



# SQXO2ATSM OSCILLATOR

312 kHz to 120 MHz  
Surface Mount Crystal Oscillator

## DESCRIPTION

The SQXO2ATSM oscillator consists of a CMOS-compatible hybrid circuit, hermetically sealed in a industry standard 24-pin ceramic leadless chip carrier.

## FEATURES

- CMOS and TTL compatible
- High frequency (AT)
- Wide temperature range
- Full military testing available
- Hermetically sealed

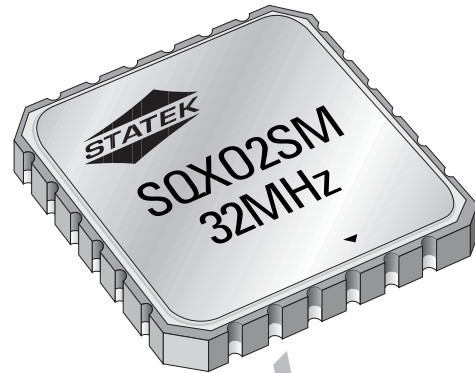
## APPLICATIONS

Industrial, Computer & Communications

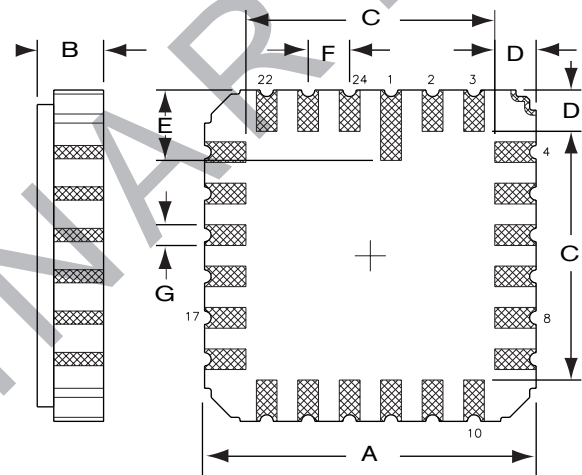
- Rugged Computer

Military & Aerospace

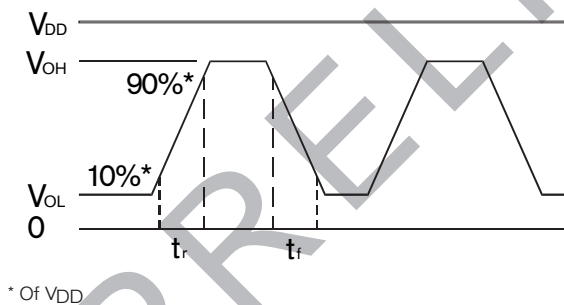
- Intelligent Munitions
- Avionics



## PACKAGE DIMENSIONS



## OUTPUT WAVE FORM



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
5,6	V <sub>DD</sub>
13,14	Output
19,20	Output Enable, INH (Tri-State) or NC
23,24	Ground
All Others	NC

10159 - Rev A



## SPECIFICATIONS

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

Supply Voltage (V <sub>DD</sub> )	5V ± 10% (3.3V available)
Calibration Tolerance <sup>1</sup>	± 100 ppm (0.01%) ± 1000 ppm (0.1%) ± 10000 ppm (1.0%)
Frequency Stability <sup>1/2</sup> (at 5V)	0°C to +50°C from ± 5 to ± 30 ppm -10°C to +70°C from ± 10 to ± 50 ppm -40°C to +85°C from ± 20 to ± 100 ppm -55°C to +125°C from ± 30 to ± 100 ppm
Supply Current	14 mA for 50 MHz 12 mA for 40 MHz 10 mA for 30 MHz 8 mA for 24 MHz
TTL Load	10@5V
CMOS Load	15pF (up to 50 pF available)
Start-up Time	5 ms MAX.
Rise/Fall Time	3 ns Typ., 6 ns MAX.
Duty Cycle <sup>1</sup>	40% Min., 60% MAX.
Aging, first year	10 ppm MAX.
Shock, survival <sup>3</sup>	3,000 g peak 0.3 ms, 1/2 sine
Vibration survival	20 g RMS 10-2000 Hz random
Operating Temperature <sup>4</sup>	-10°C to +70°C (Commercial) -40°C to +85°C (Industrial) -55°C to +125°C (Military)

1. Tighter tolerances available for calibration, stability and duty cycle.

2. Does not include calibration tolerance.

3. High shock version available.

4. Consult factory for operating temperatures above 125°C.

Note: All parameters are measured at ambient temperature with a 10MΩ and 15pF load at 5V

## ABSOLUTE MAXIMUM RATINGS

Supply Voltage V <sub>DD</sub>	-0.5V to 7.0V
Storage Temperature	-55°C to +125°C
Maximum Process Temp.	260°C, 10 seconds

## PACKAGING

SQXO2ATSM - Tray Pack (Standard)

## TRUTH TABLE

	PIN 19,20*	PIN 13,14
SQXO2ATSM-10E	Low (0)	High (Z)
	High (1)	Freq. Output
SQXO2ATSM-10T	Low (0)	High (Z)
	High (1)	Freq. Output
SQXO2ATSM-10N	NC	Freq. Output

\* Normally high (internal pull-up resistor)

## ENABLE VS. TRI-STATE

Enable: When pin 19,20 is low (0), the oscillator stops oscillation.

Tri-state: When pin 19,20 is low, the oscillator is running. However, the output buffer amplifier stops functioning and output is in high impedance (Z) state.

	Enable	Tri-state
Current consumption when pin 19,20 is low	Low	High
Output recovery delay when pin 19,20 changes from low (0) to high (1)	Delayed	Immediate

## HOW TO ORDER SQXO2ATSM CRYSTAL OSCILLATORS

