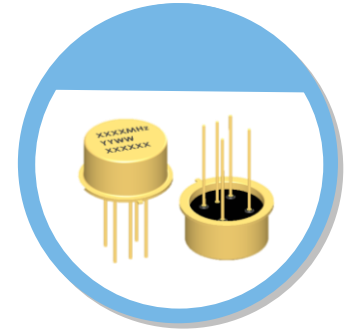


X7(HC-37U) Type

FEATURE

- Gold Electrode, Vacuum Sealed
- High Q Value, High Stability
- Low Phase Noise
- Excellent Shock and Vibration Performance due to 4 Point Mounting
- Improved-G Sensitivity
- Good Aging



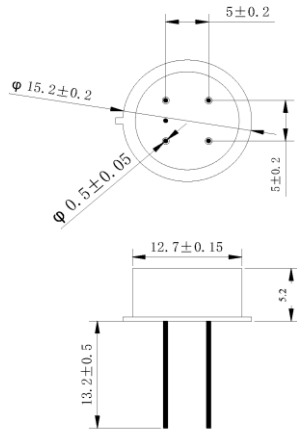
RoHS Compliant

TYPICAL APPLICATION

- Precision OCXO, VCXO and TCXO oscillators

DIMENSION (mm)

PIN	FUNCTION
1	CASE
2	CRYSTAL
3	OMIT
4	CRYSTAL
5	OMIT



OPTIONAL HEIGHT:

4.0mm 5.2mm 6.7mm

EQUIVALENT SERIES RESISTANCE (E.S.R)

Frequency Range	MODE(Cut)	E.S.R.
4 MHz ≤ Fo ≤ 8 MHz	AT Fundamental	≤ 20Ω
8 MHz < Fo ≤ 10 MHz	AT 3 rd OT	≤ 40Ω
10 MHz < Fo ≤ 20 MHz	AT 3 rd OT	≤ 30Ω
20 MHz < Fo ≤ 40 MHz	AT 3 rd OT	≤ 20Ω
50 MHz < Fo ≤ 100 MHz	AT 5 th OT	≤ 50Ω
5 MHz < Fo ≤ 20 MHz	SC 3 rd OT	≤ 100Ω
20 MHz < Fo ≤ 40 MHz	SC 3 rd OT	≤ 70Ω

ELECTRICAL SPECIFICATION

Parameter	Min.	Typical	Max.	Unit
Operating Temp. Range	-55		+125	°C
Standard Frequency	10, 12.8, 13, 16.384			MHz
Turn Point	+75°C to +105°C (mode, cut, frequency dependent, other turn points available)			°C
Frequency Tolerance @ Turn Point	±1.5	±3	±5	ppm
Level of Drive		100	500	μW
Shunt Capacitance (C0)			7.0	pF
Insulation Resistance	500MΩ @ DC100V			
Aging	±0.05 to ±1.0			ppm/year

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position.

STANDARD OPTIONS

Nominal Frequency(MHz)	MODE(Cut)	R(Ω)	C0(pF)	C1(fF)	Q(Typical)	Aging(ppm/year)
10 MHz	AT 3 rd OT	< 45	< 2.6	0.44 ± 20%	645k	0.3
12.8 MHz	AT 3 rd OT	< 45	< 2.6	0.85 ± 20%	460k	0.5
16.384 MHz	AT 3 rd OT	< 30	< 3.8	1.60 ± 20%	420k	0.5
5 MHz	SC 3 rd OT	< 130	< 3.0	0.18 ± 20%	2,000k	0.01
10 MHz	SC 3 rd OT	< 70	< 4.0	0.19 ± 20%	1,200k	0.03
12.8 MHz	SC 3 rd OT	< 70	< 4.2	0.26 ± 20%	930k	0.05
16.384 MHz	SC 3 rd OT	< 75	< 4.5	0.20 ± 20%	700k	0.06

Note: not all combination of options are available. Other specifications may be available upon request.