

## Description

- The IQXT-270-3 temperature compensated crystal oscillator (TCXO) employs an analogue ASIC for the oscillator and a high order temperature compensation circuit in a 2.0 x 1.6mm size package.
- Model: IQXT-270-3
- Model Issue number: 1

## Frequency Parameters

- Frequency: 16.3690MHz
- Frequency Tolerance:  $\pm 1.00$ ppm
- Frequency Stability:  $\pm 0.50$ ppm
- Operating Temperature Range: -40.00 to 85.00°C
- Ageing:  $\pm 1$ ppm max per year at 25°C
- Frequency Tolerance: Offset from nominal frequency measured at 25°C  $\pm 2$ °C.
- Reflow Shift (two consecutive reflows as per profile after 1 hour relaxation at 25°C):  $\pm 1$ ppm max
- Frequency Stability: Referenced to the midpoint between minimum and maximum frequency value over the specified temperature range (note 1).
- Frequency Slope (minimum of one frequency reading every 2°C, over the operating temperature range - note 1): 0.1ppm/°C max
- Static Temperature Hysteresis (frequency change after reciprocal temperature ramped over the operating range, frequency measured before and after at 25°C):  $\pm 0.6$ ppm max
- Supply Voltage Variation ( $\pm 5\%$  change at 25°C):  $\pm 0.1$ ppm max
- Load Variation ( $\pm 10\%$  change at 25°C - note 2):  $\pm 0.2$ ppm max
- Frequency Drift Rate:
  - Drift Period: 0.03 to 0.3 seconds: 500ppb/s max
  - Drift Period: 0.3 to 1.0 seconds: 40ppb/s max
  - Drift Period: 1.0 to 3.0 seconds: 2.5ppb/s max

## Electrical Parameters

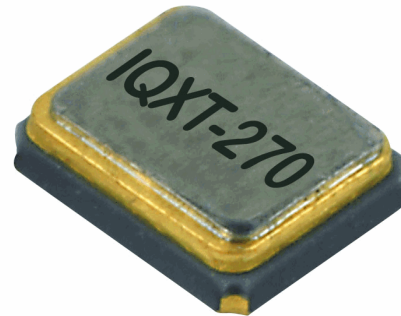
- Supply Voltage: 1.8V  $\pm 5\%$
- Current Draw: 1.50mA
- Supply Current (at Vs max - note 2): 1.5mA max

## Output Details

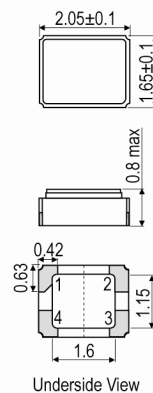
- Output Compatibility: Clipped Sine
- Drive Capability: 10k $\Omega$ /10pF  $\pm 10\%$
- Output Voltage Level (at Vs min - note 2): 0.8V pk-pk min
- Output: DC coupled (note 3)

## Noise Parameters

- Phase Noise at 25°C (typical):
  - 62dBc/Hz @ 1Hz
  - 90dBc/Hz @ 10Hz
  - 112dBc/Hz @ 100Hz
  - 132dBc/Hz @ 1kHz
  - 145dBc/Hz @ 10kHz
  - 147dBc/Hz @ 100kHz



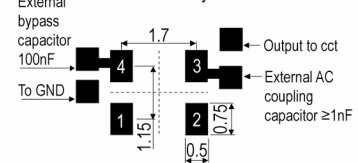
## Outline (mm)



### Pad Connections

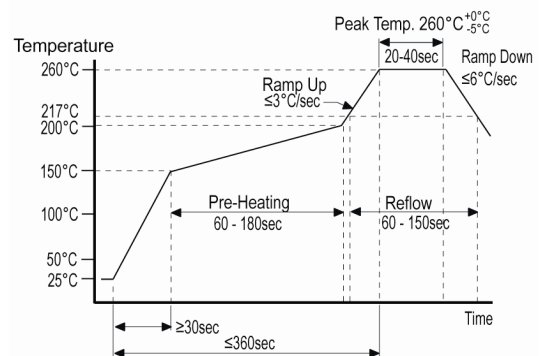
- GND / N/C
- GND
- Output
- +Vs

### Solder Pad Layout



Recommend no tracks, including plains under the device.

## Pb-Free Reflow



## 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](mailto:info@iqdfrequencyproducts.com)  
Web: [www.iqdfrequencyproducts.com](http://www.iqdfrequencyproducts.com)

**Environmental Parameters**

- Shock: MIL-STD-202 M213 (note 4): Half sine-wave acceleration of 3000G peak amplitude, duration 0.3ms, velocity 12.3ft/s.
- Moisture Resistance: MIL-STD-202 M106g (note 4): 1000 hours at 85°C, 85% relative humidity. Biased.
- Thermal Cycling: JESD22 Method JA-104C (note 4): 1000 temperature cycles, where each cycle consists of a 25 minutes soak time at -40°C followed by a 25 minute soak time at 85°C, with a 60 second maximum transition time between temperatures. Air to air transition.
- Vibration: JESD22-B103-B ( note 4): 10G peak acceleration for 20 minutes 12 cycles in each of the 3 orientations, swept from 10-2000Hz.
- Storage Temperature Range: -40 to 85°C

**Manufacturing Details**

- Maximum Process Temperature: 260°C (40secs max)
- Note 1: Parts should be shielded from drafts causing unexpected thermal gradients. Temperature changes due to ambient air currents can lead to short term frequency drift.
- Note 2: Specified for the load stated in Output Details above, at 25°C.
- Note 3: External AC coupling capacitor required; 1nF or greater recommended.
- Note 4: Frequency shift of ±1ppm max after environmental conditions.

**Compliance**

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

**Packaging Details**

- Pack Style: **Cutt**      In tape, cut from a reel  
Pack Size: 100
- *Alternative packing option available*

**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](mailto:info@iqdfrequencyproducts.com)  
Web: [www.iqdfrequencyproducts.com](http://www.iqdfrequencyproducts.com)

## X-ON Electronics

Largest Supplier of Electrical and Electronic Components

*Click to view similar products for [TCXO Oscillators](#) category:*

*Click to view products by [IQD](#) manufacturer:*

Other Similar products are found below :

[SiT5000AI-3D-33E0-10.000000X](#) [THD3031035LK280005-10.0M](#) [AST3TDATAACJ5-10.0000MHz](#) [AST3TDATAACJ5-20.0000MHz](#)  
[AST3TDA53TACJ2-19.2000MHz](#) [AST3TDA53TACJ2-38.8800MHz](#) [AST3TDATAACJ5-19.2000MHz](#) [AST3TDATAACJ5-38.8800MHz](#)  
[SiT5155AI-FK-33E0-10.000000F](#) [CVT32-10.000](#) [SIT5356AI-FQ-33E0-25.000000X](#) [SIT5357AI-FQ-33N0-100.000000X](#) [DS32KHZSN+T&R](#)  
[XTCLH25M000THJA0P0](#) [LFTCXO075793Cutt](#) [LFTCXO077229Cutt](#) [LFPTXO000002Bulk](#) [LFTCXO077228Cutt](#) [LFTCXO077230Cutt](#)  
[LFTCXO075792Cutt](#) [AST3TQ53-T-10.000MHz-5-C](#) [ATX-11-F-26.000MHz-F05-T](#) [ATX-11-F-27.000MHz-F05-T](#) [ATX-12-F-32.000MHz-](#)  
[F05-T](#) [ATX-13-F-26.000MHz-F05-T](#) [I538-2O7- 25.000 MHz](#) [I537-2O7- 39.000 MHz](#) [I537-2O7- 25.000 MHz](#) [ECS-TXO-2016-33-320-TR](#)  
[ECS-TXO-2016-33-120-TR](#) [ECS-TXO-2016-33-250-TR](#) [ECS-TXO-2016-33-200-TR](#) [ECS-TXO-20CSMV-AC-260-AY-TR](#) [TG2016SMN](#)  
[26.0000M-MCGNNM0](#) [TG2016SMN 25.0000M-MCGNNM0](#) [TG2016SMN 25.0000M-MCGNNM3](#) [TG2520SMN 16.0000M-MCGNNM0](#)  
[TG2520SMN 25.0000M-MCGNNM0](#) [TG2520SMN 40.0000M-ECGNNM0](#) [TG2520SMN 24.0000M-ECGNNM0](#) [TG2520SMN 20.0000M-](#)  
[MCGNNM0](#) [TG2520SMN 30.0000M-ECGNNM0](#) [TG2520SMN 30.000M-MCGNNM0](#) [TG2520SMN 27.0000M-MCGNNM3](#) [TG2520SMN](#)  
[32.0000M-MCGNNM3](#) [TG2520SMN 32.0000M-ECGNNM3](#) [LFPTXO000001Bulk](#) [LFTCXO063711BULK](#) [LFTCXO063713BULK](#)  
[LFTCXO063715BULK](#)