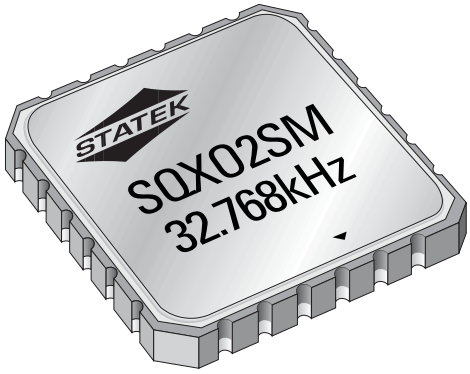
SQXO2SM OSCILLATOR

10 kHz to 2 MHz*

Surface Mount Low Power Crystal Oscillator

DESCRIPTION

The SQXO2SM oscillator consists of a CMOS-compatible hybrid circuit, hermetically sealed in a standard 24-pin ceramic leadless chip carrier. Precision tuning of the oscillator allows for very tight calibration tolerance and eliminates the need for a trimming capacitor, a major source of long-term frequency drift. The specifications and characteristics of the SQXO2SM vary with frequency. The characteristics of the 32.768 kHz model are presented in this data sheet.



*Consult factory for other frequencies.

FEATURES

- Low power consumption
- Low aging
- TTL and CMOS compatible
- Full military testing available
- Various voltage options available
- High shock resistance
- Standard 24-pin ceramic LCC

APPLICATIONS

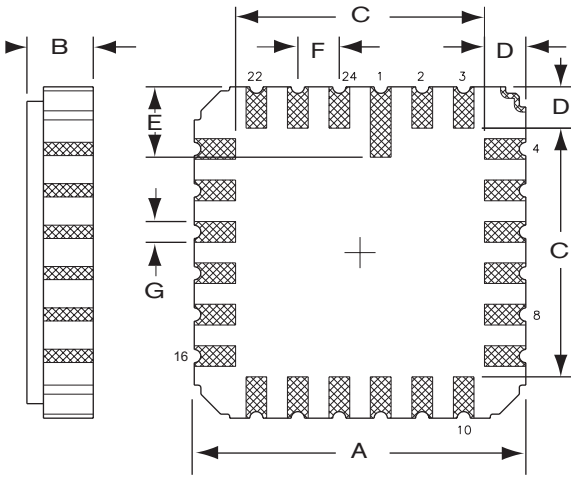
Industrial, Computer & Communications

- General purpose clock oscillator
- Data Logger
- Remote sensor
- Liquid level sensing
- Medical test and diagnostics

Military

- Portable field communication
- Military high speed modem
- Flight recorder

PACKAGE DIMENSIONS



DIM	inches	mm
A	0.410 MAX.	10.16 MAX.
B	0.080 MAX.	2.03 MAX.
C	0.300 MAX.	7.62 MAX.
D	0.050 TYP.	1.27 TYP.
E	0.085 TYP.	2.16 TYP.
F	0.050 TYP.	1.27 TYP.
G	0.025 TYP.	0.64 TYP.

PIN CONNECTIONS

Pin	Connection
23,24	Ground
5,6	V_{DD}
13,14	Output
All Others	NC

STATEK CORPORATION 512 N. MAIN ST., ORANGE, CA 92868 714-639-7810 FAX: 714-997-1256 www.statek.com

SPECIFICATIONS: SQXO2SM-32.768KHz

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

Supply Voltage (V_{DD})	5V ± 10%
Calibration Tolerance[1]	± 100 ppm (0.01%)
	± 300 ppm (0.03%)
	± 1000 ppm (0.10%
Supply Current	Figure 1
Tuning Point (T_0)[2]	Figure 2
Temp. Coefficient (k)	-0.035 ppm/°C[2]
Duty Cycle[1]	40% Min., 60% MAX.
Rise/Fall Time	0.2 μsec. MAX.
Aging, first year	10 ppm MAX.
Shock, survival	
Above 600 kHz	750 g peak 0.3 ms, 1/2 sine
Below 600 kHz	1,000 g peak 0.3 ms, 1/2 sine
Vibration survival	10 g RMS 10-2000 Hz random
Operating Temperature[3]	-10°C to +70°C (Commercial)
	-40°C to +85°C (Industrial)
	-55°C to +125°C (Military)
Maximum Assembly Temperature	260°C for 20 sec

1. Tighter tolerances available
2. Does not include calibration tolerance.
   Positive variations small compared to negative variations.

PACKAGING

SQXO2SM -Tray Pack (Standard)

ABSOLUTE MAXIMUM RATINGS

Supply Voltage V_{DD}	-0.3V to 7V
Storage Temperature	-55°C to +125°C

FIGURE 1.
TYPICAL SUPPLY CURRENT (mA) @ 5V

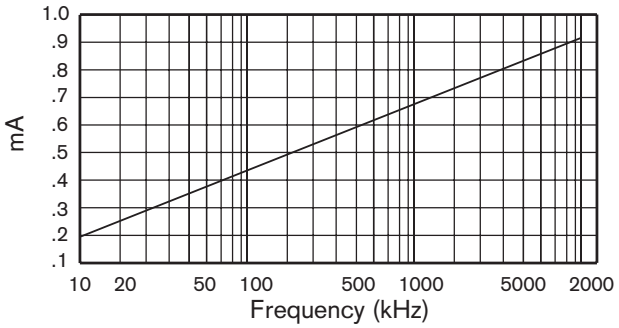
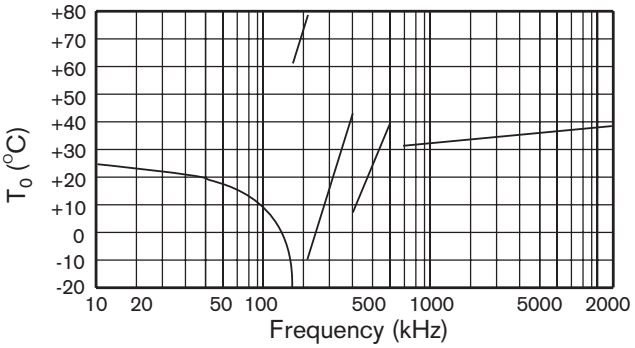


FIGURE 2.
TYPICAL TURNING POINT TEMPERATURE (T_o)



Note: Frequency (f) deviation from frequency (f_O) @ turning point temperature (T_O): $\frac{f-f_O}{f_O} = k(T-T_O)^2$

HOW TO ORDER SQXO2SM CRYSTAL OSCILLATORS

SQXO2 | S | SM3 | 32.768K , 100 / I

- S: "S" if special or custom design. Blank if Std.
- SM3: Blank = SM1; = Gold Plated (Lead Free); SM3 = Solder Dipped; SM5 = Solder Dipped (Lead Free)
- 32.768K: Frequency M = MHz
- 100: Calibration Tolerance @ 25°C (in ppm)
- I: Operating Temp. Range: C = -10°C to +70°C; I = -40°C to +85°C; M = -55°C to +125°C; S = Customer Specified

STATEK CORPORATION 512 N. MAIN ST., ORANGE, CA 92868 714-639-7810 FAX: 714-997-1256 www.statek.com