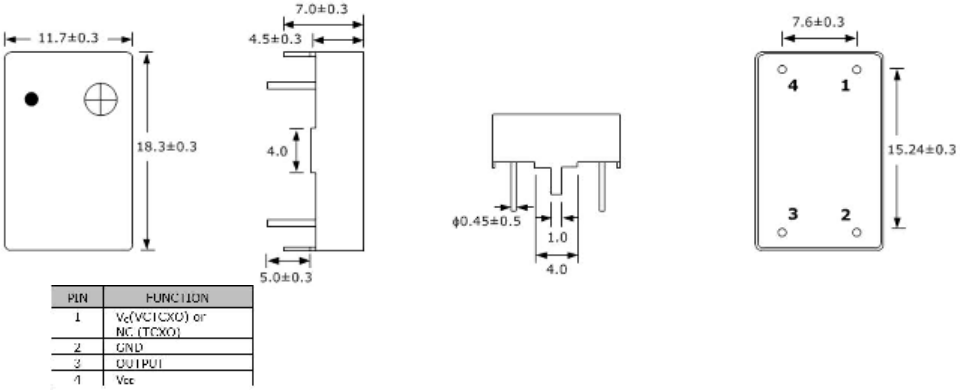
Metal Full Size Dip Stratum 3 CMOS (VC)TCXO

SSTFSC Series

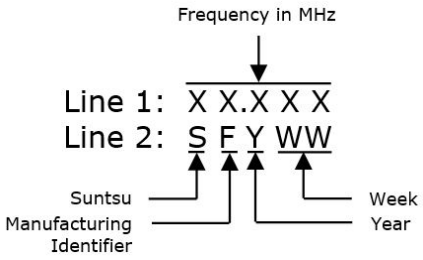
18.3mm x 11.7mm

Outline Drawing & Part Marking

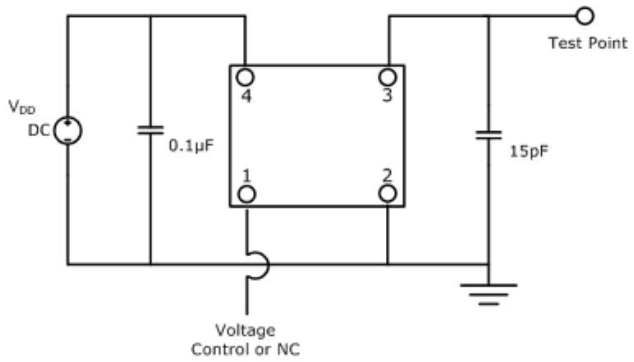
All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.



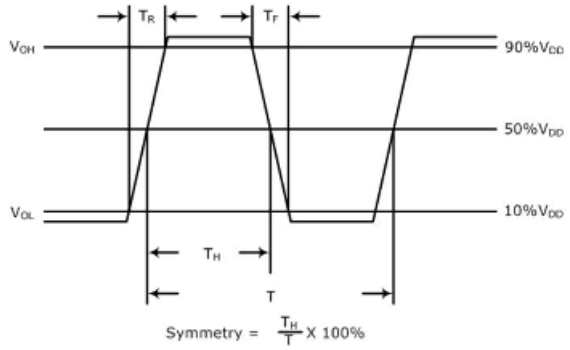
PIN	FUNCTION
1	Vc(VCTCXO) or NC (TCXO)
2	GND
3	OUTPUT
4	Vcc



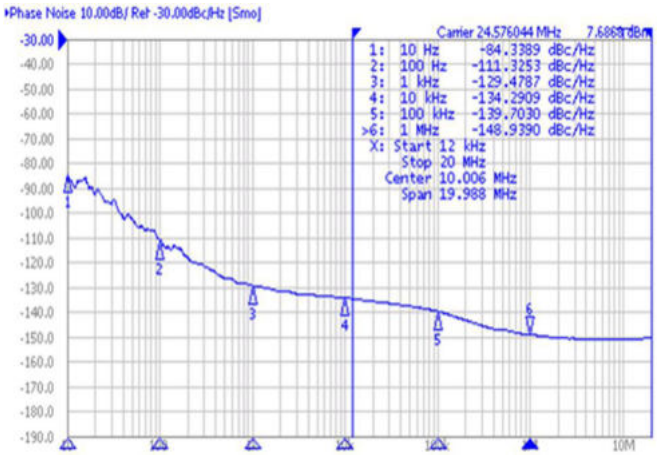
Test Circuit (CMOS)



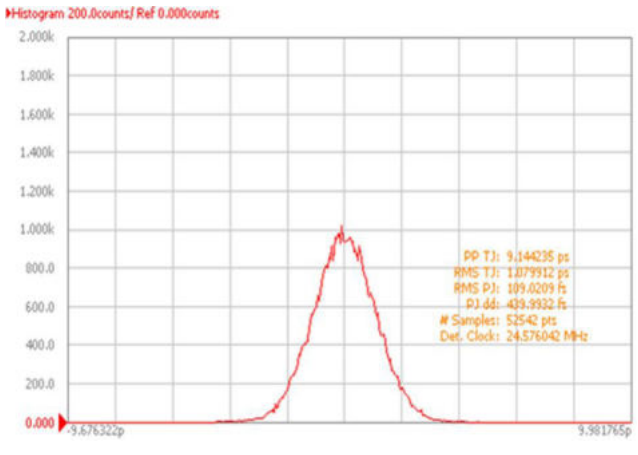
Waveform (CMOS)



Typical Phase Noise And Jitter Performance (Measured By Agilent E5052A)



Frequency - 24.576MHz



Frequency - 24.576MHz

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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

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SUNTSU

Metal Full Size Dip Stratum 3 Clipped Sinewave (VC)TCXO

SSTFSK Series

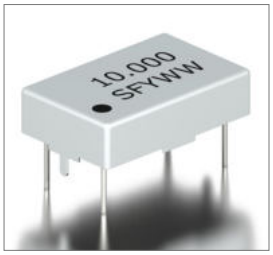
18.3mm x 11.7mm

Features

- Stratum 3 (Overall ±4.6ppm)
- Clipped Sinewave
- (VC)TCXO

Applications

- Base Stations
- Stratum 3



Part Numbering Guide

SST FS K 33 R 48 V E - 10.000M

- **SUNTSU STRATUM 3 TCXO**
- **FULL SIZE**
- **CLIPPED SINEWAVE**
- **SUPPLY VOLTAGE**
  - 33 : 3.3V±5%
  - 50 : 5.0V±5%
- **FREQUENCY STABILITY**
  - R : ±1.0PPM
- **OPERATING TEMPERATURE RANGE**
  - 27 : -20°C - +70°C
  - 48 : -40°C - +85°C
- **TCXO/VCTCXO**
  - BLANK : TCXO
  - V : VCTCXO
- **PULLABILITY**
  - BLANK : TCXO
  - E : ±12.00ppm
  - F : ±8.0ppm
  - G : ±5.0ppm
- **FREQUENCY**
  - MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	2		40	
Frequency Tolerance at +25°C	ppm	-0.3		+0.3	
Freq. Stability vs. Op Temp.	ppm	-1.0		+1.0	
Freq. Stability vs. Supply Voltage	ppm	-0.1		+0.1	V_{DD}±5% change.
Freq. Stability vs. Load	ppm	-0.1		+0.1	±5% change
Freq. Stability vs. Aging	ppm	-1.0		+1.0	1 Year, ±3.1ppm for 10 Years
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-55		+125	
Supply Voltage (V_{DD}) - 3.3V Option	V	3.135	3.3	3.465	
Supply Voltage (V_{DD}) - 5.0V Option	V	4.750	5.0	5.250	
Current (I_{DD})	mA			20	
Current (VC, VCTCXO) - 3.3V Option	V	0.3		3.0	
Current (VC, VCTCXO) - 5.0V Option	V	0.5		4.5	
Pullability (VCTCXO)	ppm	±5.0		±12.0	See part numbering guide for options.
Linearity (VCTCXO)	%			20	
Output Load (Clipped Sinewave)	kΩ//pF			10//10	
Output Logic Levels	V_{P-P}	0.8			
Rise (T_R) And Fall (T_F) Time	ns			10	
Symmetry (Duty Cycle)	%	40	50	60	
Start-Up Time	ms			3	
Frequency Adjustment	ppm	3			
Phase Noise (Typical) 10Hz Offset	dBc/Hz		-80		
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-120		
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-135		
Phase Noise (Typical) 10KHz Offset	dBc/Hz		-140		
Phase Noise (Typical) 100KHz Offset	dBc/Hz		-145		

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SUNTSU

Metal Full Size Dip Stratum 3 Clipped Sinewave (VC)TCXO

SSTFSK Series

18.3mm x 11.7mm

Outline Drawing & Part Marking

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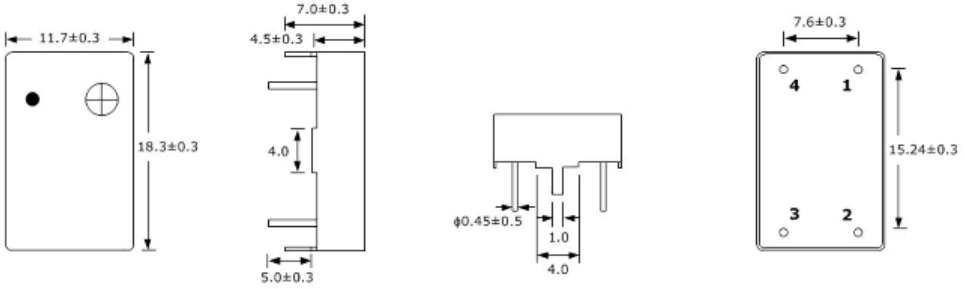
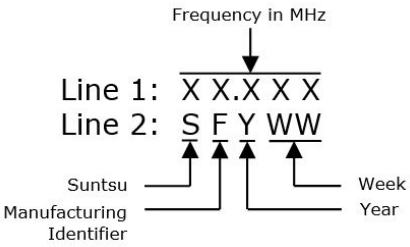
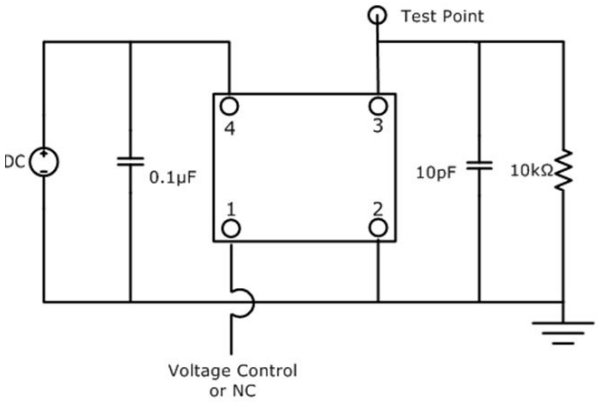


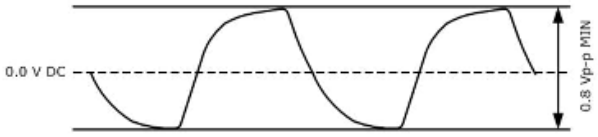
PIN	FUNCTION
1	V_c(VCTCXO) or NC (TCXO)
2	GND
3	OUTPUT
4	Vcc



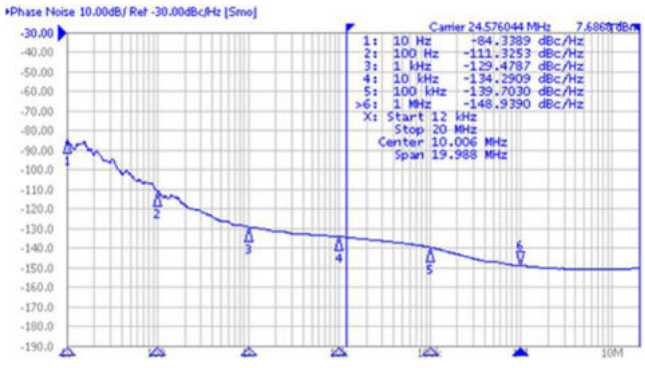
Test Circuit (Clipped Sinewave)



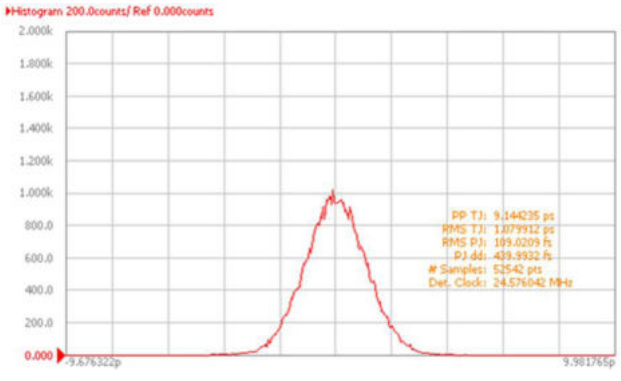
Waveform (Clipped Sinewave)



Typical Phase Noise And Jitter Performance (Measured By Agilent E5052A)



Frequency - 24.576MHz



Frequency - 24.576MHz

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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

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SUNTSU

Ceramic SMT 6 Pad Clipped Sinewave (VC)TCXO

STC21K Series

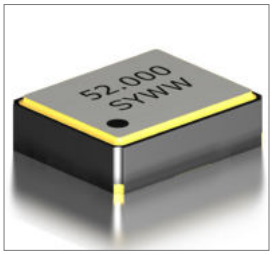
2.0mm x 1.6mm

Features

- ±0.5ppm (Frequency Stability) Available
- Clipped Sinewave
- (VC)TCXO
- Tape and Reel

Applications

- GPS
- Mobile Communication Equipment
- IoT, Wearable Electronics
- WiMAX, WLAN



Part Numbering Guide

STC 21 K 18 R 48 V G - 52.000M

- **SUNTSU TCXO**
- **2.0mm x 1.6mm**
- **CLIPPED SINEWAVE**
- **SUPPLY VOLTAGE**
  - 18 : 1.8V±5%
  - 25: 2.5V±5%
  - 28: 2.8V±5%
  - 30: 3.0V±5%
  - 33: 3.3V±5%
- **FREQUENCY STABILITY**
  - O : ±2.5ppm
  - P : ±2.0ppm
  - Q : ±1.5ppm
  - R : ±1.0ppm
  - F : ±0.5ppm
- **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
- **TCXO/VCTCXO**
  - BLANK : TCXO
  - V : VCTCXO
- **PULLABILITY**
  - BLANK : TCXO
  - G : ±5.0ppm
- **FREQUENCY**
  - MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	10		52	
Frequency Tolerance at +25°C	ppm	-2.0		+2.0	
Freq. Stability vs. Op Temp.	ppm	-0.5		+0.5	See part numbering guide for options.
Freq. Stability vs. Supply Voltage	ppm	-0.2		+0.2	V_{DD}±5% change.
Freq. Stability vs. Load	ppm	-0.2		+0.2	±10% change
Freq. Stability vs. Aging	ppm	-1.0		+1.0	1 Year
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-40		+85	
Supply Voltage (V_{DD}) - 3.0V Option	V	2.85	3.0	3.15	See part numbering guide for options.
Current (I_{DD}) - 10MHz - 26MHz	mA			1.5	
Current (I_{DD}) - 26MHz - 52MHz	mA			2.0	
Control Voltage (VCTCXO) - 1.8V	V	0.3		1.5	
Control Voltage (VCTCXO) - 2.5V	V	0.4		2.4	
Control Voltage (VCTCXO) - 2.8/3.0/3.3	V	0.5		2.5	
Pullability (VCTCXO)	ppm	±5.0			
Output Load (Clipped Sinewave)	kΩ//pF			10//10	
Output Logic Levels	V_{P-P}	0.8			
Symmetry (Duty Cycle)	%	40	50	60	
Start-Up Time	ms			2.0	
VC Input Impedance (VCTCXO)	kΩ	500			
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-115		At 19.2MHz
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-135		At 19.2MHz
Phase Noise (Typical) 10KHz Offset	dBc/Hz		-148		At 19.2MHz

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Specifications are subject to change without notice.

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SUNTSU

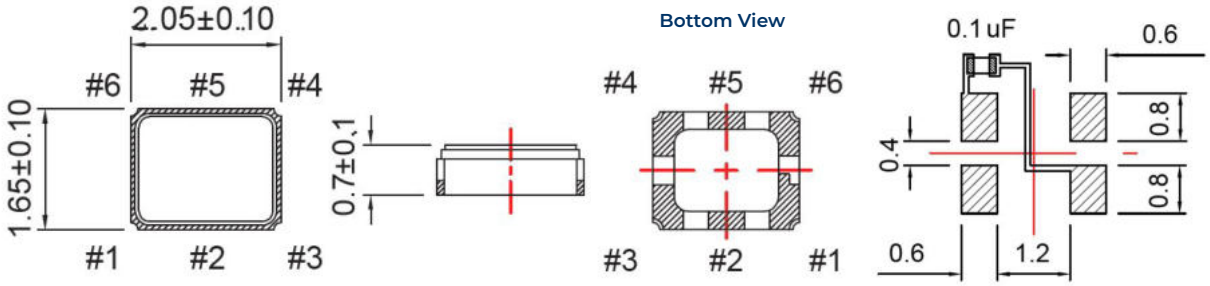
Ceramic SMT 6 Pad Clipped Sinewave (VC)TCXO

STC21K Series

2.0mm x 1.6mm

Outline Drawing & Land Pattern

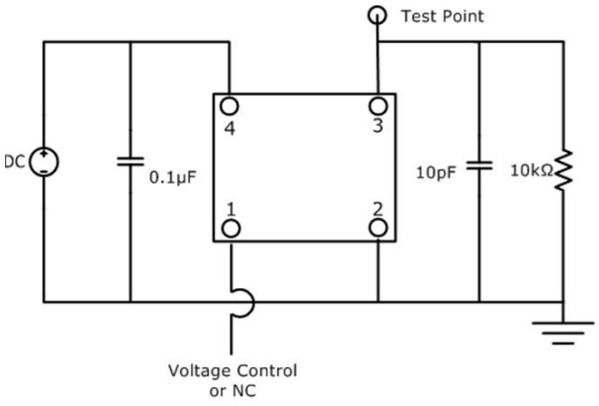
All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.



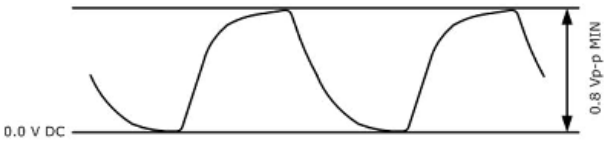
PIN	FUNCTION
1	VCON: VC-TCXO GND: TCXO
2	No Connection
3	GND
4	Output
5	No Connection
6	VDD

To ensure optimal oscillator performance, place a by-pass Capacitor of 0.1µF as close to the part as possible between Vdd and GND pads.

Test Circuit (Clipped Sinewave)



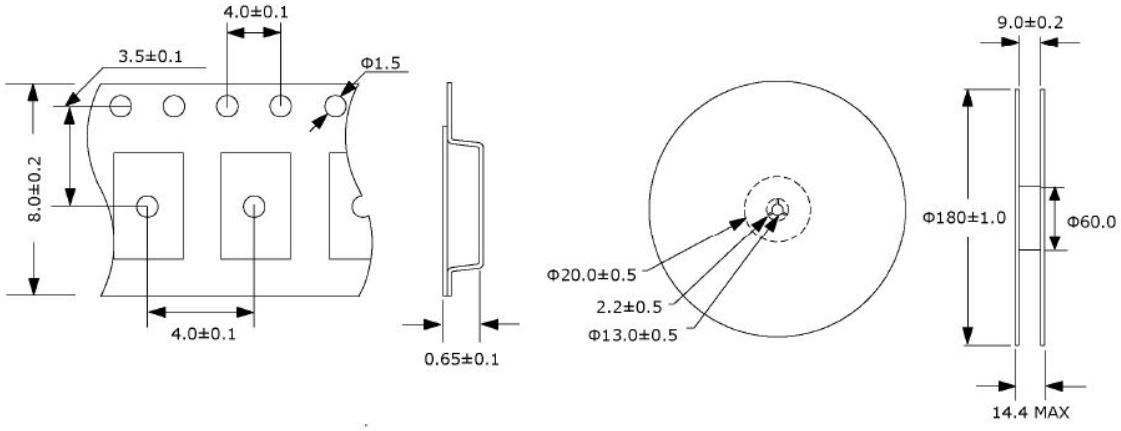
Waveform (Clipped Sinewave)



Tape And Reel Dimensions

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

3,000pcs/Reel



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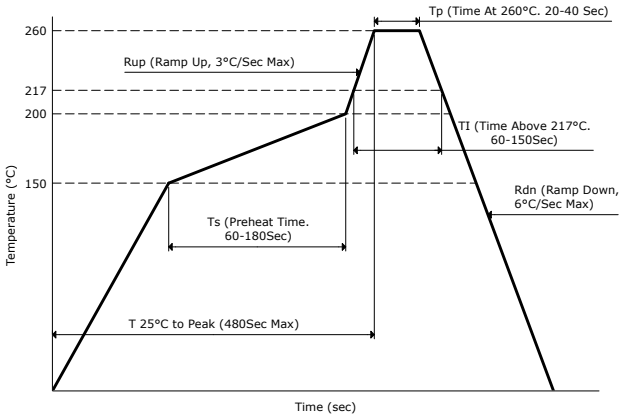
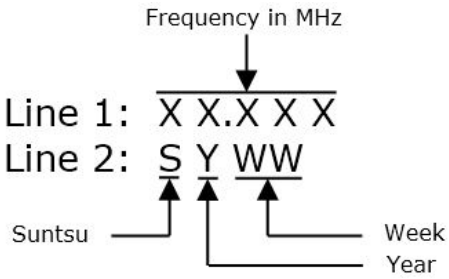
Reflow Profile & Part Marking





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

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SUNTSU

Ceramic SMT 4 Pad Clipped Sinewave (VC)TCXO

STC22K Series

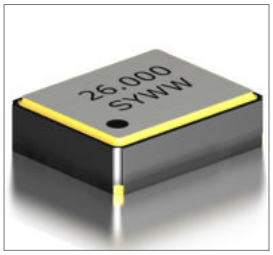
2.5mm x 2.0mm

Features

- ±0.5ppm (Frequency Stability) Available
- Clipped Sinewave
- (VC)TCXO
- Tape and Reel

Applications

- GPS
- Mobile Communication Equipment
- Cellular And Cordless Phones
- IP Networking



Part Numbering Guide

STC 22 K 30 R 48 V E - 26.000M

- **SUNTSU TCXO**
- **2.5mm x 2.0mm**
- **CLIPPED SINEWAVE**
- **SUPPLY VOLTAGE**
  - 18 : 1.8V±5%
  - 25 : 2.5V±5%
  - 27 : 2.7V±5%
  - 28 : 2.8V±5%
  - 30 : 3.0V±5%
  - 33 : 3.3V±5%
- **FREQUENCY STABILITY**
  - N : ±5.0ppm
  - O : ±2.5ppm
  - P : ±2.0ppm
  - Q : ±1.5ppm
  - R : ±1.0ppm
  - F : ±0.5ppm
- **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
- **TCXO/VCTCXO**
  - BLANK : TCXO
  - V : VCTCXO
- **PULLABILITY**
  - BLANK : TCXO
  - E : ±12.00ppm
  - F : ±8.0ppm
  - G : ±5.0ppm
- **FREQUENCY**
  - MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	13		52	
Frequency Tolerance at +25°C	ppm	-2.0		+2.0	1 Hour after reflow
Freq. Stability vs. Op Temp.	ppm	-0.5		+0.5	See part numbering guide for options.
Freq. Stability vs. Supply Voltage	ppm	-0.2		+0.2	V_{DD}±5% change.
Freq. Stability vs. Load	ppm	-0.2		+0.2	±10% change
Freq. Stability vs. Aging	ppm	-1.0		+1.0	1 Year
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-55		+125	
Supply Voltage (V_{DD}) - 3.0V Option	V	2.985	3.0	3.015	See part numbering guide for options.
Current (I_{DD})	mA			2	
Control Voltage (V_C, VCTCXO)	V	0		V_{DD}	Center Voltage: V_{DD}*50%.
Pullability (VCTCXO)	ppm	±5.0		±12.0	See part numbering guide for options.
Linearity (VCTCXO)	%			10	
Output Load (Clipped Sinewave)	kΩ//pF			10//10	
Output Logic Levels	V_{P-P}	0.8			
Symmetry (Duty Cycle)	%	40	50	60	
Start-Up Time	ms			2.0	
VC Input Impedance (VCTCXO)	kΩ	100			
Phase Noise (Typical) 10Hz Offset	dBc/Hz		-85		
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-115		
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-135		
Phase Noise (Typical) 10KHz Offset	dBc/Hz		-145		
Phase Noise (Typical) 100KHz Offset	dBc/Hz		-150		

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SUNTSU

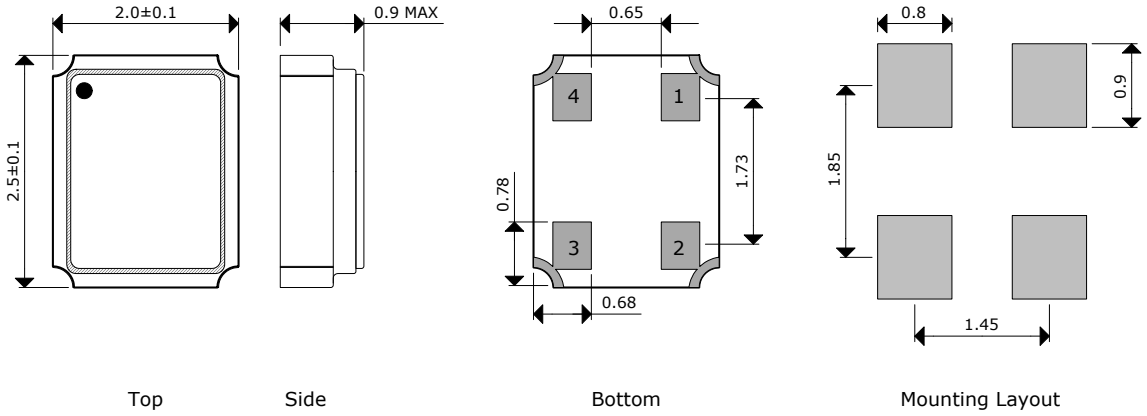
Ceramic SMT 4 Pad Clipped Sinewave (VC)TCXO

STC22K Series

2.5mm x 2.0mm

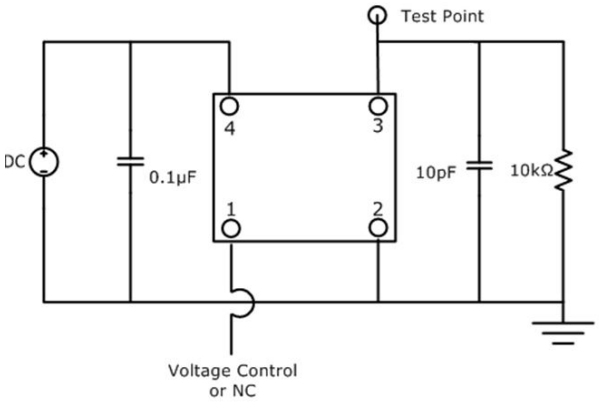
Outline Drawing

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

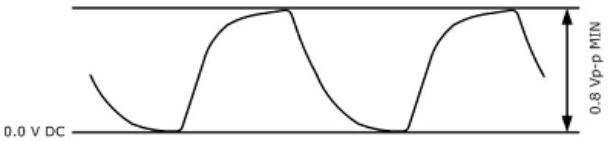


PIN	FUNCTION
1	V_c (VCTCXO) or NC (TCXO)
2	GND
3	OUTPUT
4	V_{DD}

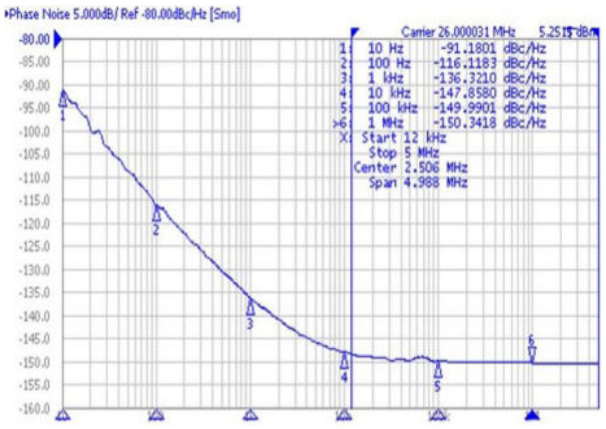
Test Circuit (Clipped Sinewave)



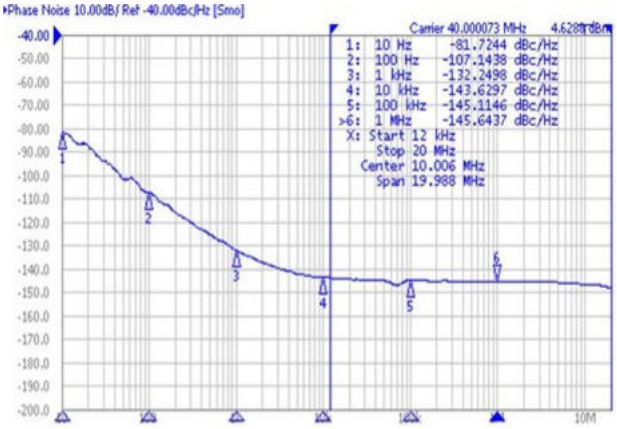
Waveform (Clipped Sinewave)



Typical Phase Noise (Measured By Agilent E5052A)



Frequency - 26.000MHz



Frequency - 40.000MHz

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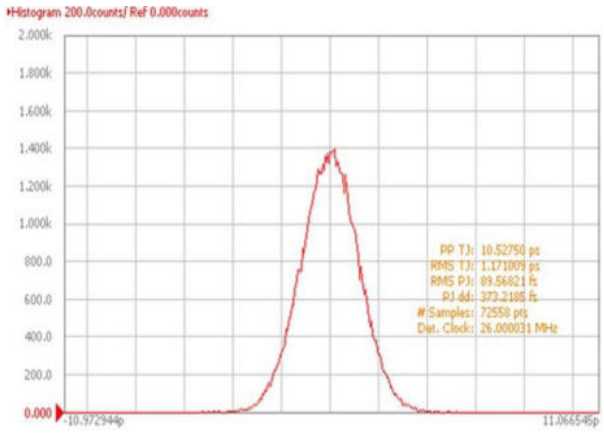
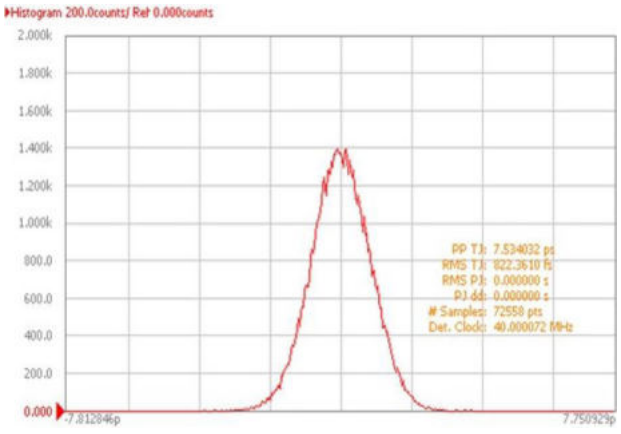
Jitter Performance (Measured By Agilent E5052A)



Frequency - 26.000MHz

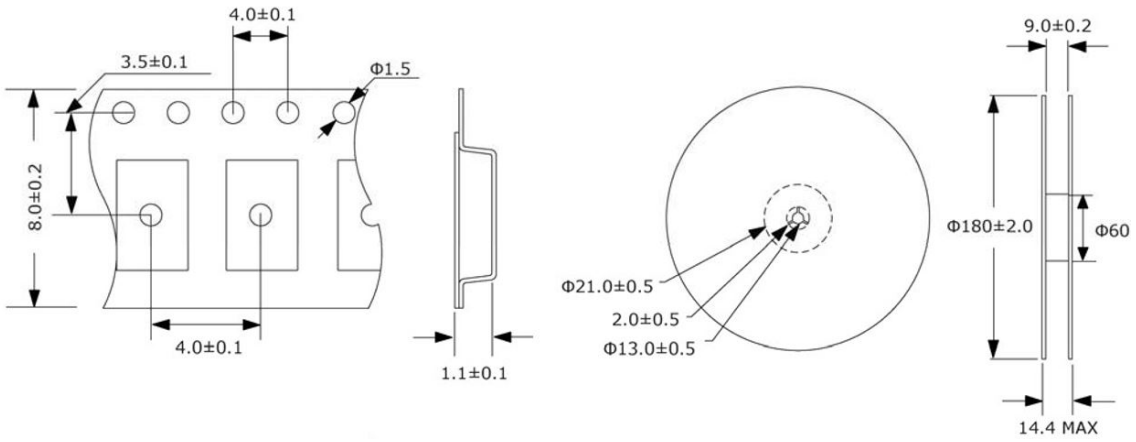


Frequency - 40.000MHz

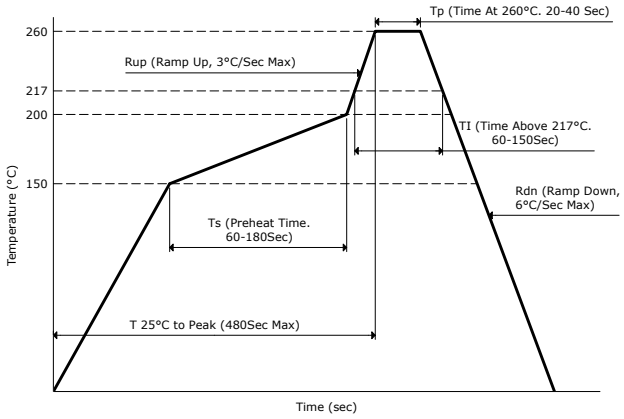
Tape And Reel Dimensions

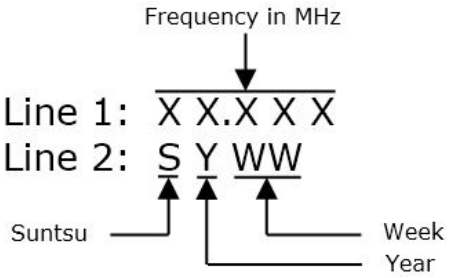
All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.

3,000pcs/Reel



Reflow Profile & Part Marking





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SUNTSU

Ceramic SMT 4 Pad CMOS (VC)TCXO

STC32C Series

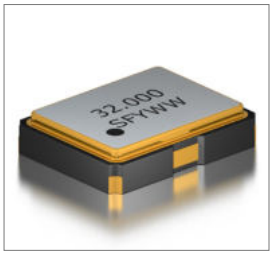
3.2mm x 2.5mm

Features

- ±1.0ppm (Frequency Stability) Available
- CMOS
- (VC)TCXO
- Tape and Reel

Applications

- Base Stations
- IP networking
- Cellular and Cordless Phones



Part Numbering Guide

STC 32 C 33 R 48 V E - 32.000M

- **SUNTSU TCXO**
- **3.2mm x 2.5mm**
- **CMOS**
- **SUPPLY VOLTAGE**
  - 25 : 2.5V±5%
  - 27 : 2.7V±5%
  - 30 : 3.0V±5%
  - 33 : 3.3V±5%
- **FREQUENCY STABILITY**
  - N : ±5.0ppm
  - O : ±2.5ppm
  - P : ±2.0ppm
  - Q : ±1.5ppm
  - R : ±1.0ppm
- **OPERATING TEMPERATURE RANGE**
  - 07 : 0°C - +70°C
  - 16 : -10°C - +60°C
  - 27 : -20°C - +70°C
  - 38 : -30°C - +85°C
  - 48 : -40°C - +85°C
- **TCXO/VCTCXO**
  - BLANK : TCXO
  - V : VCTCXO
- **PULLABILITY**
  - BLANK : TCXO
  - E : ±12.0ppm
  - F : ±8.0ppm
  - G : ±5.0ppm
- **FREQUENCY**
  - MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	6		40	
Frequency Tolerance at +25°C	ppm	-1.5		+1.5	I hour after Reflow
Freq. Stability vs. Op Temp.	ppm	-1.0		+1.0	See part numbering guide for options.
Freq. Stability vs. Supply Voltage	ppm	-0.3		+0.3	V_{DD} ±5% Change
Freq. Stability vs. Load	ppm	-0.3		+0.3	±5% Change
Freq. Stability vs. Aging	ppm	-1.0		+1.0	1 Year
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-55		+125	
Supply Voltage (V_{DD})	V	3.135	3.3	3.465	See part numbering guide for options.
Current (I_{DD})	mA			6	
Current Voltage (VC, VCTCXO)	V	0		V_{DD}	Center Voltage: V_{DD}*50%
Pullability (VCTCXO)	ppm	±5.0		±12.0	See part numbering guide for options.
Linearity (VCTCXO)	%			10	
Output Load (CMOS)	pF			15	
Output Logic HIGH Level (V_{OH})	V	0.8*V_{DD}			
Output Logic LOW Level (V_{OL})	V			0.2*V_{DD}	
Rise (T_R) And Fall (T_F) Time	ns			5	
Symmetry (Duty Cycle)	%	40		60	
Start-Up Time	ms			3	
VC Input Impedance (VCTCXO)	kΩ	100			
Phase Noise (Typical) 10Hz Offset	dBc/Hz		-85		
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-115		
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-135		
Phase Noise (Typical) 10KHz Offset	dBc/Hz		-145		
Phase Noise (Typical) 100KHz Offset	dBc/Hz		-150		

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SUNTSU

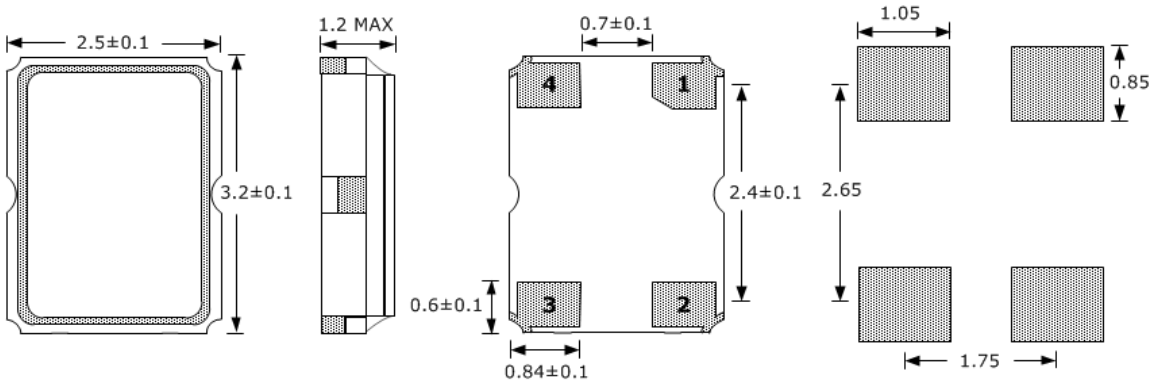
Ceramic SMT 4 Pad CMOS (VC)TCXO

STC32C Series

3.2mm x 2.5mm

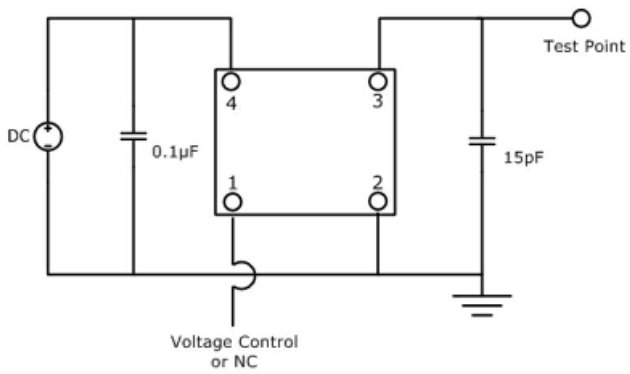
Outline Drawing & Land Pattern

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

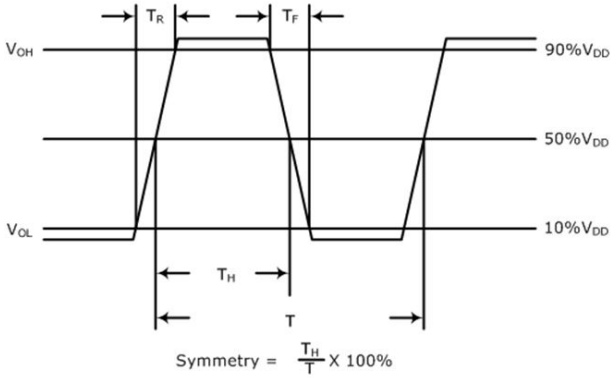


PIN	FUNCTION
1	Vc (VCTCXO) NC OR GND (TCXO)
2	GND
3	OUTPUT
4	V_{DD}

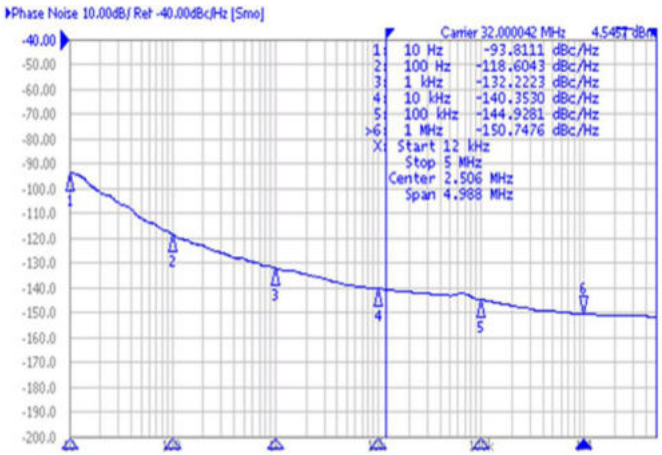
Test Circuit (CMOS)



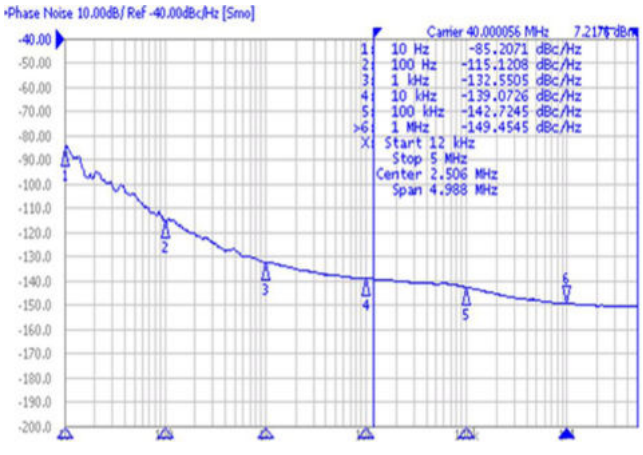
Waveform (CMOS)



Typical Phase Noise Performance (Measured By Agilent E5052A)



Frequency - 32.000MHz



Frequency - 40.000MHz

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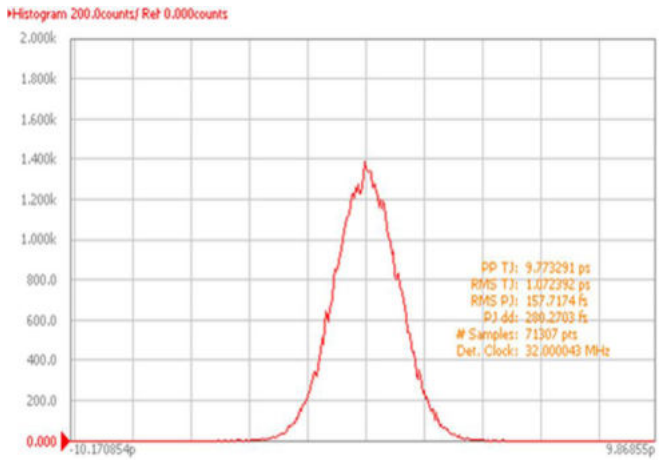
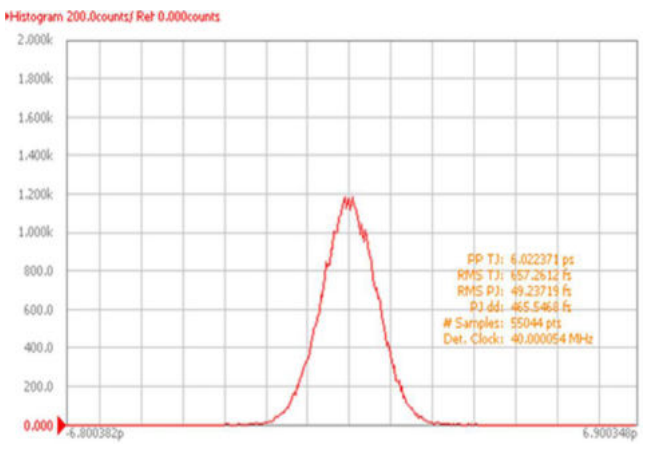
Typical Jitter Performance (Measured By Agilent E5052A)

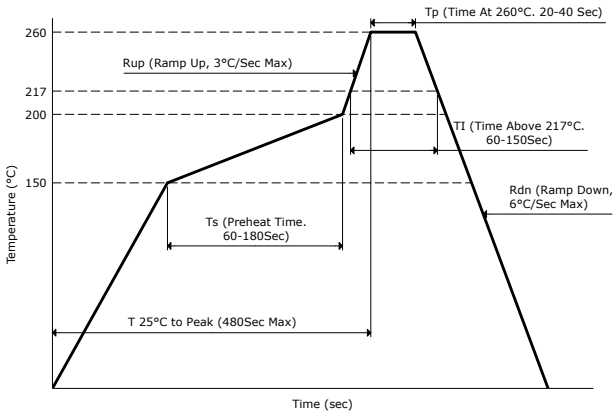


Frequency - 32.000MHz

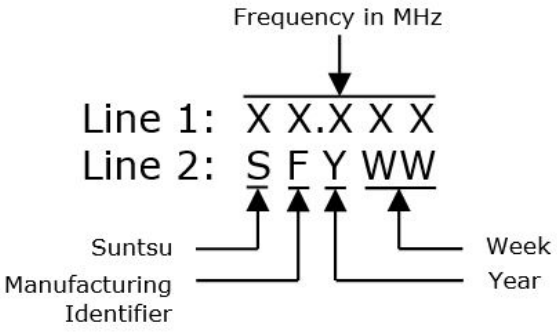


Frequency - 40.000MHz

Reflow Profile



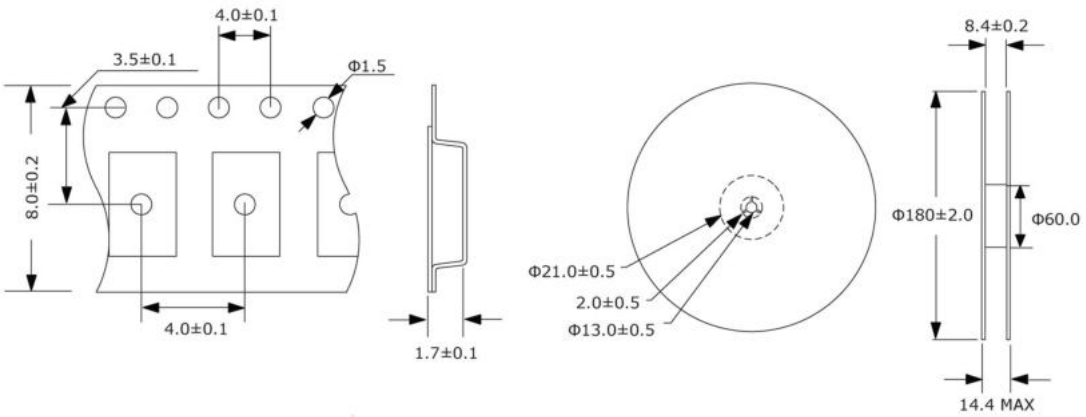
Part Marking



Tape And Reel Dimensions

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

3,000pcs/Reel



Suntsu Electronics, Inc.
142 TECHNOLOGY DR., SUITE 150
IRVINE, CA 92618

Call: +1-949-783-7300 | Fax: +1-949-783-7301

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

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SUNTSU

Ceramic SMT 4 Pad Clipped Sinewave (VC)TCXO

STC32K Series

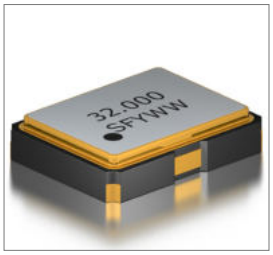
3.2mm x 2.5mm

Features

- ±0.5ppm (Frequency Stability) Available
- Clipped Sinewave
- (VC)TCXO
- Tape and Reel

Applications

- GPS
- Mobile Communication Equipment
- Cellular And Cordless Phones
- IP Networking



Part Numbering Guide

STC 32 K 33 R 48 V E A - 32.000M

- **SUNTSU TCXO**
- **3.2mm x 2.5mm**
- **CLIPPED SINEWAVE**
- **SUPPLY VOLTAGE**
  - 18 : 1.8V±5%
  - 25 : 2.5V±5%
  - 27 : 2.7V±5%
  - 30 : 3.0V±5%
  - 33 : 3.3V±5%
- **FREQUENCY STABILITY**
  - N : ±5.0ppm
  - O : ±2.5ppm
  - P : ±2.0ppm
  - Q : ±1.5ppm
  - R : ±1.0ppm
  - F : ±0.5ppm
- **OPERATING TEMPERATURE RANGE**
  - 07 : 0°C - +70°C
  - 16 : -10°C - +60°C
  - 17 : -10°C - +70°C
  - 27 : -20°C - +70°C
  - 37 : -30°C - +75°C
  - 38 : -30°C - +85°C
  - 48 : -40°C - +85°C
- **TCXO/VCTCXO**
  - BLANK : TCXO
  - V : VCTCXO
- **PULLABILITY**
  - BLANK : TCXO
  - E : ±12.00ppm
  - F : ±8.0ppm
  - G : ±5.0ppm
- **COMPENSATION**
  - BLANK : Digital
  - A : Analog
- **FREQUENCY**
  - MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	6		40	
Frequency Tolerance at +25°C	ppm	-1.5		+1.5	1 hour after reflow.
Freq. Stability vs. Op Temp.	ppm	-0.5		+0.5	See part numbering guide for options.
Freq. Stability vs. Supply Voltage	ppm	-0.3		+0.3	V_{DD}±5% change.
Freq. Stability vs. Load	ppm	-0.2		+0.2	±10% change
Freq. Stability vs. Aging	ppm	-1.0		+1.0	1 Year
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-55		+125	
Supply Voltage (V_{DD})	V	3.135	3.3	3.465	See part numbering guide for options.
Current (I_{DD})	mA			2	
Control Current (VC, VCTCXO)	V	0		V_{DD}	Center Voltage : V_{DD}*50%
Pullability (VCTCXO)	ppm	±5.0		±12.0	See part numbering guide for options.
Linearity (VCTCXO)	%			10	
Output Load (Clipped Sinewave)	kΩ//pF			10//10	
Output Logic Levels	V_{P-P}	0.8			
Symmetry (Duty Cycle)	%	40	50	60	
Start-Up Time	ms			3	
VC Input Impedance (VCTCXO)	kΩ	100			
Phase Noise (Typical) 10Hz Offset	dBc/Hz		-85		
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-115		
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-135		
Phase Noise (Typical) 10KHz Offset	dBc/Hz		-145		
Phase Noise (Typical) 100KHz Offset	dBc/Hz		-150		

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SUNTSU

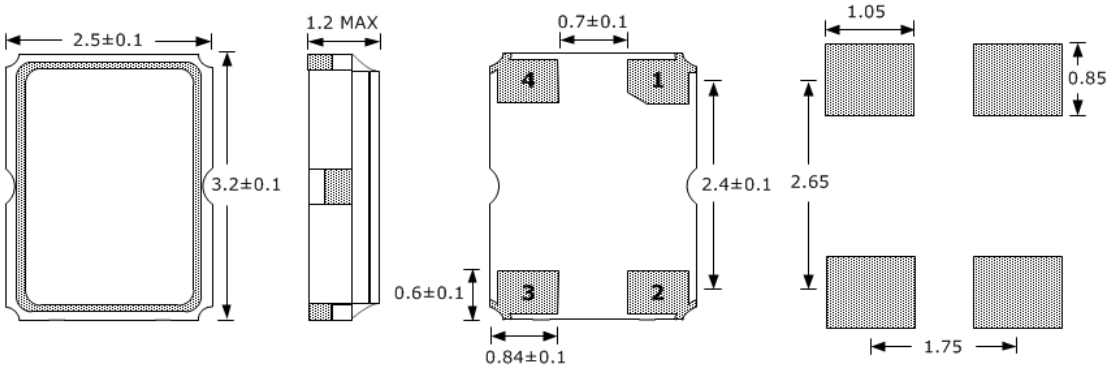
Ceramic SMT 4 Pad Clipped Sinewave (VC)TCXO

STC32K Series

3.2mm x 2.5mm

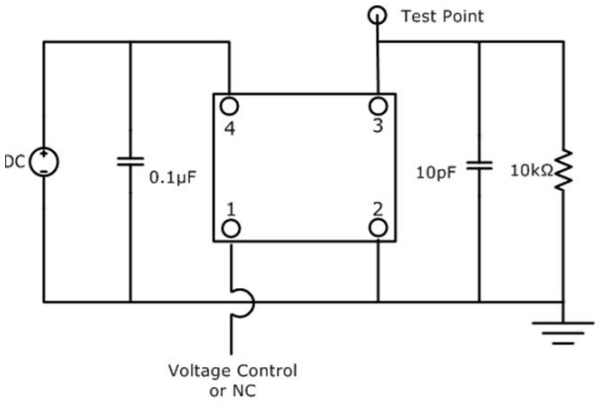
Outline Drawing

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

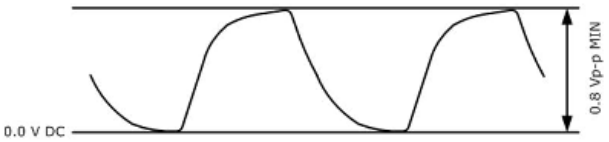


PIN	FUNCTION
1	Vc (VCTCXO) NC OR GND (TCXO)
2	GND
3	OUTPUT
4	VDD

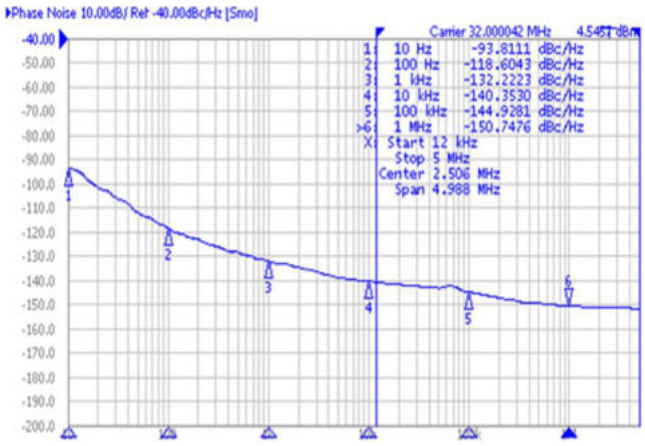
Test Circuit (Clipped Sinewave)



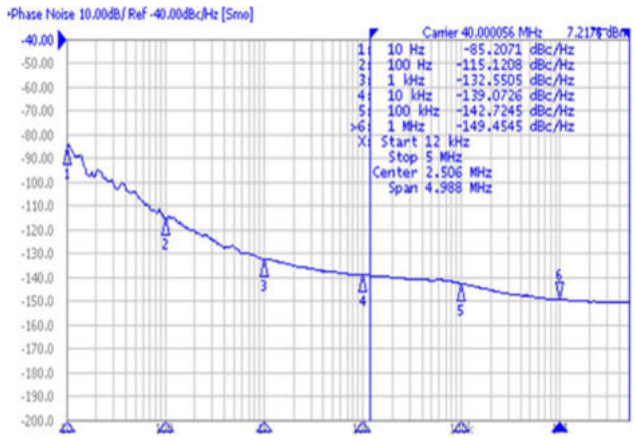
Waveform (Clipped Sinewave)



Typical Phase Noise (Measured By Agilent E5052A)



Frequency - 32.000MHz



Frequency - 40.000MHz

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Specifications are subject to change without notice.

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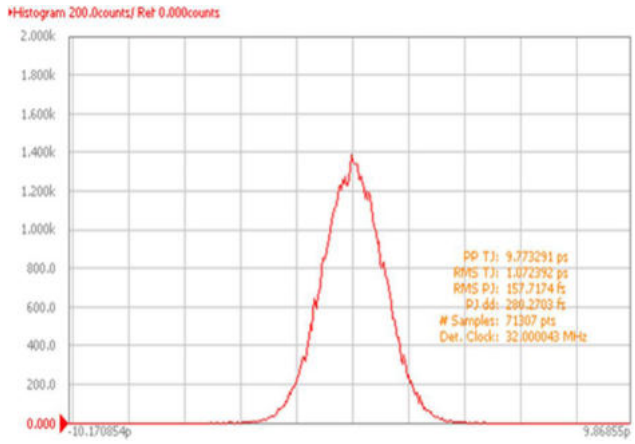
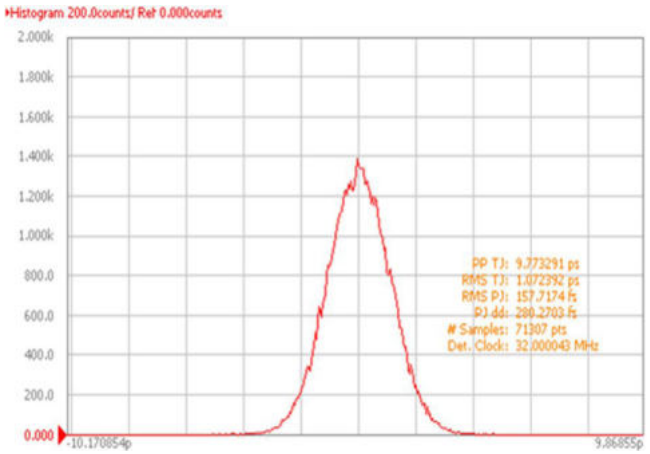
Jitter Performance (Measured By Agilent E5052A)



Frequency - 32.000MHz

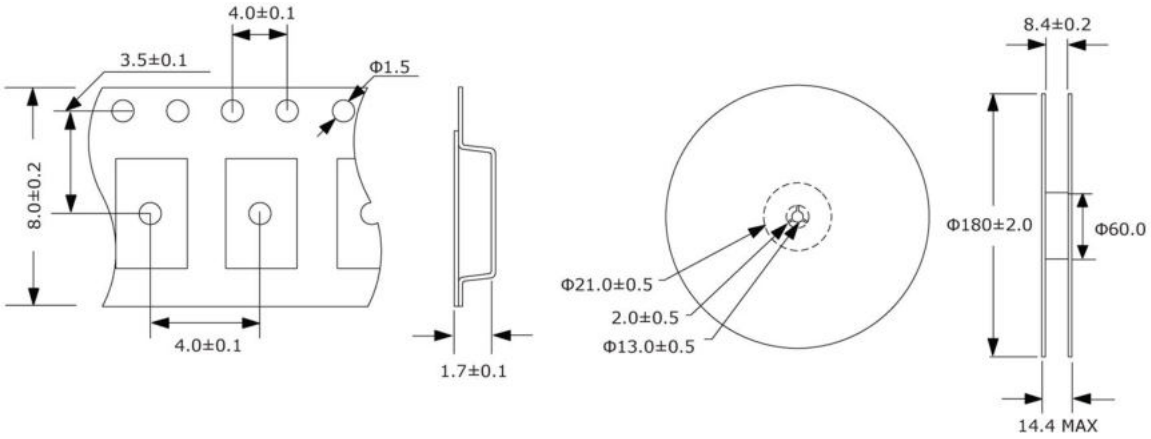


Frequency - 40.000MHz

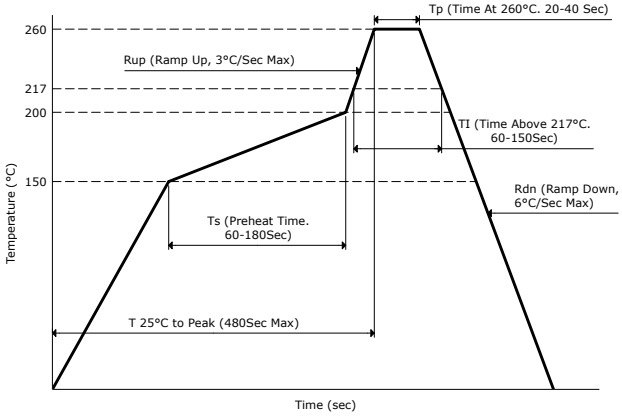
Tape And Reel Dimensions

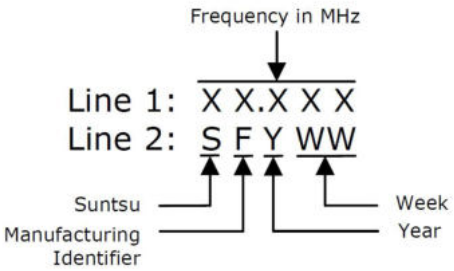
All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.

3,000pcs/Reel



Reflow Profile & Part Marking





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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

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SUNTSU

Ceramic SMT 4 Pad CMOS (VC)TCXO

STC53C Series

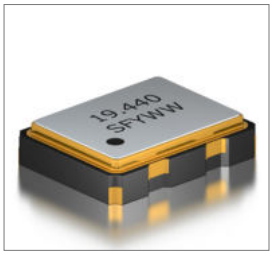
5.0mm x 3.2mm

Features

- ±1.0ppm (Frequency Stability) Available
- CMOS
- (VC)TCXO
- Tape and Reel

Applications

- Base Stations
- IP networking
- Cellular and Cordless Phones



Part Numbering Guide

STC 53 C 33 R 48 V E - 19.440M

- **SUNTSU TCXO**
- **5.0mm x 3.2mm**
- **CMOS**
- **SUPPLY VOLTAGE**
  - 25 : 2.5V±5%
  - 27 : 2.7V±5%
  - 30 : 3.0V±5%
  - 33 : 3.3V±5%
- **FREQUENCY STABILITY**
  - N : ±5.0ppm
  - O : ±2.5ppm
  - P : ±2.0ppm
  - Q : ±1.5ppm
  - R : ±1.0ppm
- **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
- **TCXO/VCTCXO**
  - BLANK : TCXO
  - V : VCTCXO
- **PULLABILITY**
  - BLANK : TCXO
  - E : ±12.0ppm
  - F : ±8.0ppm
  - G : ±5.0ppm
- **FREQUENCY**
  - MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	6		40	
Frequency Tolerance at +25°C	ppm	-1.5		+1.5	I hour after Reflow
Freq. Stability vs. Op Temp.	ppm	-1.0		+1.0	See part numbering guide for options.
Freq. Stability vs. Supply Voltage	ppm	-0.3		+0.3	V_{DD} ±5% Change
Freq. Stability vs. Load	ppm	-0.3		+0.3	±5% Change
Freq. Stability vs. Aging	ppm	-1.0		+1.0	1 Year
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-55		+125	
Supply Voltage (V_{DD})	V	3.135	3.3	3.465	See part numbering guide for options.
Current (I_{DD})	mA			6	
Current Voltage (VC, VCTCXO)	V	0		V_{DD}	Center Voltage: V_{DD}*50%
Pullability (VCTCXO)	ppm	±5.0		±12.0	See part numbering guide for options.
Linearity (VCTCXO)	%			10	
Output Load (CMOS)	pF			15	
Output Logic HIGH Level (V_{OH})	V	0.8*V_{DD}			
Output Logic LOW Level (V_{OL})	V			0.2*V_{DD}	
Rise (T_R) And Fall (T_F) Time	ns			5	
Symmetry (Duty Cycle)	%	40		60	
Start-Up Time	ms			3	
VC Input Impedance (VCTCXO)	kΩ	100			
Phase Noise (Typical) 10Hz Offset	dBc/Hz		-85		
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-115		
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-135		
Phase Noise (Typical) 10KHz Offset	dBc/Hz		-145		
Phase Noise (Typical) 100KHz Offset	dBc/Hz		-150		

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IRVINE, CA 92618

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SUNTSU

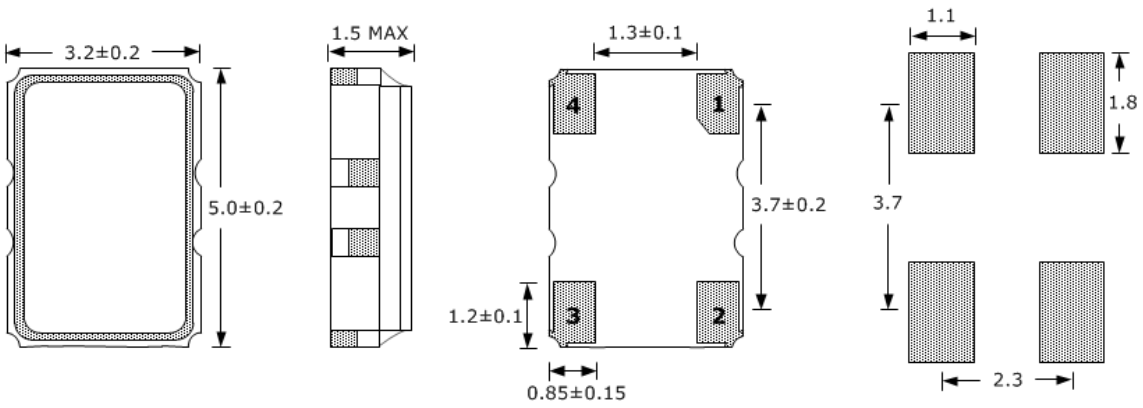
Ceramic SMT 4 Pad CMOS (VC)TCXO

STC53C Series

5.0mm x 3.2mm

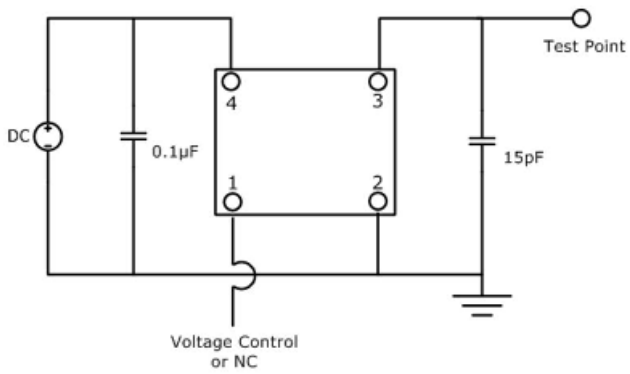
Outline Drawing & Land Pattern

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

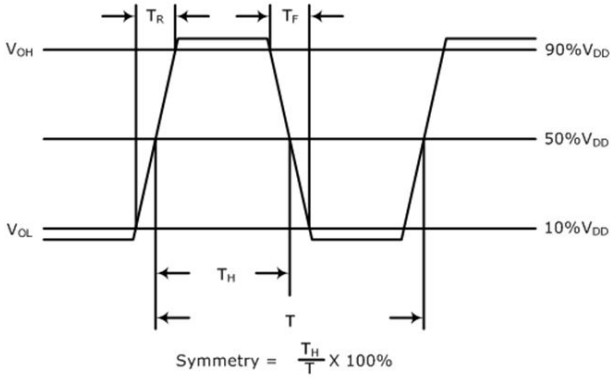


PIN	FUNCTION
1	V_C(VCTCXO) or N/C (TCXO)
2	GND
3	OUTPUT
4	V_{DD}

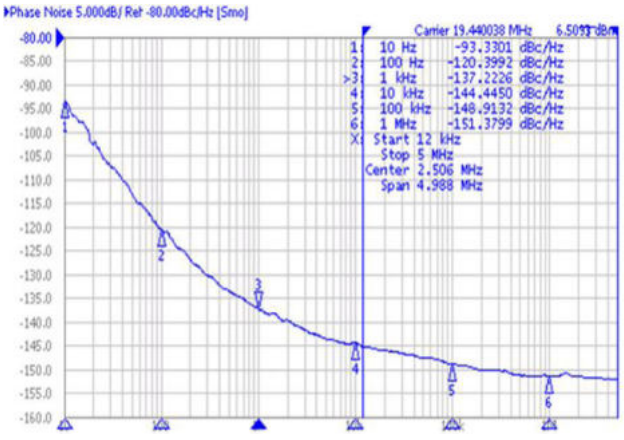
Test Circuit (CMOS)



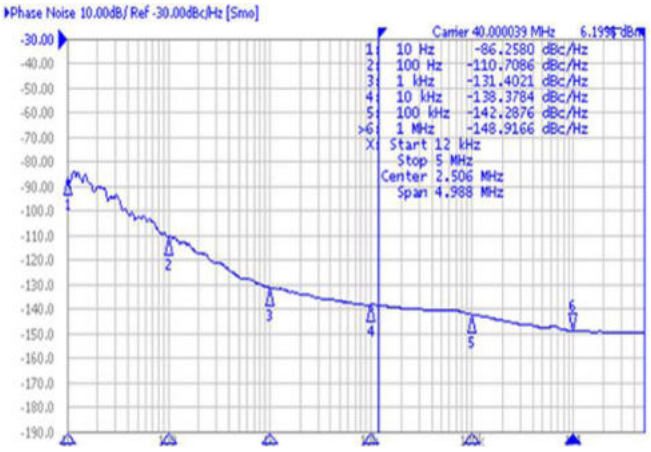
Waveform (CMOS)



Typical Phase Noise Performance (Measured By Agilent E5052A)



Frequency - 19.440MHz



Frequency - 40.000MHz

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IRVINE, CA 92618

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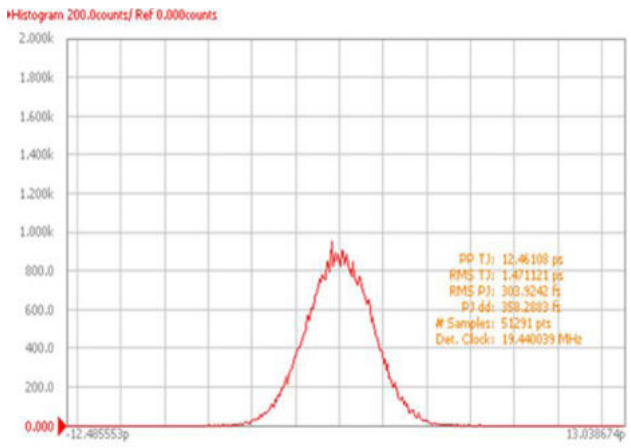
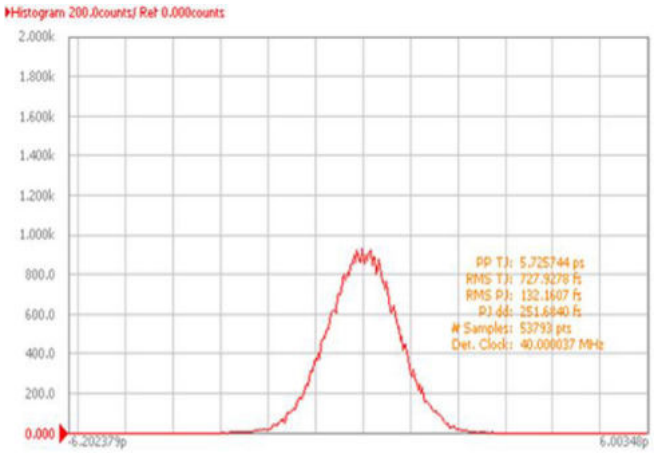
Typical Jitter Performance (Measured By Agilent E5052A)

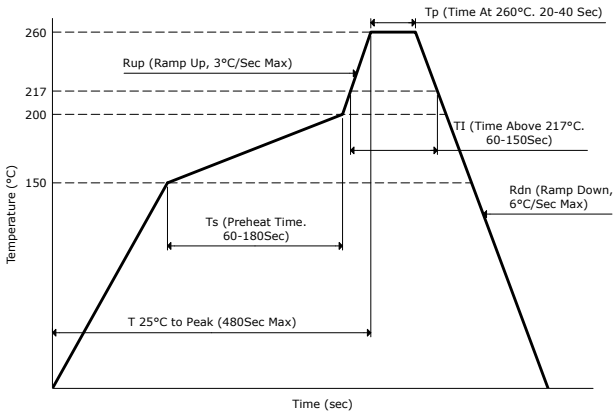


Frequency - 19.440MHz

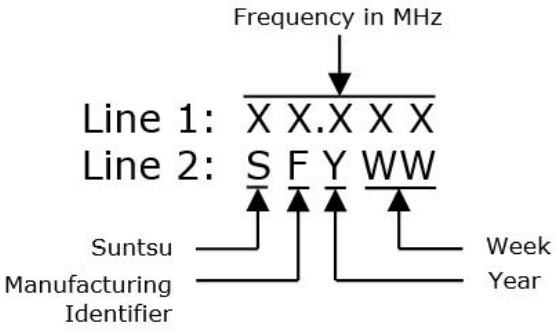


Frequency - 40.000MHz

Reflow Profile



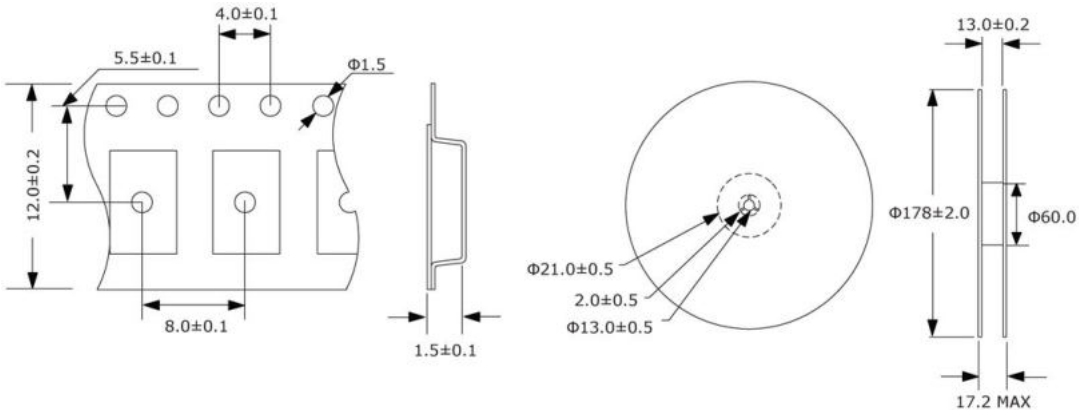
Part Marking



Tape And Reel Dimensions

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

3,000pcs/Reel



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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

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SUNTSU

Ceramic SMT 4 Pad Clipped Sinewave (VC)TCXO

STC53K Series

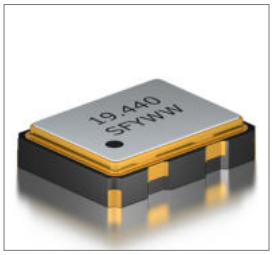
5.0mm x 3.2mm

Features

- ±1.0ppm (Frequency Stability) Available
- Clipped Sinewave
- (VC)TCXO
- Tape and Reel

Applications

- Base Stations
- IP Networking
- Cellular and Cordless Phones



Part Numbering Guide

STC 53 K 33 R 48 V E A - 19.440M

- **SUNTSU TCXO**
- **5.0mm x 3.2mm**
- **CLIPPED SINEWAVE**
- **SUPPLY VOLTAGE**
  - 25 : 2.5V±5%
  - 27 : 2.7V±5%
  - 30 : 3.0V±5%
  - 33 : 3.3V±5%
- **FREQUENCY STABILITY**
  - N : ±5.0ppm
  - O : ±2.5ppm
  - P : ±2.0ppm
  - Q : ±1.5ppm
  - R : ±1.0ppm
- **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
- **TCXO/VCTCXO**
  - BLANK : TCXO
  - V : VCTCXO
- **PULLABILITY**
  - BLANK : TCXO
  - E : ±12.00ppm
  - F : ±8.0ppm
  - G : ±5.0ppm
- **COMPENSATION**
  - BLANK : Digital
  - A : Analog
- **FREQUENCY**
  - MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	6		40	
Frequency Tolerance at +25°C	ppm	-1.5		+1.5	1 Hour after reflow
Freq. Stability vs. Op Temp.	ppm	-1.0		+1.0	See part numbering guide for options.
Freq. Stability vs. Supply Voltage	ppm	-0.3		+0.3	V_{DD}±5% change.
Freq. Stability vs. Load	ppm	-0.2		+0.2	±5% change
Freq. Stability vs. Aging	ppm	-1.0		+1.0	1 Year, ±3.1ppm for 10 Years
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-55		+125	
Supply Voltage (V_{DD})	V	3.135	3.3	3.465	See part numbering guide for options.
Current (I_{DD})	mA			2	
Control Current (VC, VCTCXO)	V	0		V_{DD}	Center Voltage : V_{DD}*50%
Pullability (VCTCXO)	ppm	±5.0		±12.0	See part numbering guide for options.
Linearity (VCTCXO)	%			10	
Output Load (Clipped Sinewave)	kΩ//pF			10//10	
Output Logic Levels	V_{P-P}	0.8			
Symmetry (Duty Cycle)	%	40	50	60	
Start-Up Time	ms			3	
VC Input Impedance (VCTCXO)	kΩ	100			
Phase Noise (Typical) 10Hz Offset	dBc/Hz		-85		
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-115		
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-135		
Phase Noise (Typical) 10KHz Offset	dBc/Hz		-145		
Phase Noise (Typical) 100KHz Offset	dBc/Hz		-150		

Suntsu Electronics, Inc.
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IRVINE, CA 92618

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SUNTSU

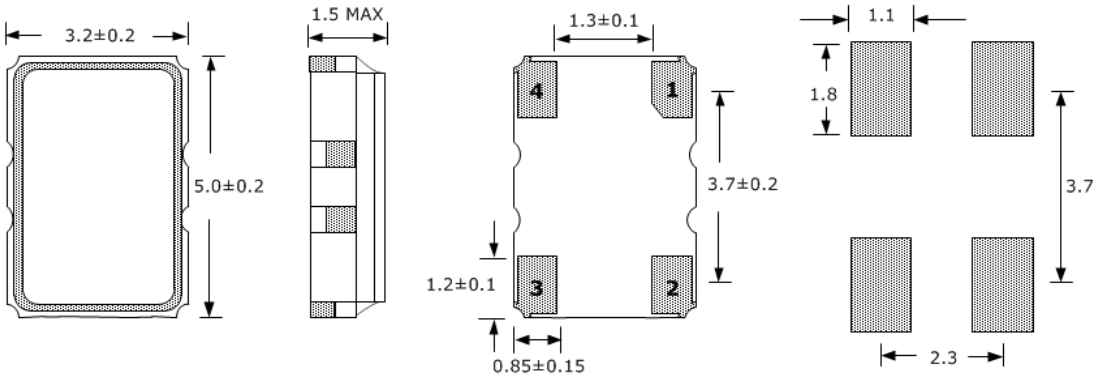
Ceramic SMT 4 Pad Clipped Sinewave (VC)TCXO

STC53K Series

5.0mm x 3.2mm

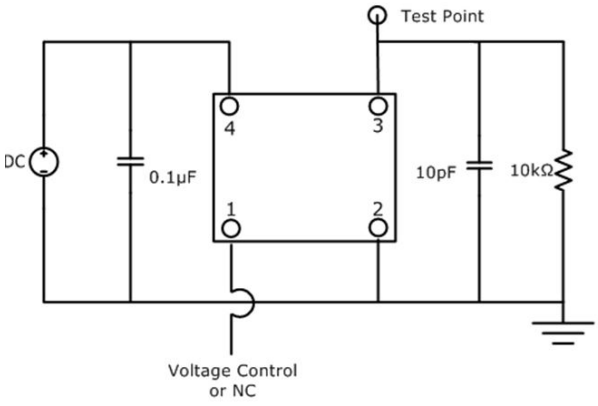
Outline Drawing

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

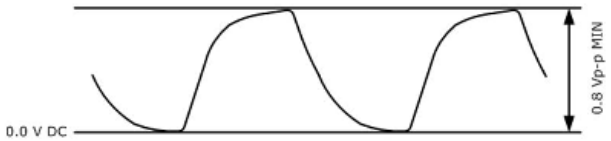


PIN	FUNCTION
1	V_C(VCTCXO) or NC (TCXO)
2	GND
3	OUTPUT
4	V_{DD}

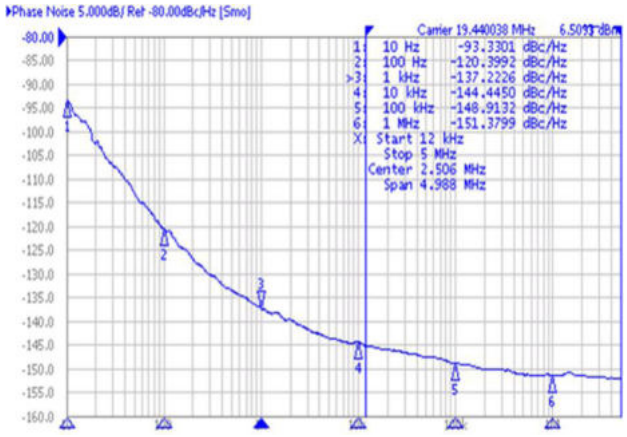
Test Circuit (Clipped Sinewave)



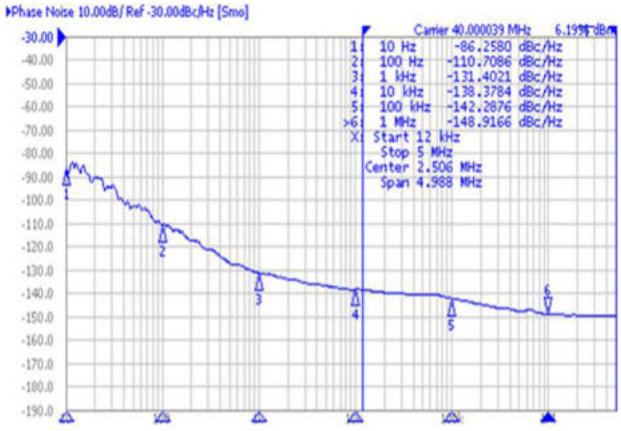
Waveform (Clipped Sinewave)



Typical Phase Noise (Measured By Agilent E5052A)



Frequency - 19.440MHz



Frequency - 40.000MHz

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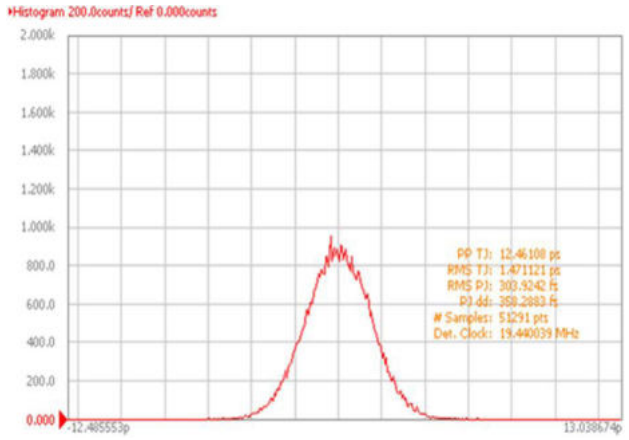
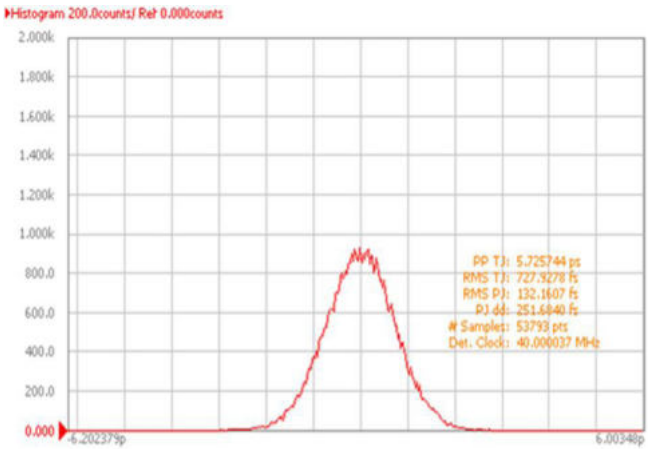
Jitter Performance (Measured By Agilent E5052A)



Frequency - 19.440MHz

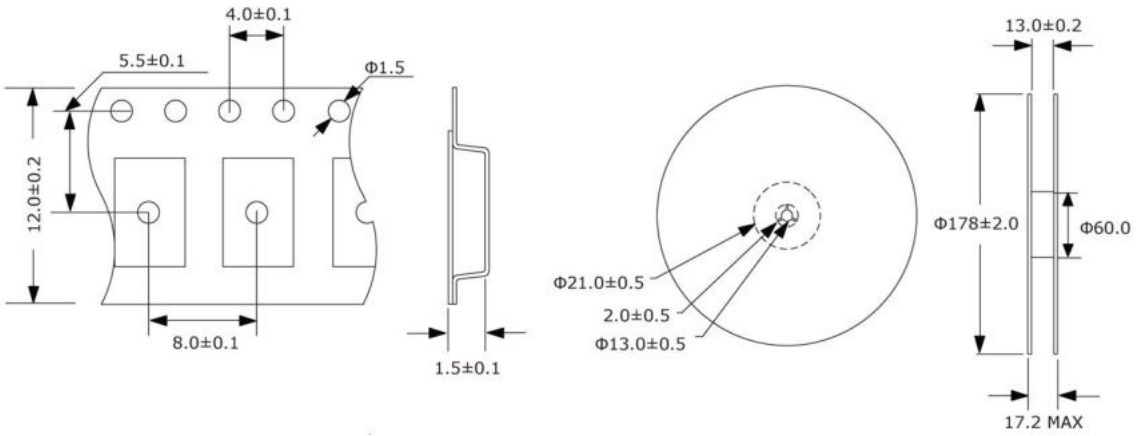


Frequency - 40.000MHz

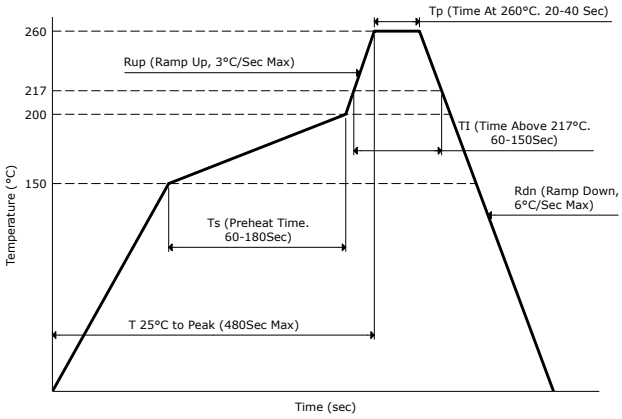
Tape And Reel Dimensions

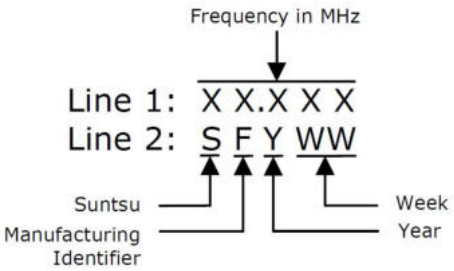
All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.

3,000pcs/Reel



Reflow Profile & Part Marking





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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

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SUNTSU

Ceramic SMT 10 Pad CMOS (VC)TCXO

STC75C Series

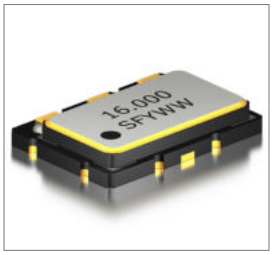
7.0mm x 5.0mm

Features

- ±0.5ppm (Frequency Stability) Available
- CMOS
- (VC)TCXO
- Tape and Reel

Applications

- GPS
- Mobile Communication Equipment
- Base Stations
- WLAN/WiMAX/WiFi



Part Numbering Guide

STC 75 C 33 R 48 V E - 16.000M

- **SUNTSU TCXO**
- **7.0mm x 5.0mm**
- **CMOS**
- **SUPPLY VOLTAGE**
  - 33 : 3.3V±5%
  - 50 : 5.0V±5%
- **FREQUENCY STABILITY**
  - N : ±5.0ppm
  - O : ±2.5ppm
  - P : ±2.0ppm
  - Q : ±1.5ppm
  - R : ±1.0ppm
  - F : ±0.5ppm
- **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
- **TCXO/VCTCXO**
  - BLANK : TCXO
  - V : VCTCXO
- **PULLABILITY**
  - BLANK : TCXO
  - E : ±12.0ppm
  - F : ±8.0ppm
  - G : ±5.0ppm
- **FREQUENCY**
  - MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	5		40	
Frequency Tolerance at +25°C	ppm	-2.0		+2.0	I hour after Reflow
Freq. Stability vs. Op Temp.	ppm	-0.5		+0.5	See part numbering guide for options.
Freq. Stability vs. Supply Voltage	ppm	-0.5		+0.5	V_{DD} ±5% Change
Freq. Stability vs. Load	ppm	-0.2		+0.2	±10% Change
Freq. Stability vs. Aging	ppm	-1.0		+1.0	1 Year
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-55		+125	
Supply Voltage (V_{DD})	V	3.135	3.3	3.465	See part numbering guide for options.
Current (I_{DD})	mA			6	
Current Voltage (VC, VCTCXO)	V	0		V_{DD}	Center Voltage: V_{DD}*50%
Pullability (VCTCXO)	ppm	±5.0		±12.0	See part numbering guide for options.
Linearity (VCTCXO)	%			10	
Output Load (CMOS)	pF			15	
Output Logic HIGH Level (V_{OH})	V	0.9*V_{DD}			
Output Logic LOW Level (V_{OL})	V			0.1*V_{DD}	
Rise (T_R) And Fall (T_F) Time	ns			5	
Symmetry (Duty Cycle)	%	45	50	55	
Tri-State Input Voltage (Enable)	V	0.7*V_{DD}			
Tri-State Input Voltage (Disable)	V			0.3*V_{DD}	
Start-Up Time	ms			2	
VC Input Impedance (VCTCXO)	kΩ	100			
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-120		
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-140		
Phase Noise (Typical) 10KHz Offset	dBc/Hz		-148		

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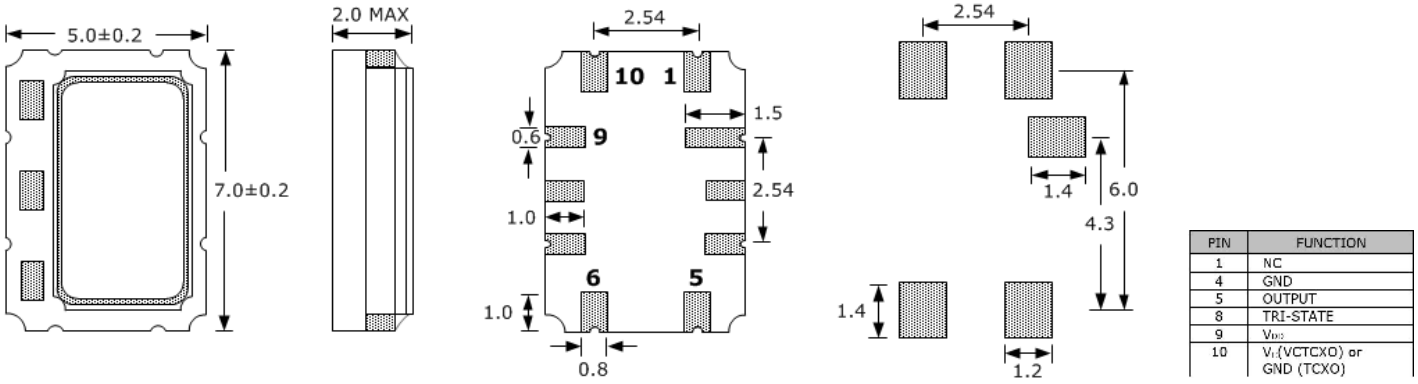
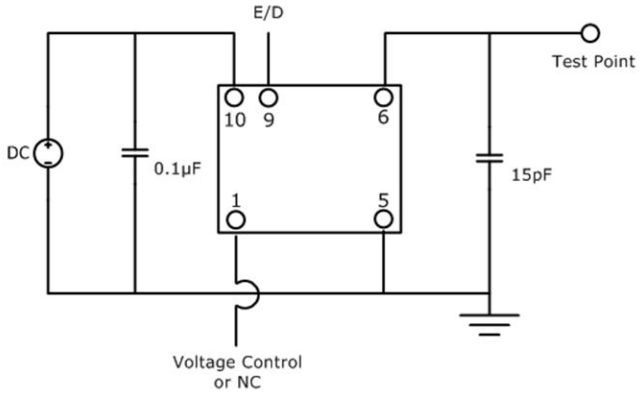
Outline Drawing & Land Pattern

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

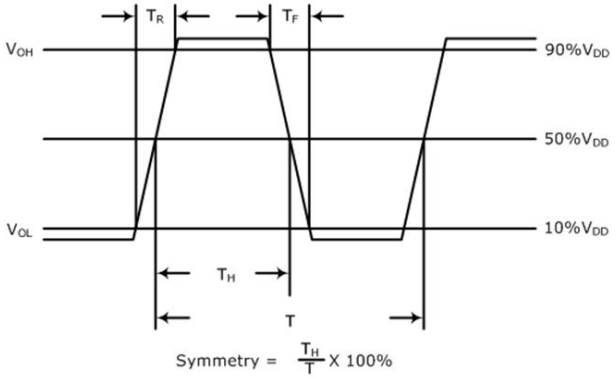


PIN	FUNCTION
1	NC
4	GND
5	OUTPUT
8	TRI-STATE
9	V_{DD}
10	V_C (VCTCXO) or GND (TCXO)

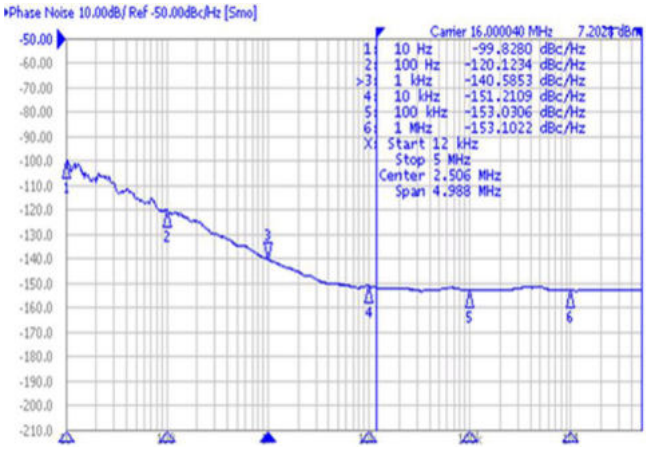
Test Circuit (CMOS)



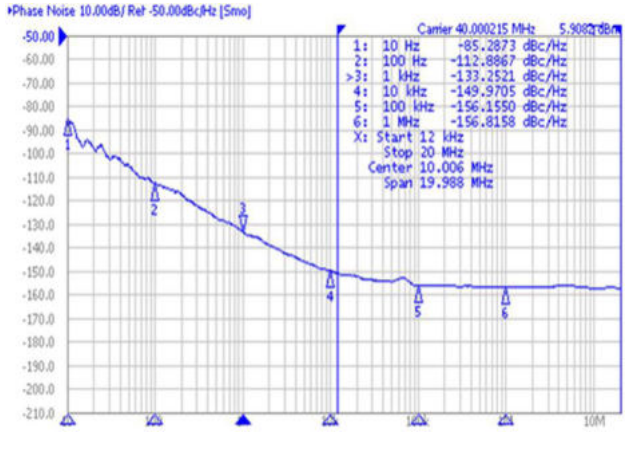
Waveform (CMOS)



Typical Phase Noise Performance (Measured By Agilent E5052A)



Frequency - 16.000MHz



Frequency - 40.000MHz

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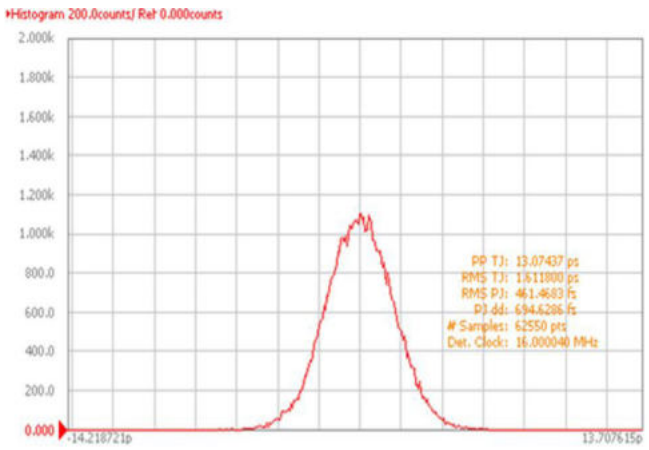
SUNTSU

Ceramic SMT 10 Pad CMOS (VC)TCXO

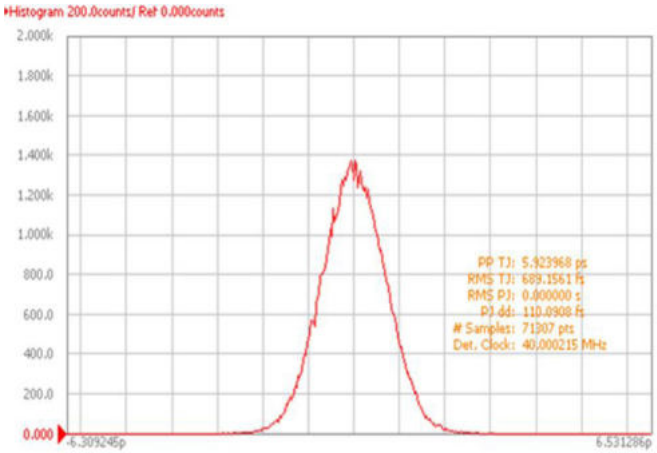
STC75C Series

7.0mm x 5.0mm

Typical Jitter Performance (Measured By Agilent E5052A)

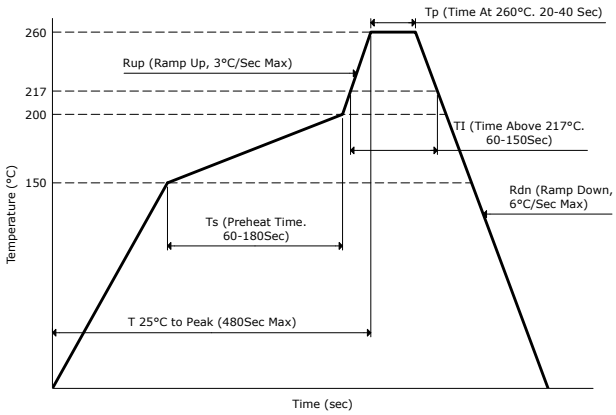


Frequency - 16.000MHz

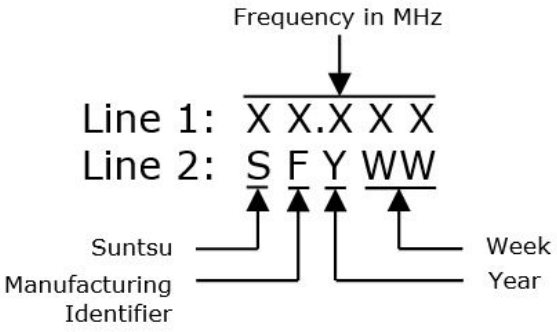


Frequency - 40.000MHz

Reflow Profile



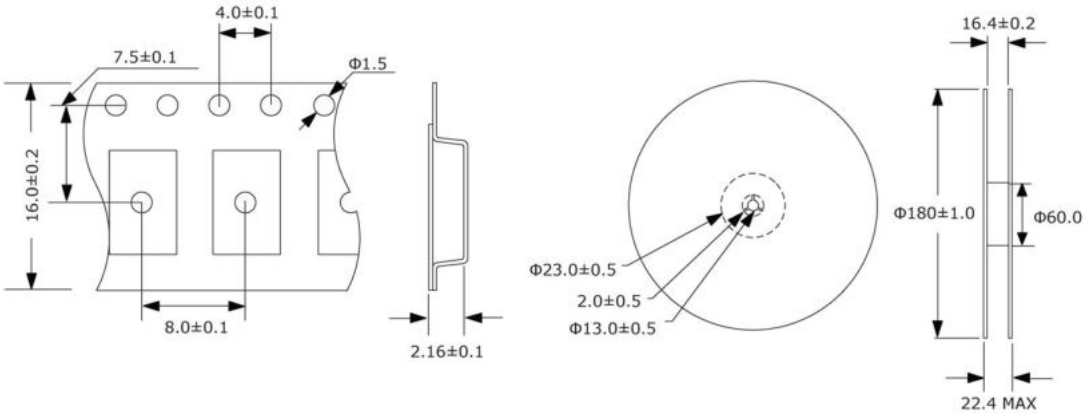
Part Marking



Tape And Reel Dimensions

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

1,000pcs/Reel



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Specifications are subject to change without notice.

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IRVINE, CA 92618

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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

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IRVINE, CA 92618

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SUNTSU

Ceramic SMT 10 Pad Clipped Sinewave (VC)TCXO

STC75K Series

7.0mm x 5.0mm

Features

- ±0.5ppm (Frequency Stability) Available
- Clipped Sinewave
- (VC)TCXO
- Tape and Reel

Applications

- GPS
- Mobile Communication Equipment
- Base Stations
- WLAN/WiMAX/WiFi

Part Numbering Guide

STC 75 K 33 R 48 V E - 16.000M

- **SUNTSU TCXO**
- **7.0mm x 5.0mm**
- **CLIPPED SINEWAVE**
- **SUPPLY VOLTAGE**
  - 30 : 3.0V±5%
  - 50 : 5.0V±5%
- **FREQUENCY STABILITY**
  - N : ±5.0ppm
  - O : ±2.5ppm
  - P : ±2.0ppm
  - Q : ±1.5ppm
  - R : ±1.0ppm
  - F : ±0.5ppm
- **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
- **TCXO/VCTCXO**
  - BLANK : TCXO
  - V : VCTCXO
- **PULLABILITY**
  - BLANK : TCXO
  - E : ±12.00ppm
  - F : ±8.0ppm
  - G : ±5.0ppm
- **FREQUENCY**
  - MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	5		40	
Frequency Tolerance at +25°C	ppm	-2.0		+2.0	1 Hour after reflow
Freq. Stability vs. Op Temp.	ppm	-0.5		+0.5	See part numbering guide for options.
Freq. Stability vs. Supply Voltage	ppm	-0.5		+0.5	V_{DD}±5% change.
Freq. Stability vs. Load	ppm	-0.2		+0.2	±10% change
Freq. Stability vs. Aging	ppm	-1.0		+1.0	1 Year
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-55		+125	
Supply Voltage (V_{DD})	V	3.135	3.3	3.465	See part numbering guide for options.
Current (I_{DD})	mA			2	For 3.3V And 5.0V
Control Current (VC, VCTCXO)	V	0		V_{DD}	Center Voltage : V_{DD}*50%
Pullability (VCTCXO)	ppm	±5.0		±12.0	See part numbering guide for options.
Linearity (VCTCXO)	%			10	
Output Load (Clipped Sinewave)	kΩ//pF			10//10	
Output Logic Levels	V_{P-P}	0.8			
Symmetry (Duty Cycle)	%	40	50	60	
Start-Up Time	ms			2	
VC Input Impedance (VCTCXO)	kΩ	100			
Tri-State Input Voltage - Enable	V	0.7*V_{DD}			No Connection
Tri-State Input Voltage - Disable	V			0.3*V_{DD}	
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-120		
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-140		
Phase Noise (Typical) 10KHz Offset	dBc/Hz		-148		

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SUNTSU

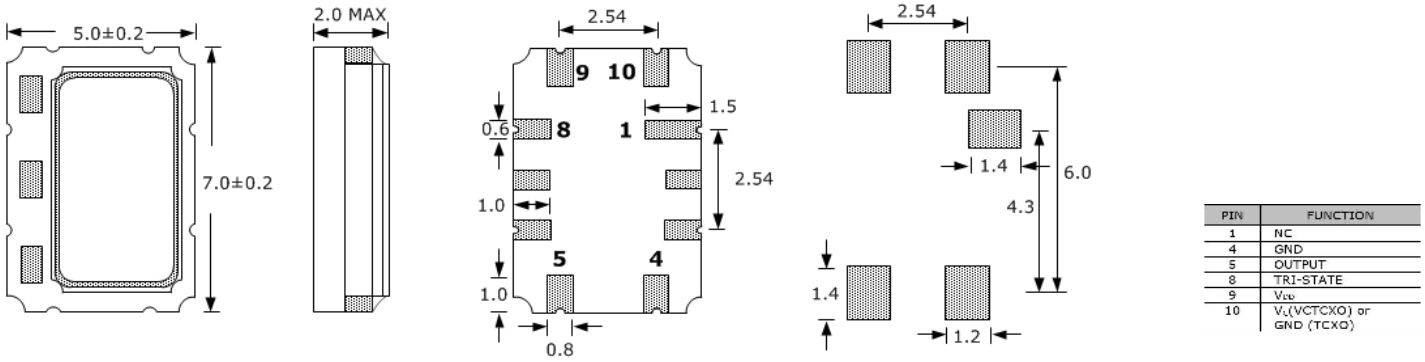
Ceramic SMT 10 Pad Clipped Sinewave (VC)TCXO

STC75K Series

7.0mm x 5.0mm

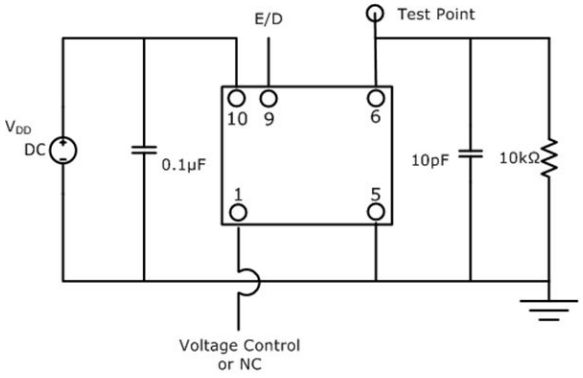
Outline Drawing

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

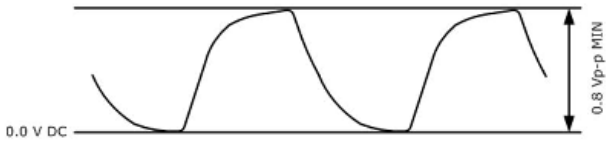


PIN	FUNCTION
1	NC
4	GND
5	OUTPUT
8	TRI-STATE
9	V_{DD}
10	V_C(VCTCXO) or GND (TCXO)

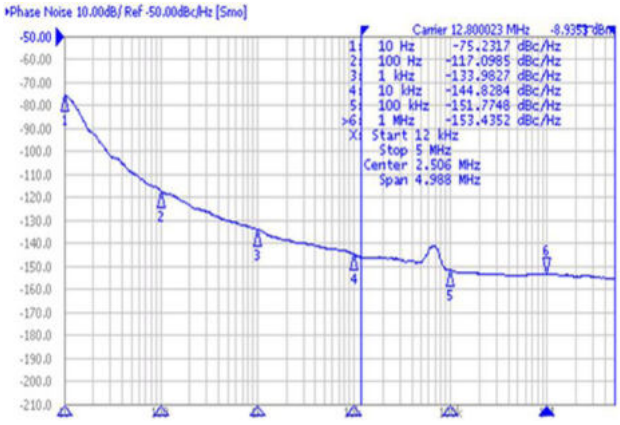
Test Circuit (Clipped Sinewave)



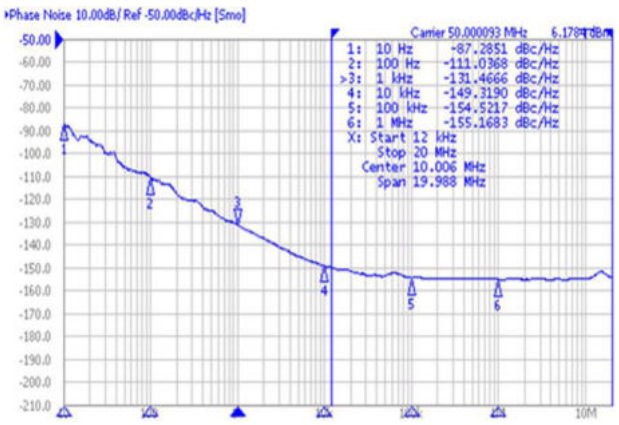
Waveform (Clipped Sinewave)



Typical Phase Noise (Measured By Agilent E5052A)



Frequency - 12.800MHz



Frequency - 50.000MHz

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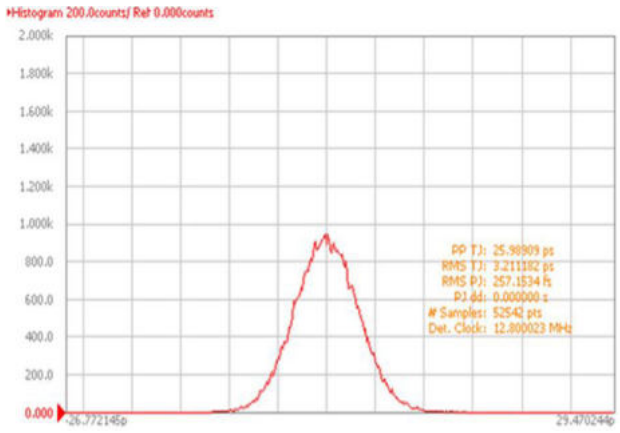
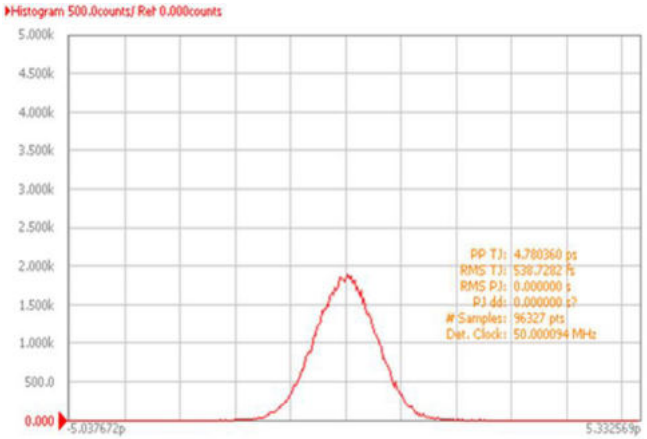
Jitter Performance (Measured By Agilent E5052A)



Frequency - 12.800MHz

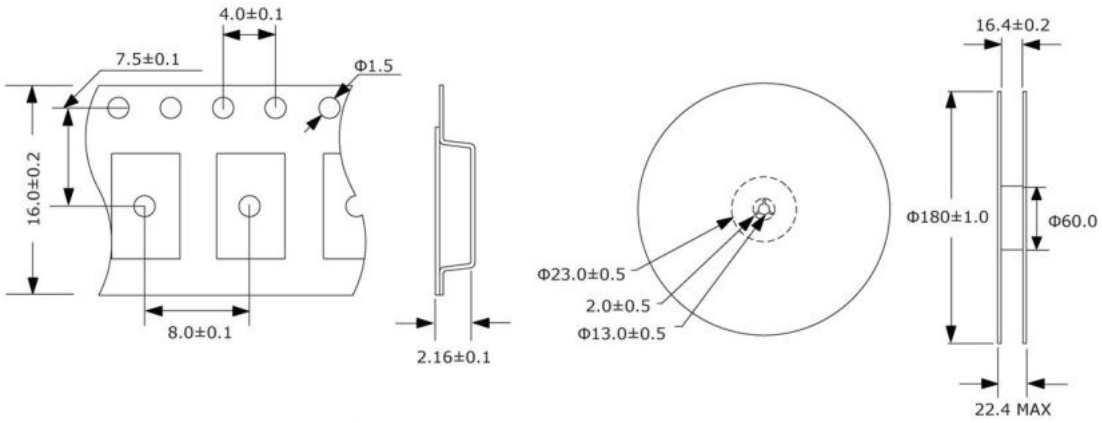


Frequency - 50.000MHz

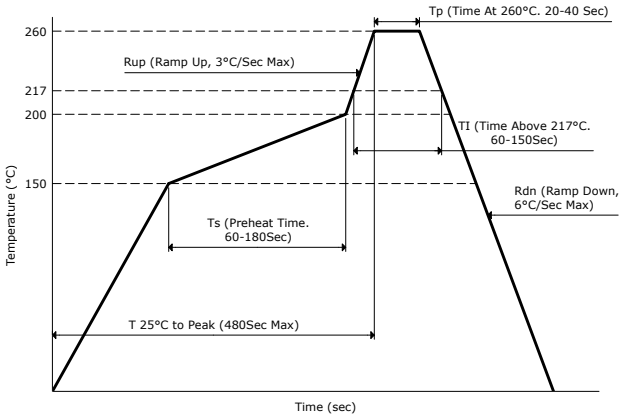
Tape And Reel Dimensions

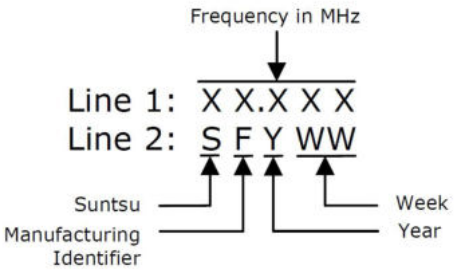
All dimensions are in millimeters (mm) unless otherwise noted. Drawings are not to scale.

1,000pcs/Reel



Reflow Profile & Part Marking





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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

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SUNTSU

Metal Full Size Dip CMOS (VC)TCXO

STCFSC Series

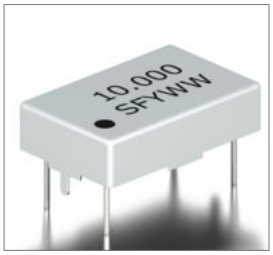
18.3mm x 11.7mm

Features

- ±1.0ppm (Frequency Stability) Available
- CMOS
- (VC)TCXO

Applications

- Communication equipment
- Base Station
- FAX



Part Numbering Guide

STC FS C 33 R 48 V E - 10.000M

- **SUNTSU TCXO**
- **FULL SIZE**
- **CMOS**
- **SUPPLY VOLTAGE**
  - 33 : 3.3V±5%
  - 50 : 5.0V±5%
- **FREQUENCY STABILITY**
  - N : ±5.0ppm
  - O : ±2.5ppm
  - P : ±2.0ppm
  - Q : ±1.5ppm
  - R : ±1.0ppm
- **OPERATING TEMPERATURE RANGE**
  - 07 : -0°C - +70°C
  - 16 : -10°C - +60°C
  - 17 : -10°C - +70°C
  - 27 : -20°C - +70°C
  - 37 : -30°C - +75°C
  - 38 : -30°C - +85°C
  - 48 : -40°C - +70°C
- **TCXO/VCTCXO**
  - BLANK : TCXO
  - V : VCTCXO
- **PULLABILITY**
  - BLANK : TCXO
  - D : ±20.0ppm
  - E : ±12.0ppm
  - G : ±5.0ppm
- **FREQUENCY**
  - MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	1		250	~160MHz at 5.0V
Frequency Tolerance at +25°C	ppm	-1.5		+1.5	
Freq. Stability vs. Op Temp.	ppm	-1.0		+1.0	See part numbering guide for options.
Freq. Stability vs. Supply Voltage	ppm	-0.3		+0.3	V_{DD} ±5% Change
Freq. Stability vs. Load	ppm	-0.2		+0.2	±10% Change
Freq. Stability vs. Aging/Year	ppm	-1.0		1.0	1 year
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-55		+125	
Supply Voltage (V_{DD}) - 3.3V Option	V	3.135	3.3	3.465	
Supply Voltage (V_{DD}) - 5.0V Option	V	4.750	5.0	5.250	
Current (I_{DD})	mA			50	
Current (VC, VCTCXO) - 3.3V Option	V	0.3		3.0	
Current (VC, VCTCXO) - 5.0V Option	V	0.5		4.5	
Pullability (VCTCXO)	PPM	±5.0		±12.0	See part numbering guide for options.
Linearity (VCTCXO)	%			10	
Output Load (CMOS)	pF			15	
Output Logic Level - High (V_{OH})	V	0.9*V_{DD}			
Output Logic Level - Low (V_{OL})	V			0.1*V_{DD}	
Rise (T_R) And Fall (T_F) Time	ns			5	
Symmetry (Duty Cycle)	%	40	50	60	
Start-Up Time	ms			3	
Frequency Adjustment	ppm	-3		+3	
Phase Noise (Typical) 10Hz Offset	dBc/Hz		-80		
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-120		
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-135		
Phase Noise (Typical) 10KHz Offset	dBc/Hz		-140		
Phase Noise (Typical) 100KHz Offset	dBc/Hz		-145		

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Metal Full Size Dip CMOS (VC)TCXO

STCFSC Series

18.3mm x 11.7mm

Outline Drawing & Part Marking

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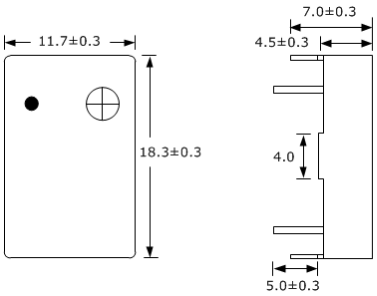
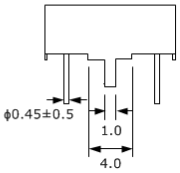
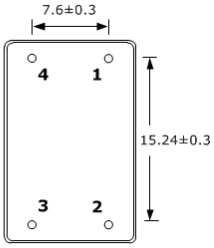
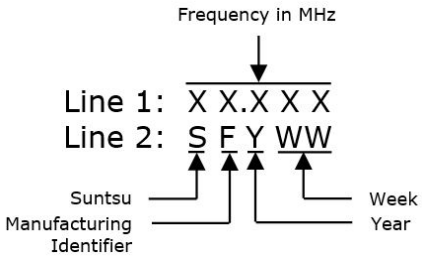


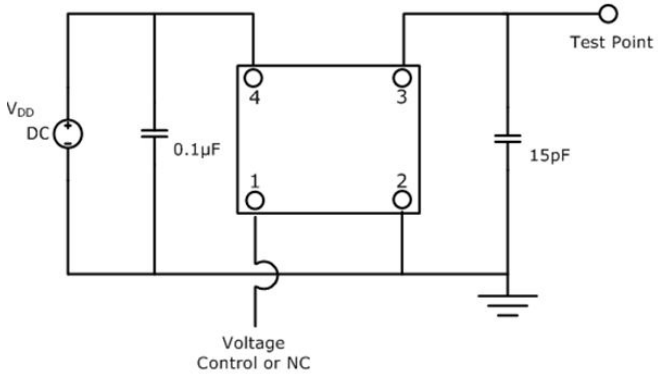




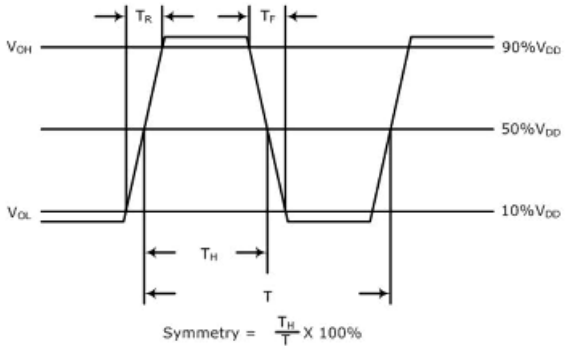
PIN	FUNCTION
1	V_C (VCTCXO) or NC (TCXO)
2	GND
3	OUTPUT
4	V_{DD}



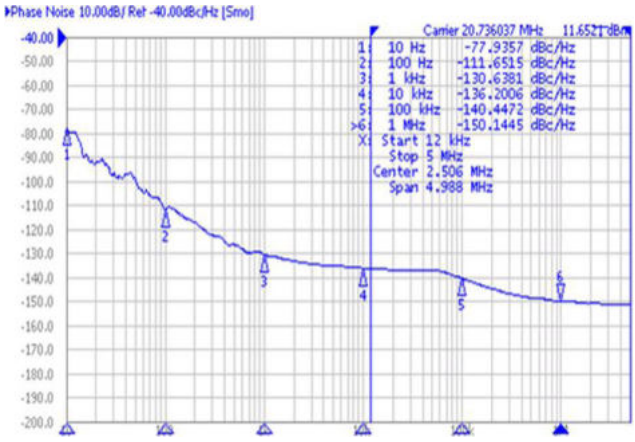
Test Circuit (CMOS)



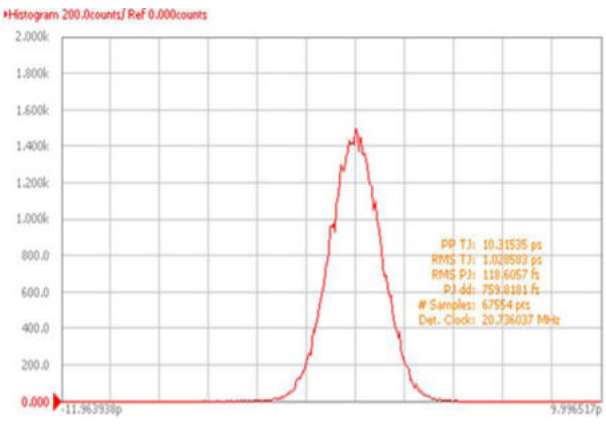
Waveform (CMOS)



Typical Phase Noise And Jitter Performance (Measured By Agilent E5052A)



Frequency - 20.736MHz



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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

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SUNTSU

Metal Full Size Dip Clipped Sinewave (VC)TCXO

STCFSK Series

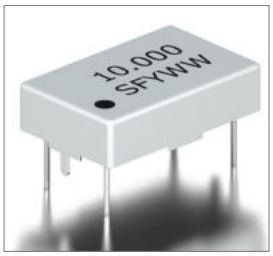
18.3mm x 11.7mm

Features

- ±1.0ppm (Frequency Stability) Available
- Clipped Sinewave
- (VC)TCXO

Applications

- Communication equipment
- Base Station
- FAX



Part Numbering Guide

STC FS K 33 R 48 V E - 10.000M

- **SUNTSU TCXO**
- **FULL SIZE**
- **CLIPPED SINEWAVE**
- **SUPPLY VOLTAGE**
  - 33 : 3.3V±5%
  - 50 : 5.0V±5%
- **FREQUENCY STABILITY**
  - N : ±5.0ppm
  - O : ±2.5ppm
  - P : ±2.0ppm
  - Q : ±1.5ppm
  - R : ±1.0ppm
- **OPERATING TEMPERATURE RANGE**
  - 07 : -0°C - +70°C
  - 16 : -10°C - +60°C
  - 17 : -10°C - +70°C
  - 27 : -20°C - +70°C
  - 37 : -30°C - +75°C
  - 38 : -30°C - +85°C
  - 48 : -40°C - +70°C
- **TCXO/VCTCXO**
  - BLANK : TCXO
  - V : VCTCXO
- **PULLABILITY**
  - BLANK : TCXO
  - D : ±20.0ppm
  - E : ±12.00ppm
  - G : ±5.0ppm
- **FREQUENCY**
  - MHz

RoHS COMPLIANT

Cage Code: 4GUT4

To customize your parameters contact a Suntsu representative.

Electrical Parameters	Units	Minimum	Typical	Maximum	Remarks
Frequency Range	MHz	6.0		200	
Frequency Tolerance at +25°C	ppm	-1.5		+1.5	
Freq. Stability vs. Op Temp.	ppm	-1.0		+1.0	See part numbering guide for options.
Freq. Stability vs. Supply Voltage	ppm	-0.3		+0.3	V_{DD}±5% change.
Freq. Stability vs. Load	ppm	-0.2		+0.2	±10% change
Freq. Stability vs. Aging	ppm	-1.0		+1.0	1 Year, ±3.1ppm for 10 Years
Operating Temperature	°C	-40		+85	See part numbering guide for options.
Storage Temperature	°C	-55		+125	
Supply Voltage (V_{DD}) - 3.3V Option	V	3.135	3.3	3.465	
Supply Voltage (V_{DD}) - 5.0V Option	V	4.750	5.0	5.250	
Current (I_{DD})	mA			50	
Current (VC, VCTCXO) - 3.3V Option	V	0.3		3.0	
Current (VC, VCTCXO) - 5.0V Option	V	0.5		4.5	
Pullability (VCTCXO)	ppm	±5.0		±12.0	See part numbering guide for options.
Linearity (VCTCXO)	%			10	
Output Load (Clipped Sinewave)	kΩ//pF			10//10	
Output Logic Levels	V_{P-P}	0.8			
Symmetry (Duty Cycle)	%	40	50	60	
Start-Up Time	ms			3	
Frequency Adjustment	ppm	3			
Phase Noise (Typical) 10Hz Offset	dBc/Hz		-80		
Phase Noise (Typical) 100Hz Offset	dBc/Hz		-120		
Phase Noise (Typical) 1KHz Offset	dBc/Hz		-135		
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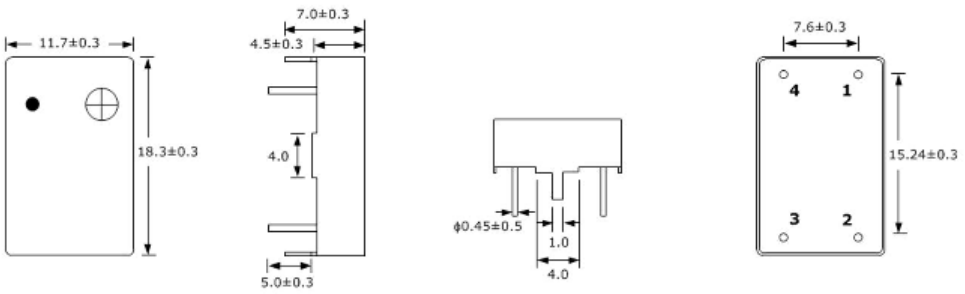
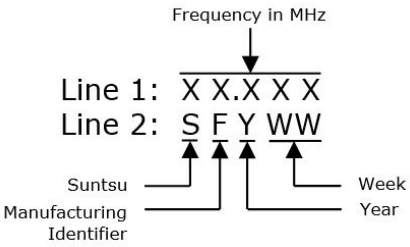
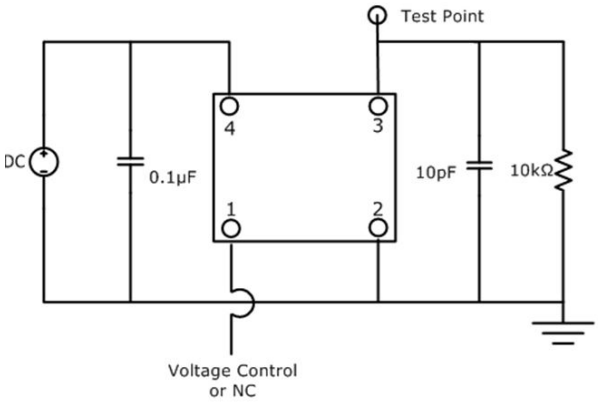


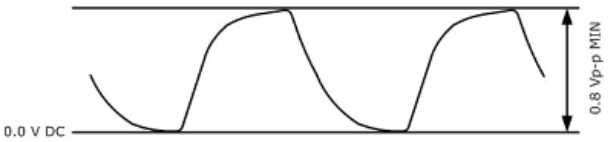
PIN	FUNCTION
1	V_c(VCTCXO) or NC (TCXO)
2	GND
3	OUTPUT
4	Vcc



Test Circuit (Clipped Sinewave)



Waveform (Clipped Sinewave)



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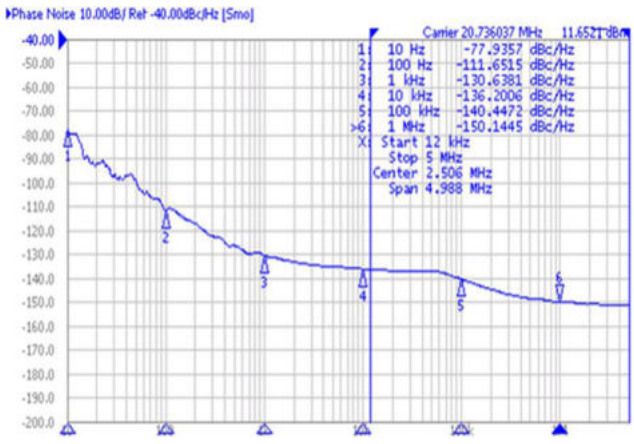
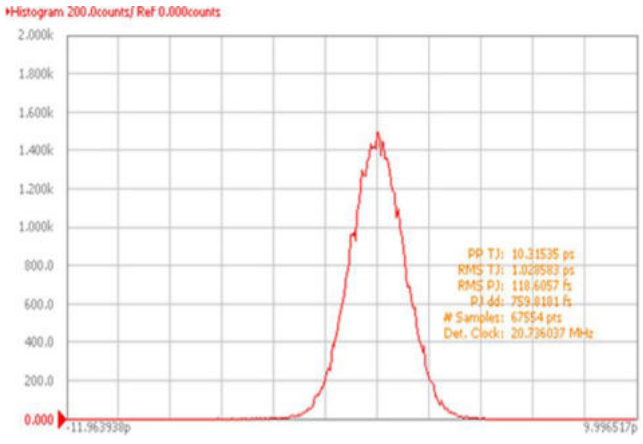


Frequency - 20.736MHz



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