

# PRODUKT-INFO

## SCO-16 SMD CRYSTAL OSCILLATOR

### FEATURES

1. The world's smallest quartz crystal oscillator: 1.6 x 1.2 x 0.7 mm max.  
Weight: 4.1 mg
2. Wide range of operating supply voltage: 1.8V, 2.5V, 3.3 V
3. Ceramic package and metal lid sealed by electron beam ensure high reliability.
4. Lead-free reflow soldering is available.



### APPLICATION

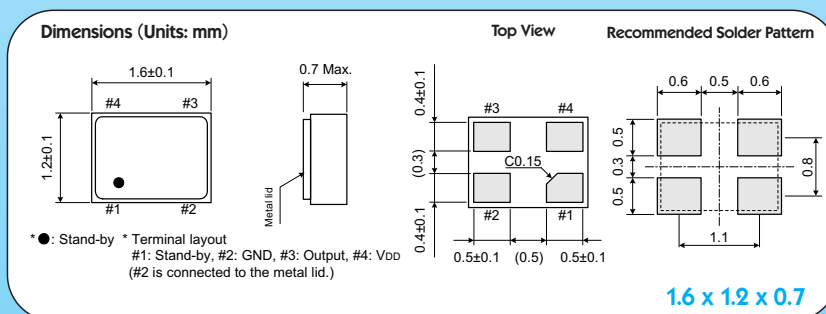
Mobile communication, wireless modules.

| ELECTRICAL SPECIFICATIONS                   |   | SCO-16   |
|---|---|--|
| <b>Model</b>                                | SCO-16  |  |
| <b>Frequency Range</b>                      | 1.0 MHz ~80.0 MHz   |  |
| <b>Frequency Stability</b>                  | ±7 ppm / ±10 ppm / ±15 ppm / ±20 ppm / ±30 ppm / ±50 ppm                              |  |
| <b>Operating Temperature Range</b>          | -20°C to +70°C, -30°C to +85°C, -40°C to +85°C option                                 |  |
| <b>Storage Temperature Range</b>            | -40°C to +85°C, -40°C to +105°C option  |  |
| <b>Supply Voltage (V<sub>DD</sub>)</b>      | 1.8V DC ±10%  | 2.5V DC ±10%    3.3V DC ±10%   |
| <b>Current Consumption during Operation</b> | 2.0 mA max.; F = 40MHz, V <sub>DD</sub> = 3.0V, no load<br>10 µA max.; Stand-by = „L“ |  |
| <b>Output Load</b>                          | 15 pF, max., CMOS   |  |
| <b>Output Voltage</b>                       | V <sub>OH</sub><br>V <sub>OL</sub>  | V <sub>DD</sub> - 0.4 V min.; I <sub>OH</sub> = -4 mA<br>0.4 V max.; I <sub>OL</sub> = +4 mA |
| <b>Rise Time</b>                            | 10% V <sub>DD</sub> ~ 90% V <sub>DD</sub>   | 4.5 ns max.  |
| <b>Fall Time</b>                            | 90% V <sub>DD</sub> ~ 10% V <sub>DD</sub>   | 4.5 ns max.  |
| <b>Duty Cycle</b>                           | 50% ± 5%  |  |
| <b>Startup Time</b>                         | 2.0 ms max.; V <sub>DD</sub> = 3.3V<br>5.0 ms max.; V <sub>DD</sub> = 1.8V            |  |
| <b>Random Jitter* (RJ)</b>                  | 2.9 ps; V <sub>DD</sub> = 3.3V  |  |
| <b>Total Jitter* (TJ)</b>                   | 40 ps; V <sub>DD</sub> = 3.3V, TJ = n x RJ (n ≈ 14.1, BER = 10 <sup>-18</sup> )       |  |
| <b>Phase Jitter</b>                         | 1.0 ps; V <sub>DD</sub> = 3.3 V Offset Frequency 12kHz ~ 5MHz                         |  |
| <b>Stand-by Terminal Function (V)</b>       | High  | 0.7 V <sub>DD</sub> min.; Output enable  |
|   | Low   | 0.3 V <sub>DD</sub> max.; Oscillation stop and high impedance output                         |

■ **OPTIONS:** \* Measured by wave crest 3100C.

■ **OPTIONS:** For operational stability, the bypass capacitor (0.01 µF ~ 0.1 µF) between V<sub>DD</sub> and GND should be placed as close to the product as possible.

Other specifications can be available.



Crystals...  
and more

Now available



digital electronic  
siegfried lehrer gmbh  
Rudolf-Wanzl-Str. 3+5  
D-89340 Leipzig / Germany  
www.digitallehrer.de  
digital@digitallehrer.de

Telefon +49 (0) 82 21 / 7 08 - 0 · Telefax +49 (0) 82 21 / 7 08 - 80

All specifications subject to change without notice.