

ISSUE 1; October 2020

Description

- The IQXO-935 offers ultra low rms phase jitter in a small 5 x 3.2mm SMD package (including a low profile 1mm height option for CMOS products). Available in industry standard frequencies from 1MHz to 200MHz, as well as for custom frequency development.
- Applications:
 - Base stations
 - Communications
 - Consumer
 - DSL/ADSL
 - Ethernet
 - Wi-Fi
 - WiMAX/W-LAN
- Features:
 - Ultra Low Jitter 0.05 to 0.3 ps integrated 12kHz to 20MHz
 - Excellent temperature stability
 - CMOS, LVPECL, LVDS output options
 - Wide frequency range
 - Low power differential outputs
 - Small form factor



Frequency Parameters

- Frequency: 1.0MHz to 200.0MHz
- Frequency Stability: $\pm 10.00\text{ppm}$ to $\pm 20.00\text{ppm}$
- Ageing: $\pm 3\text{ppm}$ max in 1st year at 25°C

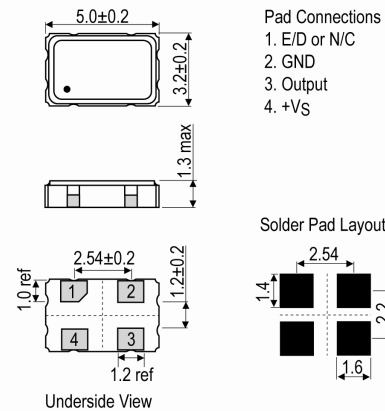
Electrical Parameters

- Frequency Stability (including temperature range, supply voltage variation, load variation and 10 years ageing at 25°C): $\pm 30\text{ppm}$ to $\pm 50\text{ppm}$
- Supply Voltage Options:
 - 3.3V $\pm 10\%$
 - 2.5V $\pm 5\%$
- Supply Current:
 - LVC MOS 40mA max (dependant upon frequency and voltage)
 - LVPECL 65mA max
 - LVDS 65mA max

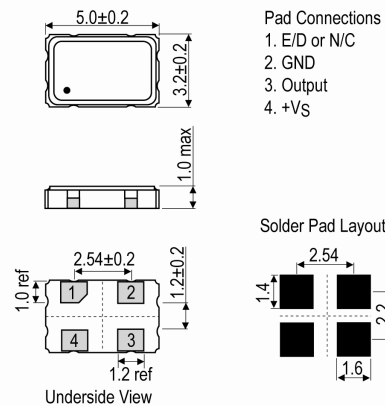
Operating Temperature Ranges

- -10 to 70°C

Outline (mm) 4 pad pkg, 1.3mm height



Outline (mm) = 4 pad pkg, 1.0mm height



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Output Details

- Output Compatibility CMOS/LVPECL/LVDS
- CMOS output:
 - Load 15pF max
 - Output Voltage Low (Vol): 10%Vs max
 - Output Voltage High (Voh): 90%Vs min
 - Duty Cycle: 40/60% max
 - R/F time (80%-20%): 10ns max
 - Phase Jitter (12kHz-20MHz): 0.3ps rms max
 - Start-Up Time: 10ms max
- LVPECL output:
 - Output Voltage High (Voh) 50Ω (Vs-1.6V) max
 - Output Voltage Low (Vol) 50Ω (Vs-1.03V) min
 - Duty Cycle (@ Vs-1.3V): 45/55% max
 - R/F time (80%-20%): 1ns max
 - Phase Jitter (12kHz-20MHz): 0.3ps rms max
 - Start-Up Time: 10ms max
- LVDS output:
 - Load 100Ω
 - Differential Output Voltage Swing (Vod): 350mV
 - Duty Cycle (@ 1.25V): 45/55% max
 - R/F time (100Ω / 10pF): 1ns max
 - Phase Jitter (12kHz-20MHz): 0.3ps rms max
 - Start-Up Time: 10ms max

Output Control

- Output Control Options
 - pad 1 for 4 pad package style: Enable/Disable or No Connection
 - pad 1 or 2 for 6 pad package style: Enable/Disable and/or No Connection
- Enable/Disable:
≥70%Vs to E/D or open-circuit (internal pull-up resistor):
Output Enabled
≤30%Vs to E/D: Output Disabled

Environmental Parameters

- Shock: MIL-STD-883, Method 2002
- Storage Temperature Range: -55 to 125°C
- Thermal Shock: MIL-STD-883, Method 1011
- Vibration: MIL-STD-883, Method 2007
- Operable Temperature Range: -40 to 85°C

Manufacturing Details

- Reflow Soldering Temperature: 260°C max for 20-40sec max

Ordering Information

- *minimum information required
 - Frequency*
 - Model*
 - Supply Voltage*
 - Package type*
 - Output type*
 - Frequency Stability*
 - Operating Temperature Range*

Compliance

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

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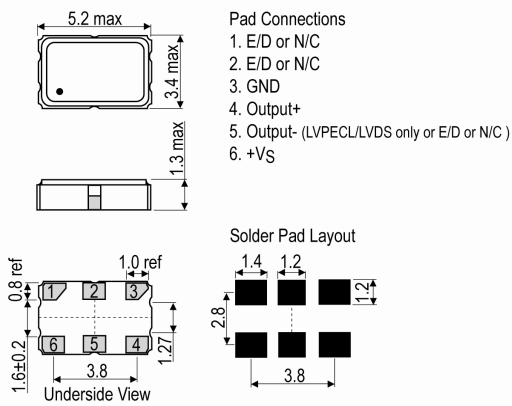
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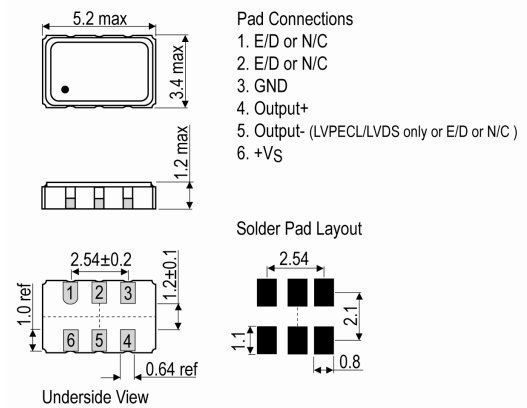
Packaging Details

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

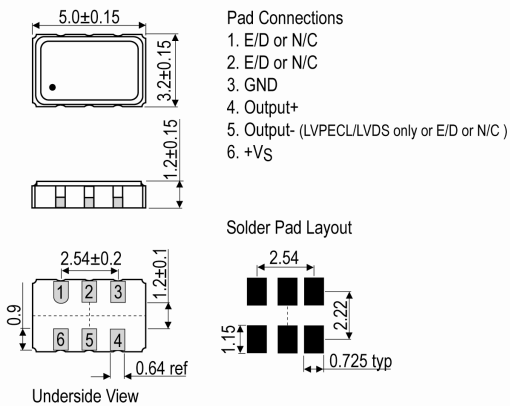
Outline (mm) = 6 pad pkg, 1.3mm height



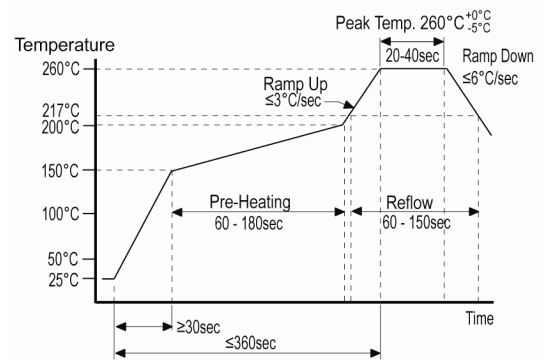
Outline (mm) = 6 pad pkg, 1.2mm height



Outline (mm) NONE = 6 pad pkg, 1.2±0.15mm height



Pb-Free Reflow



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	%
1.0MHz	200.0MHz	-10 to 70	±10.0	-	-	-

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