

ISSUE 1; November 2017

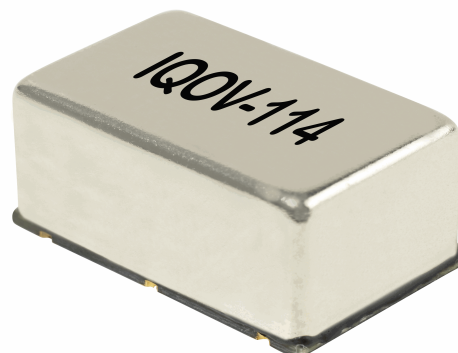
Description

- Oven Controlled Crystal Oscillator (OCXO) in a sealed metal package mounted on an FR4 base.
- Developed Frequencies: 8.192MHz, 10.0MHz, 12.80MHz, 13.0MHz, 15.36MHz, 16.384MHz, 19.2MHz, 20.0MHz, 30.72.0MHz

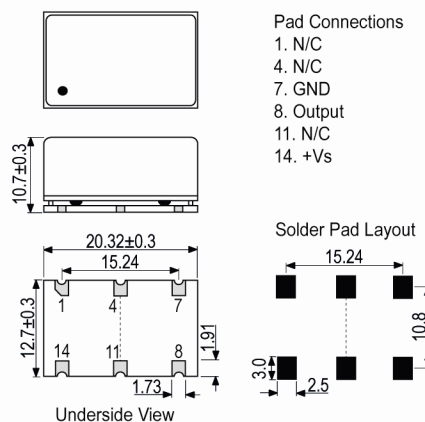


Frequency Parameters

- Frequency 8.192MHz to 30.72MHz
- Frequency Tolerance ± 200.00 ppb
- Frequency Stability ± 1.00 ppb to ± 5.00 ppb
- Ageing ± 0.5 ppb max per day, ± 50 ppb max per year
- Frequency Tolerance: Measurement referenced to frequency observed with $T_A=25^\circ\text{C}$, $V_s=3.3\text{V}$ and after 15 minutes of operation, within 30 days after ex-works.
- Frequency Stability: TA varied across the operating temperature range, measurement referenced to frequency observed with $f_{\text{ref}}=(f_{\text{max}}+f_{\text{min}})/2$, $V_s=3.3\text{V}$, load=15pF and temperature variable speed less than 2°C per minute.
- Supply Voltage Variation (measurement referenced to frequency observed with $T_A=25^\circ\text{C}$, V_s varied from 3.13V to 3.47V and load=15pF): ± 2 ppb max
- Load Variation (measurement referenced to frequency observed with $T_A=25^\circ\text{C}$, $V_s=3.3\text{V}$ and load 15pF $\pm 5\%$): ± 2 ppb max
- Ageing: V_s and T_A constant, measurement referenced to frequency observed with $T_A=25^\circ\text{C}$, $V_{\text{cc}}=3.3\text{V}$, and after 30 days of operation.
- Short Term Stability - Allan Variance (temperature stable, no EMI/EMC or other interference) test after power for 1hr ref. to 25°C ; 1s): 0.01ppb max



Outline (mm)



Electrical Parameters

- Supply Voltage 3.3V $\pm 5\%$
- Current Draw (@ 25°C):
Warm up: 1000mA max
Steady state: 500mA max

Operating Temperature Ranges

- -40 to 85°C

Output Details

- Output Compatibility HCMOS
- Drive Capability 15pF
- Output Low Vol (@ $V_s=3.3\text{V}$, load=15pF): 0.4V max
Output High Voh (@ $V_s=3.3\text{V}$, load=15pF): 2.4V min

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Noise Parameters

- Phase Noise (typ @ 10MHz):
 - 120dBc/Hz @ 10Hz
 - 140dBc/Hz @ 100Hz
 - 150dBc/Hz @ 1kHz
 - 155dBc/Hz @ 10kHz
 - 155dBc/Hz @ 100kHz
 - 155dBc/Hz @ 1MHz
- Phase Noise (max @ 10MHz):
 - 110dBc/Hz @ 10Hz
 - 130dBc/Hz @ 100Hz
 - 145dBc/Hz @ 1kHz
 - 150dBc/Hz @ 10kHz
 - 150dBc/Hz @ 100kHz
 - 150dBc/Hz @ 1MHz

Environmental Parameters

- Storage Temperature Range: -55 to 105°C
- ESD Levels: JEDEC JS-001-2010:
 - HBM, Class 2: 2000V to 4000V
 - Machine Model, Class B: 200V to 400V
- Shock: IEC 60068-2-27, Test Ea: 50g, 11ms duration, 1/2 sine wave, 3 times in each of 3 mutually perpendicular planes.
- Vibration: IEC 60068-2-06, Test Fc: 10Hz-500Hz, 0.75mm displacement, 10g acceleration, one cycle per 30mins, 3 times in each of 3 mutually perpendicular planes, test 2hrs.
- RoHS Reflow 260°C max for 30sec max

Ordering Information

- Frequency*
Model*
Output
Frequency Stability (over operating temperature range)*
Operating Temperature Range*
Supply Voltage
(*minimum required)
- Example
20.0MHz IQOV-114
HCMOS ±5ppb -40 to 85C 3.3V

Compliance

- RoHS Status (2011/65/EU) Compliant
- REACH Status Compliant
- MSL Rating (JDEC-STD-033): 2

Packaging Details

- Pack Style: Bulk Bulk pack
Pack Size: 1

Electrical Specification - maximum limiting values 3.3V ±5%

Frequency Min	Frequency Max	Temperature Range	Stability (Min)	Current Draw	Rise and Fall Time	Duty Cycle
		°C	ppb	mA	ns	%
8.192MHz	30.72MHz	-40 to 85	±1.0	-	10	45/55%

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