

ISSUE 1; January 2016

Description

- An ultra stable, surface-mount Temperature Compensated Crystal Oscillator (TCXO) delivering exceptional phase noise and jitter performance and enhanced frequency versus temperature stability.
- FEATURES:**
RMS phase jitter down to 0.13ps.
Phase noise < \square 160dBc/Hz noise floor.
Voltage Control and T \square sense options available.
- APPLICATIONS:**
Positioning
Test & Measurement
Telecommunications
Hi \square Rel / Defence
- Standard Frequencies: 10.0MHz, 12.80MHz, 16.3840MHz, 19.20MHz, 19.440MHz, 20.0MHz, 25.0MHz, 26.0MHz, 30.720MHz, 38.880MHz and 40.0MHz.

Frequency Parameters

- Frequency 1.25MHz to 52.0MHz
- Frequency Tolerance ± 1.00 ppm
- Tolerance Condition @ 25°C $\pm 1^\circ$ C
- Frequency Stability ± 0.05 ppm to ± 2.50 ppm
- Frequency Stability: Measurement referenced to (Fmax+Fmin)/2.
Note: The best available stability depends on the nominal frequency and selected operating temperature range.
- Ageing:
F \leq 26.0MHz: ± 1 ppm max/yr, ± 3 ppm max over 10yrs
F>26.0MHz: ± 2 ppm max/yr, ± 5 ppm max over 10yrs
- Root Allan Variance (F=20.0MHz @ 25°C, tau=1sec): 5xE-11 typ
- Acceleration Sensitivity (gamma vector of all 3 axes from 30 to 1500Hz): Typically 2ppb/G max
- Supply Voltage Variation ($\pm 5\%$ change @ 25°C ref to frequency @ nominal Vs): ± 25 ppb typ
- Load Variation:
HCMOS & ACMOS (± 5 pF change @ 25°C ref to frequency @ nominal load): ± 50 ppb typ
Sine & Clipped Sine ($\pm 10\%$ change @ 25°C ref to frequency @ nominal load): ± 50 ppb typ
- Reflow Variation (after 1hr recovery @ 25°C): ± 0.5 ppm max

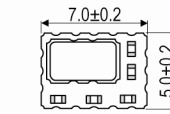
Electrical Parameters

- Supply Voltage Range: 2.5V to 5.7V
(Standard Voltages are 3.0, 3.3 & 5.0V)
- Supply Current:
HCMOS: 4mA typ
ACMOS: 8mA typ
Sine: 8mA typ
Clipped Sine: 2mA typ

Frequency Adjustment

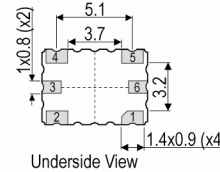
- Control Voltage 1.5V ± 1 V
- Pulling:
F \leq 26.0MHz: ± 5 ppm min
F>26.0MHz: ± 7 ppm min

Outline (mm)

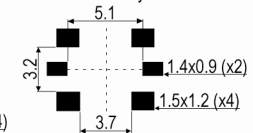


Pad Connections

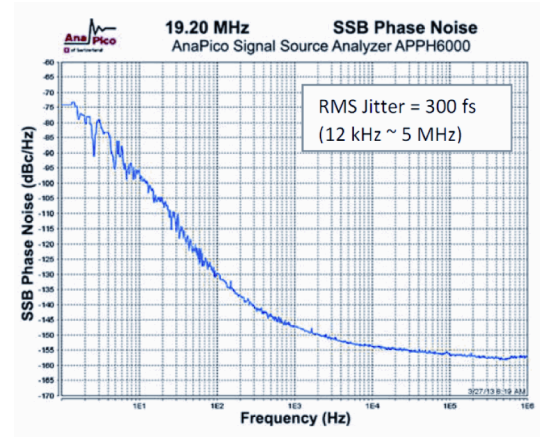
- Do not connect or Voltage Control
- GND
- Do not connect or Vref or Vtemp
- Output
- +Vs
- Enable/Disable



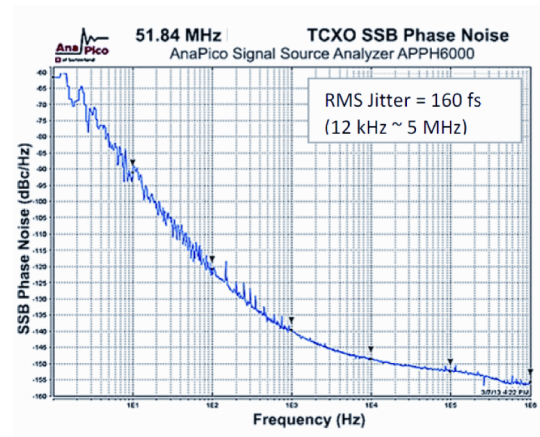
Solder Pad Layout



Example Phase Noise @ 19.20MHz



Example Phase Noise @ 51.84MHz



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

Operating Temperature Ranges

- -20 to 70°C
- -55 to 105°C

Output Details

- Output Compatibility: HCMOS/Sine/Clipped Sine
- Output Compatibility: HCMOS, ACMOS, Sine or Clipped Sine.
- Start Up Time (amplitude within 90% of specified output level): 5ms to 15ms

Output Control

- Tri-State Mode:
Logic '0' (20%Vs max) to pad 6 disables the oscillator output, the output goes to a high impedance state.
Logic '1' (60%Vs min) or no connection to pad 6 enables the oscillator output.

Compliance

- RoHS Status (2011/65/EU) Compliant
- REACh Status Compliant
- MSL Rating (JDEC-STD-033): 1

Packaging Details

- Pack Style: Reel Tape & reel in accordance with EIA-481-D
Pack Size: 1,000
- Pack Style: Bulk Bulk pack
Pack Size: 100

Electrical Specification - maximum limiting values

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
1.25MHz	52.0MHz	-20 to 70	±0.05	-	-	-
		-55 to 105	±2.5	-	-	-

This document was correct at the time of printing; please contact your local sales office for the latest version.

[Click to view latest version on our website.](#)

Chipset Approval Table

IQD Model	Ref No.	Frequency	Chipset Type	IC Supplier	
IQXT-314-1	E6127LF	12.80MHz	Si5348	SiLabs	
IQXT-314-2	E6213LF	40.0MHz	Si5328, AppNote 776	SiLabs	
IQXT-314-3	E6240LF	10.0MHz	82P33910 and multiple other 82P339xx	IDT	

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