NTXO OSCILLATOR

8 MHz to 64 MHz

Tight Stability Quartz Crystal Oscillator

DESCRIPTION

Statek's NTXO/NTXOHG are small, low power, clean reference sources that fill the stability gap between conventional clock oscillators and TCXO reference sources. Manufactured for high-reliability applications that require a stable reference, these oscillators offer a total frequency tolerance as low as ±5 ppm over -40°C to +85°C as well as high-shock survivability. This product is housed in a hermetically sealed ceramic package.

FEATURES

- **Built-in internal decoupling capacitor (VDD to GND)**
- High shock resistance (HG version) up to 50,000 g
- Wide 1.62 V to 3.63 V operating voltage range
- Phase noise 32 MHz (-160 dBc/Hz) @100 kHz
- Integrated RMS phase jitter 32 MHz (135 fs)
- Low current consumption; 1.5 mA 26 MHz 3.3 V, 10 pF load
- Military testing available
- Ultra-low Allan deviation and phase noise
- Low acceleration sensitivity and phase jitter
- Clipped sine output (CMOS available - contact Statek)
- Voltage control ±5 ppm (optional)
- Fundamental frequency; no PLL artifacts
- Designed and manufactured in the USA

APPLICATIONS

Industrial, Defense and Aerospace

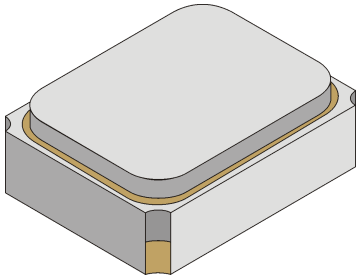
- RF Telemetry
- Guidance and Navigation Systems
- Ground Control Stations
- Communiations
- Handheld Devices and Instrumentation

PACKAGING OPTIONS

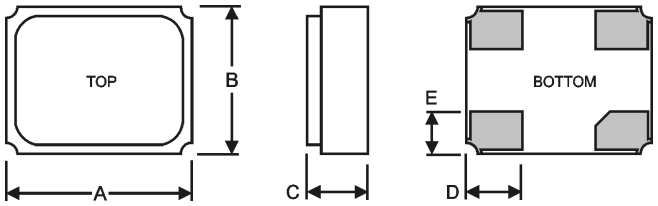
- Tray Pack
- Tape and Reel (per EIA 481). See Tape and Reel datasheet 10109.

PIN CONNECTIONS

1. Voltage Control, OE (Oscillator Enable/Disable), not connected (N)
2. Ground
3. Output
4. V_{DD}

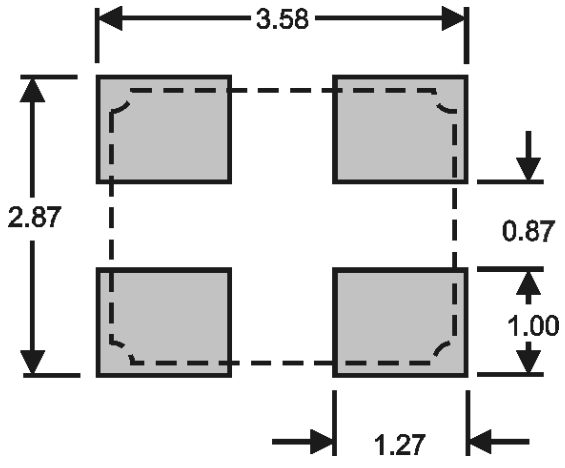


DIMENSIONS



DIM (mm)	Termination	TYPICAL	MAXIMUM
A		3.25	3.48
B		2.50	2.73
C	SM1	1.12	1.25
	SM3/SM5	1.24	1.37
D		1.02	1.14
E		0.76	0.89

SUGGESTED LAND PATTERN



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

SPECIFICATIONS

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

Frequency Range	8 MHz to 64 MHz
Supply Voltage (V_{DD})	1.8 V ± 5% (2.5 V, 3.0 V and 3.3 V ± 10%)
Total Frequency Tolerance[1]	As low as ±5 ppm (Industrial)
Typical Supply Current[2]	1.5 mA @ load
Output Voltage Level (Clipped sinewave)	0.90 Vp-p Typical
Output Load (Clipped sinewave)	10 pF ‖10 kΩ
Start-up Time	2 ms Typical, 5 ms MAX
Voltage Control (Pin 1) (OV to V_{DD})	±5 ppm Typical
OE Standby Current Oscillator Off[6]	2.0 µA (Pin 1 Low OV) (Pin 1 OE Mode)
Aging, first year	±2 ppm
Shock Survival[3]	STD: 5,000 g, 0.5 ms, ½ sine HG: Up to 50,000 g, 0.5 ms, ½ sine
Vibration Survival[4]	20 g, 10-2,000 Hz swept sine
Operating Temperature Range	-40°C to +85°C (Industrial)
Storage Temperature Range	-55°C to +125°C
Max Process Temperature	260°C for 20 seconds
MIN/MAX Supply Voltage (V_{DD})[5]	-0.3 V / 3.63 V
Absolute Maximum Rating (Pin 1)[5]	-0.3 V to (V_{DD} +0.3 V)
Moisture Sensitivity Level (MSL)	This product is hermetically sealed and is not moisture sensitive.

1. Includes aging first year.
2. V_{DD} = 3.3 V, 10 pF load, frequency at 26 MHz.
3. Contact factory for higher shock rating.
4. Per MIL-STD-202, Method 204, Condition D. Random vibration testing also available.
5. Do not exceed the absolute maximum ratings.
6. Pin 1 OE, high level (oscillator run) ≥90% V_{DD}, low level stop ≤10% V_{DD}.

HOW TO ORDER STATEK MTXO OSCILLATOR

NTXO HG 4 B OE S SM3 — 40.0M , — / — / 5 / I

High Shock
HG = High Shock
Blank = Standard

Supply Voltage
1 = 1.8 V
2 = 2.5 V
3 = 3.0 V
4 = 3.3 V

Shock Level Code
Blank = 5,000 g
B = 10,000 g
C = 20,000 g
D = 30,000 g
F = 50,000 g

OE = Oscillator Enable
VC = Voltage Control
N = Not Connected

Special
Blank = Standard
S = Special or Custom

Terminations
SM1 = Gold Plated (Lead Free)
SM3 = Solder (60/40 Sn-Pb)
SM5 = Solder (Lead Free)

Frequency
M = MHz

Total Frequency Tolerance[1] (in ppm)

Operating Temp. Range
I = -40°C to +85°C
S = Customer Specified

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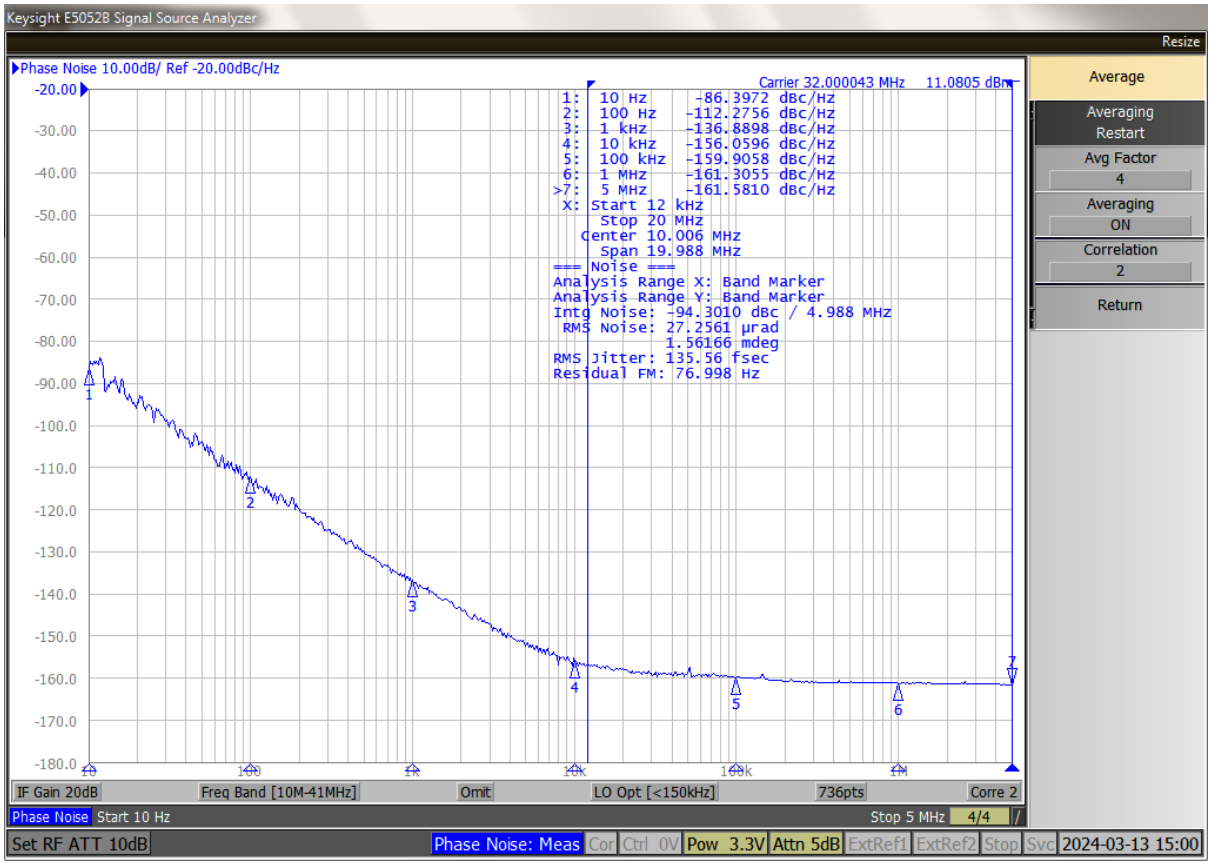
PHASE NOISE AND JITTER PERFORMANCE



Typical phase noise [dBc/Hz]

Offset Frequency	32 MHz
10 Hz	-86
100 Hz	-112
1 kHz	-137
10 kHz	-156
100 kHz	-160
1 MHz	-161
5 MHz	-161

Integrated RMS phase jitter[1]

Frequency	V_{DD} = 3.3 V
32 MHz	135 fs

1. 12 kHz to 20 MHz typical, unless noted otherwise.

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