

ISSUE 1; October 2017

### Description

- The IQXO-940 combines very low RMS phase jitter and tight frequency stability in a small 5 x 3.2mm SMD package.
- Applications:
  - Basestation
  - Communications
  - Consumer Products
  - DSL/ADSL
  - Ethernet
  - WiFi
  - WiMAX/WLAN
- Features:
  - 0.5 ps integrated RMS phase jitter (12kHz to 20MHz)
  - CMOS, LVPECL, or LVDS Output options
  - Wide frequency range
  - Low power differential outputs
  - Small form factor

### Frequency Parameters

- Frequency: 8.0MHz to 1.5GHz
- Frequency Stability:  $\pm 10.00\text{ppm}$  to  $\pm 20.00\text{ppm}$
- Frequency Stability (including tolerance, temperature range, supply voltage variation, load variation and 10 years ageing at 25°C)

### Electrical Parameters

- Supply Voltage Options:
  - 2.5V  $\pm 5\%$
  - 3.3V  $\pm 10\%$
- Supply Current:
  - CMOS 30mA max
  - LVPECL 65mA max
  - LVDS 40mA max

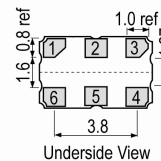
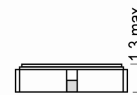
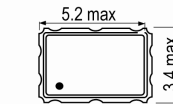
### Operating Temperature Ranges

- -40 to 85°C

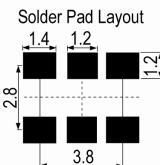
### Output Details

- Output Compatibility: CMOS/LVPECL/LVDS
- Output Characteristics (CMOS up to 200MHz):
  - Load: 15pF
  - Output Low (Vol): 10%Vs max
  - Output High (Voh): 90%Vs min
  - Duty Cycle @ 50% Vs: 48/52% max
  - R/F Time (@ 90%/10%): 3ns max
  - Phase Jitter (12kHz-20MHz): 0.5ps rms max
- Output Characteristics (LVPECL):
  - Load: 50Ω
  - Output Low (Vol): Vs-1.6V max
  - Output High (Voh): Vs-1.03V min
  - Duty Cycle (@ Vs-1.3V): 45/55% max
  - R/F Time (@ 80%/20%): 0.6ns max
  - Phase Jitter (12kHz-20MHz): 0.5ps rms max
- Output Characteristics (LVDS):
  - Load: 100Ω
  - Differential Output Voltage: 350mV
  - Duty Cycle (@ 1.25V): 45/55% max (600MHz+)
  - R/F Time: 0.6ns max
  - Phase Jitter (12kHz-20MHz): 0.5ps rms max

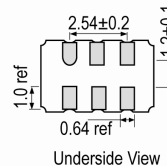
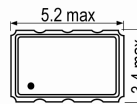
### Outline (mm) 1.3mm package height



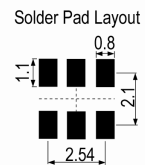
- Pad Connections
1. Enable/Disable or N/C
  2. Enable/Disable or N/C
  3. GND
  4. Output (CMOS)
  5. Output (LVPECL/LVDS) or N/C
  6. +Vs



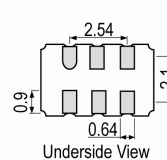
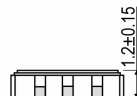
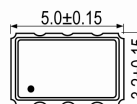
### Outline (mm) 1.2mm package height



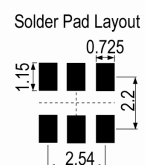
- Pad Connections
1. Enable/Disable or N/C
  2. Enable/Disable or N/C
  3. GND
  4. Output (CMOS)
  5. Output (LVPECL/LVDS) or NC
  6. +Vs



### Outline (mm) = 1.2±0.15mm package height



- Pad Connections
1. Enable/Disable or N/C
  2. Enable/Disable or N/C
  3. GND
  4. Output (CMOS)
  5. Output (LVPECL/LVDS) or N/C
  6. +Vs



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### Output Control

- Enable/Disable:  
Logic '1' (70%Vs min) to pad 1 or no connection enables oscillator output  
Logic '0' (30%Vs max) to pad 1 disables oscillator output

### Environmental Parameters

- Shock: MIL-STD-883, Method 2002
- Storage Temperature Range: -55 to 125°C
- Humidity: after 48 hours at 85 °C ±2 °C 85 % relative humidity non-condensing
- Thermal Shock: MIL-STD-883, Method 1011
- Vibration: MIL-STD-883, Method 2007

### Ordering Information

- \*minimum information required  
Frequency\*  
Model\*  
Output Type\*  
Pad 1 or 2 function\*  
Supply Voltage\*  
Frequency Stability\*  
Operating Temperature Range\*

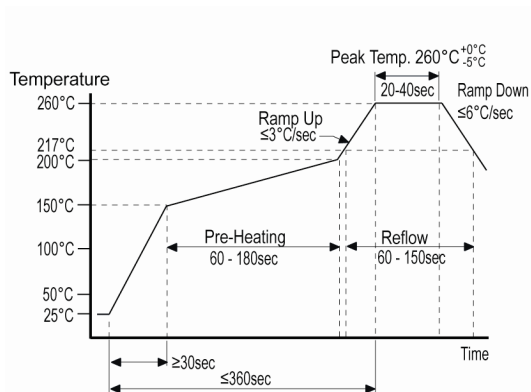
### Compliance

- RoHS Status (2015/863/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): Not Applicable

### Packaging Details

- Pack Style: Bulk Loose in bulk pack  
Pack Size: 1
- Pack Style: Reel Tape & reel in accordance with EIA-481-D  
Pack Size: 2,000

### Pb-Free Reflow



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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	%
8.0MHz	1.5GHz	-40 to 85	-	-	-	-

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