# **SaRonix**

## TCXO / TCVCXO

### 3 & 5V, SMD

### Technical Data

#### S6700 / S5700 Series



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#### Description

A surface mountable, digitally temperature compensated crystal oscillator for both 3 and 5Volt operations. The very small size, extremely low profile and low power consumption of this TCXO/ TCVCXO makes it ideally suited for portable, wireless applications such as cellular and cordless telephones. The hermetically sealed ceramic package is fully compatible with standard surface mounting processes.

#### **Applications & Features**

- Cellular Telephones (GSM, PDC, TDMA, CDMA)
- GPS Devices
- Mobile and Portable Radio/Telephone
- Communications Transceivers
- Cordless Telephones
- 3 and 5Volt operations
- Very low profile, 2mm max height, rugged, package
- Hermetically sealed packages are compatible with standard board washing techniques
- Available on tape & reel; 18mm tape, 500pcs per reel

| Frequencies:   | 12.60, 12.80, 12.96, 13.00, 14.30, 14.40, 16.80, 19.20, 19.68 MHz   |
|--|---|
| Frequency Stability:   | <ul> <li>vs. temperature: ±2.5 or ±5.0 ppm max</li> <li>vs. supply voltage: ±0.3 ppm (5% change)</li> <li>vs. aging: ±1 ppm (1 Year @ +40°C)</li> <li>vs. load: ±0.3 ppm (CL: 10 pF ±10%)</li> <li>vs. hysteresis: ±0.2 ppm (temp change 1°C per minute)</li> <li>vs. perturbations: 0.5 ppm peak-to-peak max</li> <li>vs. temp cycle: ±0.1 ppm (10 cycles, min to max storage temp)</li> </ul> |
| Temperature Range:   |   |
| Operating:<br>Storage:   | -30 to +80°C or -20 to +75°C<br>-40 to +85°C  |
| Supply Voltage:  | 3V ±5% or 5V ±10%   |
| Supply Current:  | 2.0mA max   |
| Output Level:  | 1.0V peak-to-peak min, Clipped Sinewave   |
| Output Load:   | 10KΩ // 10pF  |
| Frequency Adjustment:<br>Frequency Control Range:<br>Control V Input Impedance:<br>Modulation Bandwidth:<br>Transfer Function:   | $\pm 5$ ppm min to $\pm 12$ ppm max, 0.5 to 2.5V<br>1M $\Omega$ min, 2M $\Omega$ typ<br>1 kHz min<br>Frequency Increases when Control Voltage Increases   |
| r nase moise:  | -70 dBc/Hz max @ 10Hz<br>-100 dBc/Hz max @ 100Hz<br>-118 dBc/Hz max @ 1kHz<br>-125 dBc/Hz max @ 10kHz<br>-130 dBc/Hz max @ 100kHz   |
| Mechanical:<br>Shock:<br>Solderability:<br>Vibration:<br>Solvent Resistance:<br>Resistance to Soldering Heat:<br>Environmental:<br>Gross Leak Test:<br>Fine Leak Test:<br>Thermal Shock:<br>Moisture Resistance: | MIL-STD-883, Method 2002, Condition B<br>MIL-STD-883, Method 2003<br>MIL-STD-883, Method 2007, Condition A<br>MIL-STD-202, Method 215<br>MIL-STD-202, Method 210, Condition I or J<br>MIL-STD-883, Method 1014, Condition C<br>MIL-STD-883, Method 1014, Condition A2<br>MIL-STD-883, Method 1011, Condition A<br>MIL-STD-883, Method 1004  |
| Part Numbering Guide   |   |
| SaRonix<br>Supply Voltage<br>6 = 3V<br>5 = 5V<br>Package Size<br>$7 = 7 \times 9 \times 2 \text{ mm}$<br>Temperature Stability   | 6       7       6       9       S       S       V       –       19.6800       (T)   |
| 6 = ±2.5 ppm max<br>8 = ±5.0 ppm max<br><b>Operating Tem</b>   | Derature S = Clipped Sinewave<br>Package Type<br>Surface Mount. Ceramic 4 pad   |



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4 = -20 to +75°C

9 = -30 to +80°C



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#### **Package Details Typical Frequency vs. Temperature Characteristics** 10 8 7.0±0.2 6 .276±.008 4 2 mdd 0 9.0±0.2 .354±.008 -2 -4 -6 Pad 1 Pad 2 -8 -10 Pad 4 Pad 3 -30 -20 -10 0 10 20 30 40 50 60 70 80 Temperature - °C 5.08±0.2 .200±.007 Solder Reflow Guide $\frac{2.0}{.078}$ max в пара п. 250 Reflow 225°C max Temperature - °C Pad Functions: 8°C/sec max-200 Pad 1: Control Voltage (NC on TCXO) Pad 3: Output Pad 2: GND Pad 4: Vcc Preheat 150 ±10°C Cooling 1 to 5°C/sec 150 Marking Format \* Voltage, Frequency Stab. and Temp. Range 1 = 3V, 2.5ppm, ±5 to 12ppm FC, -30 to +80°C 2 = 3V, 2.5ppm, ±5 to 12ppm FC, -20 to +75°C 4°C/sec max a = 3V, 6.0pm, ±5 to 12ppm FC, -30 to +80°C 4 = 3V, 5.0ppm, ±5 to 12ppm FC, -20 to +75°C 5 = 5V, 2.5ppm, ±5 to 12ppm FC, -30 to +80°C 6 = 5V, 2.5ppm, ±5 to 12ppm FC, -20 to +75°C $7=5V,\,5.0ppm,\,\pm 5\,$ to 12ppm FC, -30 to +80°C Time 1.5 ~ 2 minutes 10 sec max 8 = 5V, 5.0ppm, ±5 to 12ppm FC, -20 to +75°C **Test Circuit** ST X YY WW Date Code 19.4400 Vcc < POINT #4 #3 Denotes Pin 1 #1 #2 \* Exact location of items may vary 0.01µF = $\leq 10K\Omega + CL**$ **Recommended Land Pattern** 0.01µF $\leq 10 \text{K}\Omega$ 5.08 0.20 GND ← Control Voltage $\frac{6.2}{0.24}$ \*\*CL = 10pF (Including probe and jig capacitance) 1.4 0.05 All specifications are subject to change without notice.

Scale: None (Dimensions in  $\frac{1}{1}$  inches

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