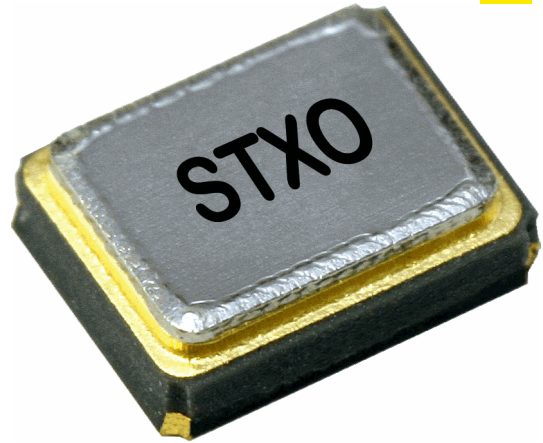


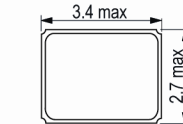
ISSUE 2; January 2018

Description

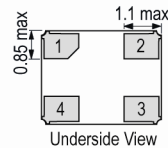
- State-of-the-art design, process, manufacturing and testing capabilities have made the development of the ultra-miniature 3.2mm x 2.5mm STXO oscillator achievable. Performance capabilities include low RMS jitter (typical <300fs), low phase noise (noise floor typical <-161dBc/Hz), tight frequency stability (± 15 ppm total over -55 to 125°C to ± 5 ppm total over -40 to 85°C).
- -HGD-SM1 30000G (Gold plated, RoHS compliant)
- -HGD-SM5 30000G (Solder dipped, RoHS compliant)
- -HGF-SM1 50000G (Gold plated, RoHS compliant)
- -HGF-SM5 50000G (Solder dipped, RoHS compliant)
- -HGG-SM1 75000G (Gold plated, RoHS compliant)
- -HGG-SM5 75000G (Solder dipped, RoHS compliant)
- -SM1 (Gold plated, RoHS compliant)
- -SM5 (Solder dipped, RoHS compliant)
- FEATURES:
 - High shock survival option up to 75000g
 - Tight frequency stability and low phase noise
 - Ultra-low Allan Deviation and RMS phase jitter
 - Ultra-low period jitter: 1.4ps RMS
 - Low current consumption
 - Full military testing per MIL-PRF-55310 available
 - CMOS output; enable/disable with Tri-State
 - Fundamental frequency; no PLL
 - Hermetically sealed ceramic package
- APPLICATIONS:
 - Defence and Aerospace
 - RF Telemetry
 - Master Clock
- Model STXO is available in both 3.2x2.5mm and 2.5x2.0mm packages in supply voltage options of 2.5V, 3.0V and 3.3V
- Please note that all data given is only valid @ 25°C unless otherwise stated.



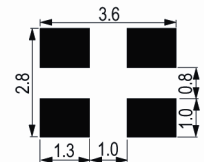
Outline (mm) -SM5 = (Solder dipped, RoHS compliant)



- Pad Connections Height (H) =
- | | |
|-------------|--------------|
| 1. EN or NC | SM1 1.35 max |
| 2. GND | SM5 1.47 max |
| 3. Output | |
| 4. +Vs | |



Solder Pad Layout



Frequency Parameters

- Frequency 10.0MHz to 80.0MHz
- Frequency Stability ± 5.00 ppm to ± 20.00 ppm
- Ageing ± 2 ppm max in 1st year @ 25°C
- Note: For tighter total frequency stabilities please contact an IQD Sales Office.

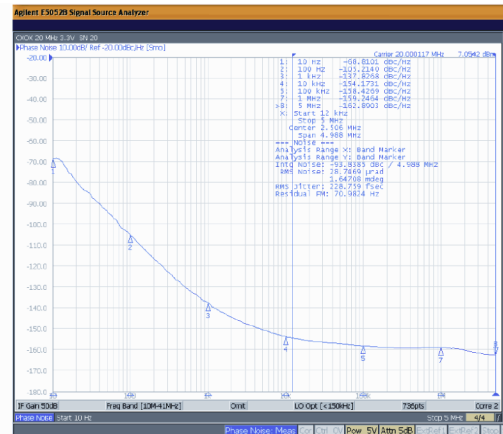
Electrical Parameters

- Supply Voltage 3.3V $\pm 10\%$
- Absolute Maximum Supply Voltage Rating: -0.3 to 4.0V
Note: Operating beyond these limits may result in change or permanent damage to the oscillator.
- Current Draw (@ F=40MHz, Vs=3.3V and load=15pF): 3mA typ

Operating Temperature Ranges

- -40 to 85°C
- -40 to 105°C
- -55 to 125°C

Phase Noise Performance @ 20MHz



Sales Office Contact Details:

UK: +44 (0)1460 270200
Germany: 0800 1808 443

France: 0800 901 383
USA: +1.760.318.2824

Email: info@iqdfrequencyproducts.com
Web: www.iqdfrequencyproducts.com

Output Details

- Output Compatibility CMOS
- Drive Capability 15pF
- Output Voltage Levels:
Output Low (VoL): 0.4V max
Output High (VoH): Vs-0.4V min
- Start Up Time: 5ms max

Output Control

- Enable/Disable (EN):
Logic '0' to pad 1 disables oscillator output, output goes to high impedance state, current consumption very low, internal oscillator stops, output recovery delayed.
Logic '1' or no connection (internal pull-up resistor) to pad 1 enables oscillator output.
- No Connection (NC): Pad 1 No Connection

Noise Parameters

- Phase Noise (F=20MHz, typ):
-69dBc/Hz @ 10Hz
-105dBc/Hz @ 100Hz
-138dBc/Hz @ 1kHz
-154dBc/Hz @ 10kHz
-158dBc/Hz @ 100kHz
-159dBc/Hz @ 1MHz
-163dBc/Hz @ 5MHz
- Phase Noise (F=40MHz, typ):
-61dBc/Hz @ 10Hz
-98dBc/Hz @ 100Hz
-131dBc/Hz @ 1kHz
-151dBc/Hz @ 10kHz
-160dBc/Hz @ 100kHz
-161dBc/Hz @ 1MHz
-161dBc/Hz @ 5MHz
- RMS Phase Jitter (12kHz to 20MHz):
F=20MHz: 229fs typ
F=40MHz: 228fs typ
- RMS Period Jitter over 10000 cycles (F=20MHz or 40MHz):
1.4ps typ

Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Shock:
Standard: 5000g, 0.5ms, 1/2 sine
HGD: 30000g, 0.5ms, 1/2 sine
HGF: 50000g, 0.5ms, 1/2 sine
HGG: 75000g, 0.5ms, 1/2 sine
- Vibration: MIL-STD-202G, Method 204D, Condition D: 20g, 10-2000Hz, swept sine.
- Note: Random vibration testing also available - please contact an IQD Sales Office.
- RoHS Reflow 260°C max for 20secs max

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Ordering Information

- Frequency*
 - Model*
 - Supply Voltage
 - Shock Level*
 - Termination Variant*
 - Output
 - Frequency Stability (over operating temperature range)*
 - Operating Temperature Range*
 - Pad 1 Function*
(*minimum required)
- Shock Level Variants:
 - Blank = 5000g
 - HGD = 30000g
 - HGF = 50000g
 - HGG = 75000g
- Termination Variants:
 - SM1 = Gold Plated
 - SM5 = Solder Dipped
 - Note: Non-RoHS compliant terminations are available - please contact an IQD Sales Office.
- Pad 1 Function Options:
 - EN = Enable/Disable
 - NC = No connection
- Example
 - 40.0MHz STXO A 3.3V-HGD-SM1
 - CMOS ± 10 ppm -40 to 85 C EN

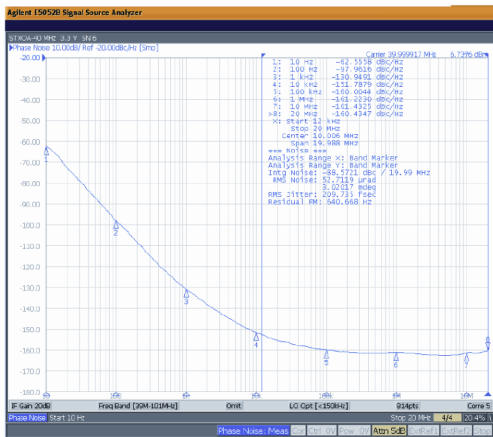
Compliance

- RoHS Status (2011/65/EU) Compliant
- REACH Status Compliant
- MSL Rating (JEDEC-STD-033): Not Applicable

Packaging Details

- Pack Style: Tray Supplied on a tray
Pack Size: 1
- Pack Style: Reel Tape & reel in accordance with EIA-481-D
Pack Size: 1,000

Phase Noise Performance @ 40MHz



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Electrical Specification - maximum limiting values 3.3V \pm 10%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
10.0MHz	80.0MHz	-40 to 85	\pm 5.0	-	5	45/55%
		-40 to 105	\pm 10.0	-	5	45/55%
		-55 to 125	\pm 15.0	-	5	45/55%

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