MEMS Timing Solutions for Automotive

- Best-in-class performance in harsh environments
- Higher quality and reliability, AEC-Q100 compliant
- Programmable, instant samples, short lead time

A small part from SiTime runs a big part of your world
MEMS Timing Improves Automotive Systems

**Automotive Camera**
- ±20 ppm over -55 to 125°C
- Small 2016 footprint
- EMI reduction up to 17 dB
- MTBF > 1 B hours
- SiT8924/25 | SiT9025 Oscillators

**Self-Driving Computer**
- Best-in-class jitter
- Up to 125°C temperature
- Any frequency from 1 to 725 MHz
- MTBF > 1 B hours
- SiT9386/87 | SiT8924/25 | SiT2024/25 Oscillators

**Infotainment**
- EMI reduction up to 17 dB
- Reliable startup in cold temps
- Higher reliability > 1 B hours MTBF
- SiT8924/25 | SiT9025 Oscillators

**Active Suspension**
- More robust
- Higher reliability > 1 B hours MTBF
- Leaded & wettable flank packages
- SiT8934/35 | SiT2024/25 Oscillators

**Electrical Control Unit (ECU)**
- ±20 ppm over -55 to 125°C
- Any frequency from 1 to 150 MHz
- Higher reliability > 1 B hours MTBF
- SiT8924 | SiT9825 Oscillators

**Wireless Charger**
- Short lead time even for custom frequencies
- Flexible capacity for quick ramp up
- SiT8924 | SiT2024 | SiT9025 Oscillators

**Automotive Ethernet**
- Best-in-class jitter
- ±20 ppm over -40 to 105°C
- Resistant to shock, vibration and thermal gradients
- SiT9386 | SiT9387 | SiT8924 Oscillators

**Precision GNSS**
- Maintains satellite lock under shock, vibration and thermal gradients
- SiT5186/87 | SiT5386/87 Super-TCXOs
Higher Quality

- SiTime offers MTBF (Millions of Hours) of up to 1960.
- Quartz 1 and Quartz 2 have MTBF values of 38 and 28, respectively.
- SiTime is 50x-500x Better in DPPM compared to Quartz.

Higher Reliability

- MTBF (Millions of Hours) for SiTime is significantly higher than Quartz.
- SiTime is up to 50x Better.

Tighter Stability

- Frequency Offset (ppm) for SiTime is 2.5x Better than Quartz.
- Temperature range from -50°C to 130°C.
- SiTime is 2.5x Better at different temperature conditions.

Better EMI Reduction

- Spread Spectrum shows 17 dB EMI reduction for SiTime.
- No Spread for SiTime versus ±2% Center Spread for Quartz.

Immune to Vibration

- Sine Vibration Sensitivity (ppb/g) for SiTime is up to 100x Better.
- Vibration Frequency range from 15 Hz to 1500 Hz.
- SiTime up to 100x Better.

Better Noise Rejection

- Peak-to-Peak Jitter (ps/mV) for SiTime is up to 20x Better.
- Injected Noise Frequency range from 20K Hz to 20M Hz.
- SiTime up to 20x Better.
### QFN Oscillators

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Output Frequency</th>
<th>Temperature Range (°C)</th>
<th>Frequency Stability (ppm)</th>
<th>Supply Voltage (V)</th>
<th>Packages (mm x mm)</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>SiT8924</td>
<td>1 to 110 MHz</td>
<td>-40 to +85, -40 to +105, -40 to +125, -55 to +125</td>
<td>±20, ±25, ±30, ±50</td>
<td>1.8, 2.5 to 3.3</td>
<td>QFN: 2.0 x 1.6, 2.5 x 2.0, 3.2 x 2.5, 5.0 x 3.2, 7.0 x 5.0</td>
<td>LVCMOS, 8 output drive strength options, Field Programmable</td>
</tr>
<tr>
<td>SiT8925</td>
<td>115.2 to 137 MHz</td>
<td>-40 to +85, -40 to +105, -40 to +125, -55 to +125</td>
<td>±20, ±25, ±30, ±50</td>
<td>1.8, 2.5 to 3.3</td>
<td>SOT23-5: 2.9 x 2.8</td>
<td>LVCMOS, 8 output drive strength options, Field Programmable</td>
</tr>
</tbody>
</table>

### SOT23 Oscillators

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Output Frequency</th>
<th>Temperature Range (°C)</th>
<th>Frequency Stability (ppm)</th>
<th>Supply Voltage (V)</th>
<th>Packages (mm x mm)</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>SiT2024</td>
<td>1 to 110 MHz</td>
<td>-40 to +85, -40 to +105, -40 to +125, -55 to +125</td>
<td>±20, ±25, ±30, ±50</td>
<td>1.8, 2.5 to 3.3</td>
<td>SOT23-5: 2.9 x 2.8</td>
<td>LVCMOS, 8 output drive strength options, Field Programmable</td>
</tr>
</tbody>
</table>

### Differential Oscillators

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Output Frequency</th>
<th>Temperature Range (°C)</th>
<th>Frequency Stability (ppm)</th>
<th>Supply Voltage (V)</th>
<th>Packages (mm x mm)</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>SiT9386</td>
<td>1 to 220 MHz</td>
<td>-40 to +85, -40 to +105, -40 to +125, -55 to +125</td>
<td>±10, ±20, ±25, ±50</td>
<td>2.5, 2.8, 3.0, 3.3</td>
<td>QFN with wettable flank[2]: 3.2 x 2.5, 7.0 x 5.0</td>
<td>LVPECL, LVDS, HCSL, 0.23 ps rms phase jitter</td>
</tr>
<tr>
<td>SiT9387</td>
<td>220 to 725 MHz</td>
<td>-40 to +85, -40 to +105, -40 to +125, -55 to +125</td>
<td>±20, ±25, ±30, ±50</td>
<td>1.8, 2.5 to 3.3</td>
<td>QFN: 2.0 x 1.6, 2.5 x 2.0, 3.2 x 2.5</td>
<td>LVCMOS, 40 spread options, up to ±2.0%, down to -4.0%, Smallest, Field Programmable</td>
</tr>
</tbody>
</table>

### EMI Reduction Oscillators

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Output Frequency</th>
<th>Temperature Range (°C)</th>
<th>Frequency Stability (ppm)</th>
<th>Supply Voltage (V)</th>
<th>Packages (mm x mm)</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>SiT9025</td>
<td>1 to 150 MHz</td>
<td>-40 to +85, -40 to +105, -40 to +125, -55 to +125</td>
<td>±20, ±25, ±50</td>
<td>1.8, 2.5 to 3.3</td>
<td>QFN: 2.0 x 1.6, 2.5 x 2.0, 3.2 x 2.5</td>
<td>BVCMOS, 40 spread options, up to ±2.0%, down to -4.0%, Smallest, Field Programmable</td>
</tr>
</tbody>
</table>

### TCXO/VCTCXO/DCTCXO

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Output Frequency</th>
<th>Temperature Range (°C)</th>
<th>Frequency Stability (ppm)</th>
<th>Supply Voltage (V)</th>
<th>Packages (mm x mm)</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>SiT5186</td>
<td>1 to 220 MHz</td>
<td>-40 to +85, -40 to +105, -40 to +125, -55 to +125</td>
<td>±0.5, ±1, ±2.5</td>
<td>2.5, 2.8, 3.0, 3.3</td>
<td>SMD: 5.0 x 3.2</td>
<td>LVCMOS, Clipped Sinewave, I2C programmable, 1 ppb/°C slope, Field Programmable</td>
</tr>
<tr>
<td>SiT5187</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SiT5386</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SiT5387</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### 32 kHz Oscillators

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Output Frequency</th>
<th>Temperature Range (°C)</th>
<th>Frequency Stability (ppm)</th>
<th>Supply Voltage (V)</th>
<th>Packages (mm x mm)</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>SiT1680</td>
<td>32.768 kHz</td>
<td>-40 to +85, -40 to +105, -40 to +125, -55 to +125</td>
<td>±3, ±5, ±10, ±20, ±100, ±150</td>
<td>1.5 to 3.63</td>
<td>CSP: 1.5 x 0.8</td>
<td>LVCMOS, NanoDrive™, Smallest XO/TCXO</td>
</tr>
</tbody>
</table>

[1]: Contact SiTime for ±50 ppb. [2]: Contact SiTime for wettable flank status.

---

**Easy-to-use programming kit**

- Don’t waste time searching & waiting for timing devices
- Optimize system performance with custom frequencies
- Instantly reduce EMI with programmable drive strength

---

Field Programmable Oscillators – Always Available

- [Easy-to-use programming kit](#)
- Don’t waste time searching & waiting for timing devices
- Optimize system performance with custom frequencies
- Instantly reduce EMI with programmable drive strength

---

All products are available in -40 to +85°C unless otherwise noted.

© October 2019 SiTime Corporation, a MegaChips Company. Subject to change without notice.