

ISSUE 1; May 2016

Description

- The IQXV-90 selectable VCXO combines low RMS phase jitter and low power with the ability to select the output frequency from up to four factory-configured frequencies by controlling two Frequency Select (FS) pins (e.g. 122.88 or 153.6MHz). This enables reductions in part count and built-in upgrade paths to increase design flexibility and reduce costs.
- Applications:
Base stations
Consumer
Communications
DSL/ADSL
Ethernet
Wi-Fi
WiMAX/W-LAN
- Features:
Selectable output frequencies (Up to 4)
Low power differential outputs
<1ps integrated RMS phase jitter (12kHz to 20MHz)
Wide frequency range
CMOS, LVPECL, LVDS output options

Frequency Parameters

- Frequency 8.0MHz to 1.5GHz
- Frequency Stability $\pm 10.00\text{ppm}$ to $\pm 20.00\text{ppm}$
- Frequency Control Selection Function:
Frequency 1: FS1=0, FS2=0
Frequency 2: FS1=1, FS2=0
Frequency 3: FS1=0, FS2=1
Frequency 4: FS1=1, FS2=1
- 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

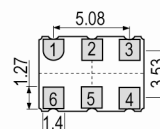
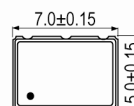
Frequency Adjustment

- Pulling $\pm 50\text{ppm}$ min APR
- Voltage Control:
Absolute Pull Range: (APR) $\pm 50\text{ppm}$ min
Total Pull Range: (Frequency shift from minimum to maximum control voltage): 50 to 250ppm max
Control Voltage (Nominal 1.65V): 0 to 3.3V
Linearity (Control voltage 0.3 to 3V): 10% max
Slope: Positive only
Modulation BW (Control voltage 0.3 to 3V): 10kHz min
Input Impedance: 1M Ω min

Operating Temperature Ranges

- -40 to 85°C

Outline (mm) 1.6mm package height

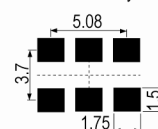


Underside View

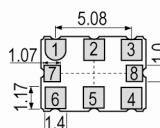
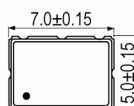
Pad Connections

1. Voltage Control
2. FS1 or Enable/Disable or NC
3. GND
4. Output (CMOS)
5. Output (LVPECL/LVDS) or E/D or NC
6. +Vs

Solder Pad Layout



Outline (mm) 1.6mm package height

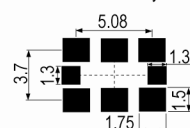


Underside View

Pad Connections

1. Voltage Control
2. FS1 or Enable/Disable or NC
3. GND
4. Output (CMOS)
5. Output (LVPECL/LVDS), E/D or NC
6. +Vs
7. FS1 or NC
8. FS2 or NC

Solder Pad Layout



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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): 0.4 to 1ps 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): 48/52% max (45/55% over 600MHz)
R/F Time (@ 80%/20%): 0.6ns max
Phase Jitter (12kHz-20MHz): 0.4 to 1ps rms max
- Output Characteristics (LVDS):
Load: 100Ω
Differential Output Voltage: 350mV
Duty Cycle (@ 1.25V): 48/52% (45/55% over 150MHz)
R/F Time: 0.6ns max
Phase Jitter (12kHz-20MHz): 0.4 to 1ps rms max

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

Noise Parameters

- Phase Noise (typ at 77.76MHz):
-68dBc/Hz @ 10Hz
-95dBc/Hz @ 100Hz
-120dBc/Hz @ 1kHz
-125dBc/Hz @ 10kHz
-128dBc/Hz @ 100kHz
- Phase Noise (typ at 155.52MHz):
-62dBc/Hz @ 10Hz
-90dBc/Hz @ 100Hz
-112dBc/Hz @ 1kHz
-118dBc/Hz @ 10kHz
-120dBc/Hz @ 100kHz
- Phase Noise (typ at 622.08MHz):
-48dBc/Hz @ 10Hz
-78dBc/Hz @ 100Hz
-101dBc/Hz @ 1kHz
-107dBc/Hz @ 10kHz
-108dBc/Hz @ 100kHz

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

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Ordering Information

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

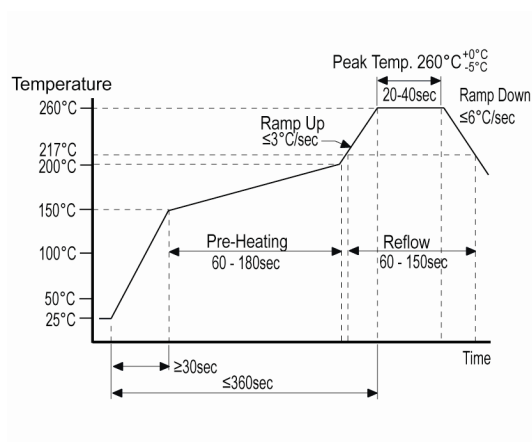
Compliance

- RoHS Status (2011/65/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: 2,000
- Pack Style: Bulk Loose in bulk pack
Pack Size: 1

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

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