

ISSUE 1; September 2016

Description

- The IQXV-93 VCXO combines very low RMS phase jitter and low supply current in an industry standard 2.5 x 2.0mm SMD package in frequencies from 8MHz to 1.5GHz.
- Features:
 - CMOS, LVPECL or LVDS output options
 - Low power differential outputs
 - Wide frequency range
 - <1ps integrated RMS phase jitter (12kHz to 20MHz)
- Applications:
 - Base Stations
 - Communications
 - Consumer
 - SONET / SDH
 - WiMAX / W-LAN
 - Ethernet (10G/40G)

Frequency Parameters

- Frequency 8.0MHz to 1.5GHz
- Frequency Stability $\pm 10.00\text{ppm}$ to $\pm 50.00\text{ppm}$

Electrical Parameters

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

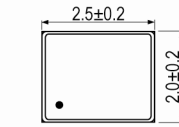
Frequency Adjustment

- Pulling $\pm 35\text{ppm}$ min APR
- Voltage Control:
 - Absolute Pull Range (APR): $\pm 35\text{ppm}$ min
 - Total Pull Range: (frequency shift from minimum to maximum control voltage): 50 to 200ppm
 - Control Voltage (nominal 1.65V): 0 to 3.3V
 - Linearity (VC=0.3 to 3V): 15% max
 - Slope: Positive
 - Modulation Bandwidth (VC=0.3 to 3V): 10kHz min
 - Input Impedance: 1M Ω min

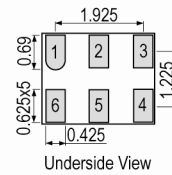
Operating Temperature Ranges

- -40 to 85°C

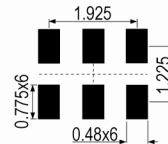
Outline (mm)



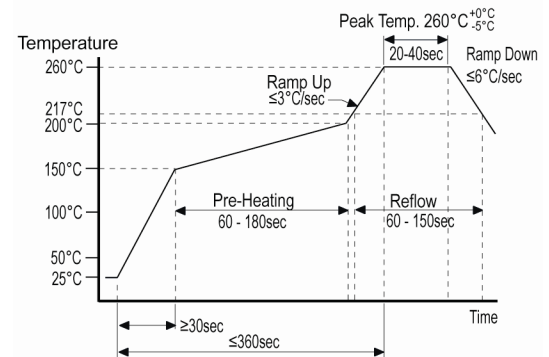
- Pad Connections
1. Voltage Control
 2. Enable/Disable or NC
 3. GND
 4. Output
 5. Output (LVPECL/LVDS) or E/D or NC
 6. +Vs



Solder Pad Layout



Pb-Free Reflow



Sales Office Contact Details:

UK: +44 (0)1460 270200

USA: +1.760.318.2824

Email: info@iqdfrequencyproducts.com

Web: www.iqdfrequencyproducts.com

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): 45/55% max
Rise/Fall Time (@ 90%/10%): 3ns max
RMS Phase Jitter (12kHz-20MHz): 0.9ps typ
- Output Characteristics (LVPECL):
Load: 50Ω
Output Low (VoL): Vs-1.62V max
Output High (VoH): Vs-1.025V min
Duty Cycle (@ Vs-1.3V): 45/55% max
Rise/Fall Time (@ 80%/20%): 0.6ns max
RMS Phase Jitter (12kHz-20MHz): 0.9ps typ
- Output Characteristics (LVDS):
Load: 100Ω
Differential Output Voltage: 350mV
Duty Cycle (@ 1.25V): 45/55% max
Rise/Fall Time: 0.6ns max
RMS Phase Jitter (12kHz-20MHz): 1.5ps typ

Output Control

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

Noise Parameters

- Phase Noise @ 25°C (typ for 77.760MHz, LVPECL):
-65dBc/Hz @ 10Hz
-95dBc/Hz @ 100Hz
-116dBc/Hz @ 1kHz
-126dBc/Hz @ 10kHz
-131dBc/Hz @ 100kHz
- Phase Noise @ 25°C (typ for 156.250MHz, LVPECL):
-77dBc/Hz @ 10Hz
-101dBc/Hz @ 100Hz
-110dBc/Hz @ 1kHz
-118dBc/Hz @ 10kHz
-124dBc/Hz @ 100kHz

Environmental Parameters

- Storage Temperature Range: -55 to 125°C
- Mechanical Shock: MIL-STD-883, Method 2002
- Vibration: MIL-STD-883, Method 2007
- Thermal Shock: MIL-STD-883, Method 1011
- Gross and Fine Leak: MIL-STD-883, Method 1014
- Humidity: After 48hrs @ 85°C ±2°C / 85% RH non-condensing.

Manufacturing Details

- Maximum Process Temperature: 260°C (40secs max)

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USA: +1.760.318.2824

Email: info@iqdfrequencyproducts.comWeb: www.iqdfrequencyproducts.com

Ordering Information

- Frequency*
- Model*
- Output Type*
- Pad 2 or 5 Function*
- Frequency Stability*
- Operating Temperature Range*
- Supply Voltage*
- (*minimum required)

Compliance

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

Packaging Details

- Pack Style: Reel Tape & reel in accordance with EIA-481-D
Pack Size: 3,000

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	±10.0	-	-	-

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