

**Description**

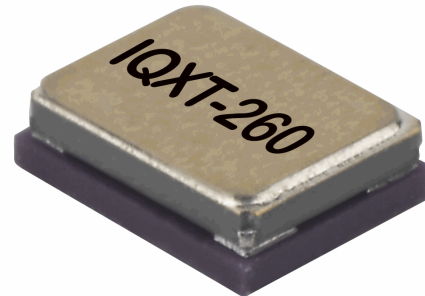
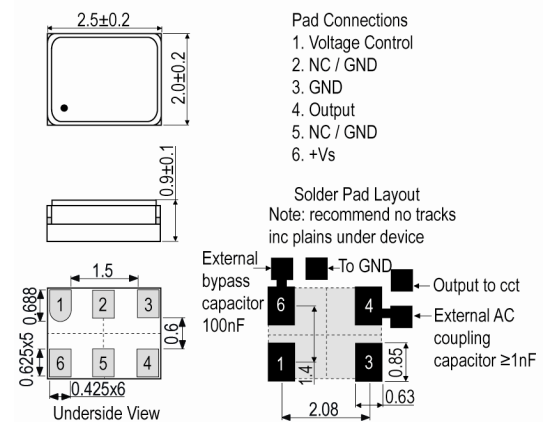
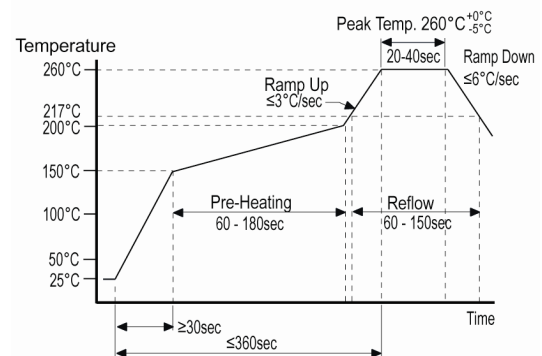
- The IQXT-260-17 employs an analogue ASIC for the oscillator and a high-order temperature compensation circuit in a 2.5 x 2.0mm size package.
- Model IQXT-260-17
- Model Issue number 2

**Frequency Parameters**

- Frequency 19.20MHz
- Frequency Tolerance  $\pm 1.00$ ppm
- Tolerance Condition @ 25°C  $\pm 2^\circ\text{C}$
- Frequency Stability  $\pm 0.50$ ppm
- Operating Temperature Range  $-30.00$  to  $85.00^\circ\text{C}$
- Ageing  $\pm 0.7$ ppm max over 1yr @ 25°C
- Frequency Stability: TA varied over operating temperature range, measurement referenced to frequency observed with  $F_{ref} = (F_{max} + F_{min})/2$ ,  $V_s = 1.8\text{V}$ ,  $V_C = 0.9\text{V}$  and load =  $10\text{k}\Omega // 10\text{pF}$ .
- Frequency Slope (minimum of one frequency reading every 2°C and  $V_C = 0.9\text{V}$ ):  $-10^\circ\text{C}$  to  $60^\circ\text{C}$ :  $0.05$ ppm/°C max
- Frequency Drift (calculated from frequency slope with temperature varied at a maximum of  $1.92^\circ\text{C}/\text{min}$  ( $0.032^\circ\text{C}/\text{s}$ ) over  $-10^\circ\text{C}$  to  $60^\circ\text{C}$ ):  $1.6$ ppb/sec max
- Frequency Slope (minimum of one frequency reading every 2°C and  $V_C = 0.9\text{V}$ ):  $-30^\circ\text{C}$  to  $85^\circ\text{C}$ :  $0.1$ ppm/°C max
- Frequency Drift (calculated from frequency slope with temperature varied at a maximum of  $0.96^\circ\text{C}/\text{min}$  ( $0.016^\circ\text{C}/\text{s}$ ) over  $-30^\circ\text{C}$  to  $85^\circ\text{C}$ ):  $1.6$ ppb/sec max
- Note: Frequency Drift rate is calculated from the equation  $\text{ppb/s} = ^\circ\text{C/s} \times \text{ppb}/^\circ\text{C}$ .
- Small Thermal Cycle Frequency Slope (measured at  $0.5^\circ\text{C}$  intervals over any  $5^\circ\text{C}$  heating and  $5^\circ\text{C}$  cooling cycle, at a minimum rate of  $1^\circ\text{C}/\text{minute}$  within the operating temperature range):  $50$ ppb/°C max  
(Note: Discard the first  $0.5^\circ\text{C}$  interval of each heating and cooling cycle.)
- Small Thermal Cycle Hysteresis (difference in frequency measurements over any  $5^\circ\text{C}$  heating and  $5^\circ\text{C}$  cooling cycle, at a minimum rate of  $1^\circ\text{C}/\text{minute}$  within the operating temperature range):  $50$ ppb pk-pk max
- Supply Voltage Variation ( $\pm 5\%$  change @  $25^\circ\text{C}$ ):  $\pm 0.1$ ppm max
- Load Variation ( $\pm 10\%$  change @  $25^\circ\text{C}$ ):  $\pm 0.2$ ppm max
- Reflow Variation (after two consecutive reflows as per profile shown and 1hr recovery @  $25^\circ\text{C}$ ):  $\pm 1$ ppm max
- Note: Parts should be shielded from drafts causing unexpected thermal gradients. Temperature changes due to ambient air currents can lead to short term frequency drift.

**Electrical Parameters**

- Supply Voltage 1.8V  $\pm 5\%$
- Current Draw 1.500mA
- Supply Current (@  $T_A = 25^\circ\text{C}$ ,  $V_s$  max and load =  $10\text{k}\Omega // 10\text{pF}$ ): 1.5mA max


**Outline (mm)**

**Pb-Free Reflow**

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**Frequency Adjustment**

- Pulling  $\pm 15.6\text{ppm}$  to  $\pm 24.0\text{ppm}$
- Control Voltage  $0.9\text{V} \pm 0.6\text{V}$
- Input Impedance  $500\text{k}\Omega$
- Input Impedance: Measured between control voltage and GND pins.
- Linearity (deviation from a straight line curve fit): 20% max

**Output Details**

- Output Compatibility Clipped Sine
- Drive Capability  $10\text{k}\Omega//10\text{pF} \pm 10\%$
- Output Voltage Level (@  $T_A=25^\circ\text{C}$ ,  $V_s$  min and load= $10\text{k}\Omega//10\text{pF}$ ):  $0.8\text{V}$  pk-pk min
- Start Up Time (frequency within  $\pm 0.5\text{ppm}$  of steady state frequency):  $0.5\text{ms}$  max
- Output: DC coupled
- Note: AC-coupled output requires an external capacitor,  $\geq 1\text{nF}$  recommended.

**Noise Parameters**

- Phase Noise @  $25^\circ\text{C}$  (max):
  - 86dBc/Hz @ 10Hz
  - 110dBc/Hz @ 100Hz
  - 137dBc/Hz @ 1kHz
  - 143dBc/Hz @ 10kHz
  - 150dBc/Hz @ 100kHz
- Harmonics: -5dBc max

**Environmental Parameters**

- Storage Temperature Range:  $-40$  to  $85^\circ\text{C}$
- Shock: MIL-STD-202 M213: Half sine wave acceleration of  $3000\text{G}$  peak amplitude, duration  $0.3\text{ms}$ , velocity  $12.3\text{ft/s}$ .
- Vibration: JESD22-B103-B:  $10\text{G}$  peak acceleration for  $20\text{mins}$ , 12 cycles in each of the 3 orientations, tested from  $10\text{-}2000\text{Hz}$ .
- Moisture Resistance: MIL-STD-202 M106g:  $1000\text{hrs}$  @  $85^\circ\text{C}$ ,  $85\%$  RH, biased.
- Thermal Cycling: JESD22 Method JA-104C:  $1000$  temperature cycles, where each cycle consists of a  $25\text{mins}$  soak time @  $-40^\circ\text{C}$  followed by a  $25\text{mins}$  soak time @  $85^\circ\text{C}$ , with a  $60\text{secs}$  maximum transition time between temperatures, air to air transition.
- Note: Frequency shift  $\leq 1\text{ppm}$  after environmental conditions.

**Manufacturing Details**

- Maximum Process Temperature:  $260^\circ\text{C}$  ( $40\text{secs}$  max)

**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*

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С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

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- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
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- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

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- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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