ISSUE 1; November 2021

Description

- The IQXT-318 uses ASIC technology and is designed to meet the short and medium term stability requirements of packet network synchronisation for Small Cells. The oscillator has low jitter to meet network interface requirements (e.g. 10GE) and low phase noise to meet radio interface requirements of LTE-A (TS 36.104) and WCDMA (TS 25.104) transceivers. The IQXT-318 is the ideal choice for Small Cell synchronisation requirements.
- FEATURES:
  Patented 'varactor linearisation' removes the effects of tilt when using voltage control.
  HCMOS and Clipped Sinewave output options available.
  LTE phase noise compliant.
  Temperature sensor option.
- APPLICATIONS:
  Small Cells -
  WCDMA
  LTE
  LTE□A
- Standard Frequencies: 19.20MHz, 25.0MHz, 24.5760MHz, 26.0MHz, 30.720MHz, 38.40MHz and 40.0MHz.

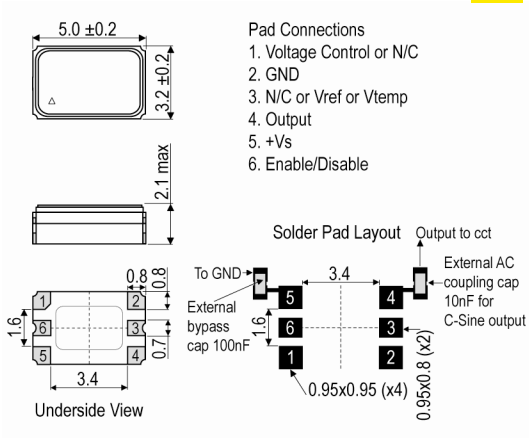
Frequency Parameters

- Frequency 19.2MHz to 40.0MHz
- Frequency Tolerance ±1.00ppm
- Tolerance Condition @ 25°C ±1°C
- In□service Short-term Frequency Stability (all effects for 24hrs): ±50ppb to ±250ppb
- Ageing:
  ±20ppb max/day
  ±200ppb max/month
  ±1ppm max/year
  ±3ppm max over 10yrs
- Frequency Slope ΔF/ΔT (in still air): ±20ppb/°C to ±100ppb/°C
- Acceleration Sensitivity (gamma vector of all 3 axes from 30 to 1500Hz): Typically 2ppb/G max
- Supply Voltage Variation (±2% change @ 25°C ref to frequency @ nominal Vs): ±10ppb typ
- Load Variation:
  HCMOS (±1pF change @ 25°C ref to frequency @ nominal load): ±10ppb typ
  Clipped Sine (±2% change @ 25°C ref to frequency @ nominal load): ±10ppb typ
- Reflow Variation (after 1hr recovery @ 25°C): ±0.5ppm max
- Temperature Rate of Change (maximum rate of change of temperature condition for guaranteed stability specifications): 1°C/min max

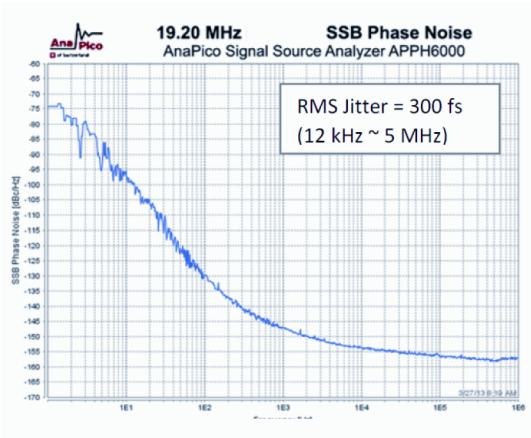
Electrical Parameters

- Supply Voltage Range: 2.5V to 5.7V
  (Standard Voltages are 3.0 & 3.3; other values available on request)
- Supply Current:
  HCMOS: 4mA typ
  Clipped Sine: 2mA typ

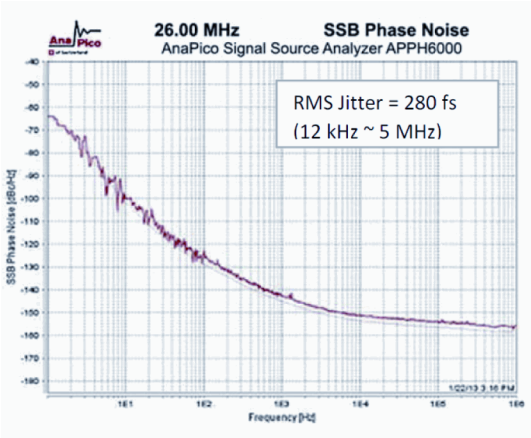
Outline (mm)



Example Phase Noise @ 19.20MHz



Example Phase Noise @ 26.00MHz



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Frequency Adjustment

- Pulling ±5ppm to ±12ppm
- Control Voltage 1.5V ±1.0V
- Input Impedance 100kΩ min

Operating Temperature Ranges

- -40 to 85°C

Output Details

- Output Compatibility HCMOS/Clipped Sine
- HCMOS Output Waveform:
  Output Voltage Level Low (VoL): 10%Vs max
  Output Voltage Level High (VoH): 90%Vs min
  Rise and Fall Times: 8ns max
  Duty Cycle (measured @ 50% level): 45/55% max
- Clipped Sine Output Waveform:
  Output Voltage Level (@ TA=25°C, Vs min and load=10kΩ//10pF): 0.8V pk-pk min
  Output Load Capability: 10kΩ//10pF
- Start Up Time (amplitude within 90% of specified output level): 15ms max

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 (2015/863/EU) Compliant
- REACh Status Compliant
- MSL Rating (JDEC-STD-033): 3

Packaging Details

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

Electrical Specification - maximum limiting values

Frequency Min	Frequency Max	Temperature Range	Stability	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppm	mA	ns	%
19.2MHz	40.0MHz	-40 to 85	-	-	-	-

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

IQD Model	Ref No.	Frequency	Chipset Type	IC Supplier	
IQXT-318-1	E6242LF	19.20MHz	FSM9xxx, FSM99xx	Qualcomm	
IQXT-318-2	E6350LF	24.5760MHz	TCI6612, TCI6614, TCI6630	Texas Instruments	
IQXT-318-3	E6359LF	30.720MHz	OCTEON Fusion CNF71xx	Cavium	
IQXT-318-4	E6400LF	25.0MHz	Transcede 2000, Transcede 3000, Transcede 4000	Intel	
IQXT-318-5	E6402LF	19.20MHz	Transcede 2000, Transcede 3000, Transcede 4000	Intel	
IQXT-318-6	E6404LF	40.0MHz	Transcede 2000, Transcede 3000, Transcede 4000	Intel	
IQXT-318-7	E6446LF	38.40MHz	FSM9xxx, FSM99xx	Qualcomm	
IQXT-318-8	E6473LF	19.20MHz	ADI96xx	ADI	
IQXT-318-9	E6474LF	30.720MHz	ADI96xx	ADI	
IQXT-318-10	E6475LF	40.0MHz	ADI96xx	ADI	
IQXT-318-11	E6519LF	30.720MHz	OCTEON Fusion CNF71xx	Cavium	
IQXT-318-12	E6606LF	26.0MHz	BCM61730, BCM61750, BCM61760	Broadcom	
IQXT-318-13	E6612LF	19.20MHz	BCM61730, BCM61750, BCM61760	Broadcom	

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