



# SQXO2ATHG OSCILLATOR

32.768 kHz to 50 MHz

## DESCRIPTION

An increasing number of high temperature applications require the use of leaded (through hole) packaged oscillators. For these applications, Statek offers the SQXO2ATHG oscillator. These oscillators are designed to operate at temperatures up to 200°C with high shock survivability.

## FEATURES

- High temperature operation up to 200°C
- Excellent stability over temperature
- High shock resistance
- CMOS output
- Through-hole leaded package
- Reduces mechanical and thermal mounting stresses
- Robust TO-39 package
- 32.768 kHz option available
  - Low current (500  $\mu$ A at 25°C)
  - Fast start-up (0.8 ms typical)
- RoHS compliant

## APPLICATIONS

Industrial, Computer & Communications

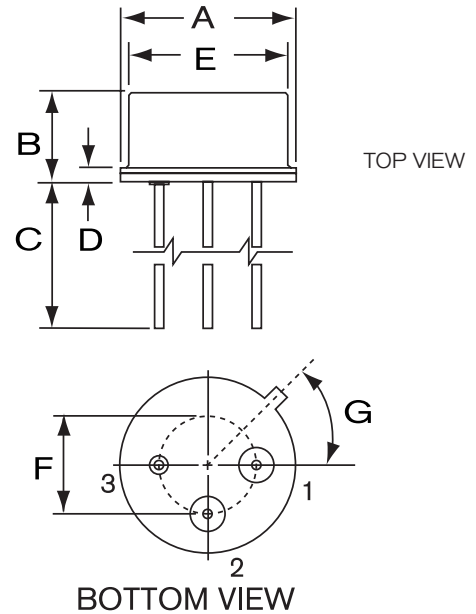
- Downhole instrumentation
- Rotary shaft sensors
- Underground boring tools
- Avionics applications

## PIN CONNECTIONS

1.  $V_{DD}$
2. Output
3. Ground



## PACKAGE DIMENSIONS



DIM	inches	mm
A	0.380 MAX.	9.65 MAX.
B	0.185 MAX.	4.70 MAX.
C	0.500 MIN.	12.70 MIN.
D	0.029	0.74
E	0.326 MAX.	8.28 MAX.
F	0.200 REF.	5.08 REF.
G	45°	45°

Note:

1. All metal parts gold plated
2. Leads are 0.019 in. [0.48mm] MAX.
3. Leads are gold plated (SM1 termination)

10215 - Rev B



## SPECIFICATIONS

Specifications are typical at 25°C unless otherwise noted.  
Specifications are subject to change without notice.

Supply Voltage <sup>1</sup>	2.5 V ± 10% (+175°C MAX.) 3.3 V ± 10% (+200°C MAX.) 5.0 V ± 10% (+200°C MAX.)															
Calibration Tolerance	± 50 ppm, or tighter as required															
Frequency Stability Over Temperature	± 100 ppm for 25°C to 150°C ± 150 ppm for 25°C to 175°C ± 175 ppm for 25°C to 200°C															
Total Tolerance <sup>2</sup>	± 200 ppm for 25°C to 200°C															
Supply Current (Typical)	<table border="0"> <tr> <td></td> <td><u>3.3V</u></td> <td><u>5.0V</u></td> </tr> <tr> <td>32.768 kHz</td> <td>500 µA</td> <td>-</td> </tr> <tr> <td>24 MHz</td> <td>3.0 mA</td> <td>8.0 mA</td> </tr> <tr> <td>32 MHz</td> <td>5.0 mA</td> <td>10.0 mA</td> </tr> <tr> <td>50 MHz</td> <td>6.0 mA</td> <td>14.0 mA</td> </tr> </table>		<u>3.3V</u>	<u>5.0V</u>	32.768 kHz	500 µA	-	24 MHz	3.0 mA	8.0 mA	32 MHz	5.0 mA	10.0 mA	50 MHz	6.0 mA	14.0 mA
	<u>3.3V</u>	<u>5.0V</u>														
32.768 kHz	500 µA	-														
24 MHz	3.0 mA	8.0 mA														
32 MHz	5.0 mA	10.0 mA														
50 MHz	6.0 mA	14.0 mA														
Start-up Time	5 ms MAX.															
Rise/Fall Time	10 ns MAX.															
Rise/Fall Time	100 ns MAX. (32.768 kHz)															
Duty Cycle	40% MIN., 60% MAX.															
Aging, first year	5 ppm MAX. at 25°C															
Shock, survival <sup>3</sup>	8,000 g, .5 ms, 1/2 sine															
Vibration survival <sup>4</sup>	20 g, 10-2,000 Hz swept sine															
Operating Temperature <sup>5</sup>	-55°C up to +200°C															

1. All frequencies, voltages, and temperature ranges may not be available. Contact factory.

2. Total Tolerance = Calibration Tolerance + Frequency Stability over temperature.

3. 25°C

4. Per MIL-STD-202G, Method 204D, Condition D, Random vibration testing also available.

5. Expected life at 200°C is in excess of 1,500 hours.

## ABSOLUTE MAXIMUM RATINGS

Supply Voltage V <sub>DD</sub>	-0.5 V to 4.0 V (3.3V) -0.5 V to 7.0 V (5V)
Storage Temperature	-55°C to +125°C
Maximum Process Temperature	260°C, 10 seconds

## PACKAGING

SOXO2ATHG - Tray Pack (Standard)

## ROHS 2 COMPLIANT

SOXO2ATHG - RoHS compliant and compliant with the pure-tin prohibition requirement.

## HOW TO ORDER SOXO2ATHG CRYSTAL OSCILLATORS

