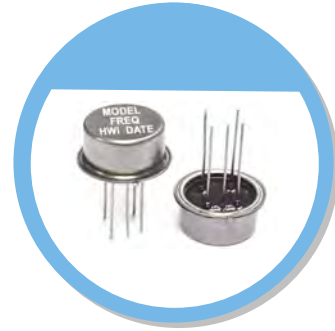


X7(TO-8) Type

FEATURE

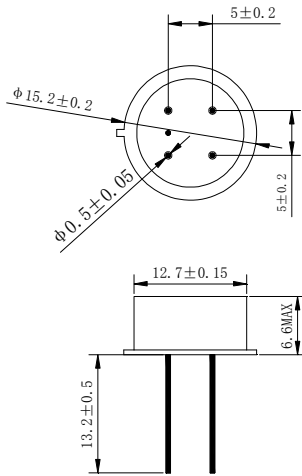
- \varnothing 15 x 6.5mm TO-8 Cold Weld
- Gold electrode, vacuum
- Fast warm up
- High stability, low temperature frequency coefficient
- Good aging and reliability



TYPICAL APPLICATION

- Precision OCXO, VCXO and TCXO oscillators

DIMENSION (mm)



EQUIVALENT SERIES RESISTANCE (E.S.R)

Frequency Range	MODE(Cut)	E.S.R.
4 MHz \leq Fo \leq 8 MHz	AT Fundamental	\leq 20 Ω
8 MHz < Fo \leq 10 MHz	AT 3 rd OT	\leq 40 Ω
10 MHz < Fo \leq 20 MHz	AT 3 rd OT	\leq 30 Ω
20 MHz < Fo \leq 50 MHz	AT 3 rd OT	\leq 20 Ω
50 MHz < Fo \leq 100 MHz	AT 5 th OT	\leq 50 Ω
5 MHz < Fo \leq 20 MHz	SC 3 rd OT	\leq 100 Ω
20 MHz < Fo \leq 40 MHz	SC 3 rd OT	\leq 60 Ω

ELECTRICAL SPECIFICATION

Parameter	Min.	Typical	Max.	Unit
Operating Temp. Range	-55		+105	$^{\circ}$ C
Standard Frequency	5, 10, 12.8, 16.384			MHz
Turn Point	+75 $^{\circ}$ C to +105 $^{\circ}$ C (mode, cut, frequency dependent, other turn points)			$^{\circ}$ C
Frequency Tolerance @ Turn	\pm 1.5	\pm 3	\pm 5	ppm
Level of Drive		100	500	μ W
Shunt Capacitance (C0)			7.0	pF
Insulation Resistance	500M Ω @ DC100V			
Aging	\pm 0.5 to \pm 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	MODE(Cut)	R(Ω)	C0(pF)	C1(fF)	Q(Typical)	Aging(ppm/year)
10 MHz	AT 3 rd OT	< 45	< 2.6	0.44 \pm 20%	645k	0.3
12.8 MHz	AT 3 rd OT	< 45	< 2.6	0.85 \pm 20%	460k	0.5
16.384 MHz	AT 3 rd OT	< 30	< 3.8	1.60 \pm 20%	420k	0.5
5 MHz	SC 3 rd OT	< 110	< 3.0	0.18 \pm 20%	2,200k	0.01
10 MHz	SC 3 rd OT	< 70	< 3.2	0.19 \pm 20%	1,200k	0.03
12.8 MHz	SC 3 rd OT	< 70	< 4.2	0.26 \pm 20%	930k	0.05
16.384 MHz	SC 3 rd OT	< 75	< 4.5	0.20 \pm 20%	780k	0.06

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