



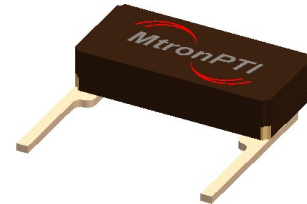
MtronPTI Announces M1380 and M1381 Series High Shock Resistance Through Hole Crystal

M1380 and M1381 Series Through Hole Crystal

Suitable for applications that require a wide temperature range (-55 to 125°C) and high shock (5000 g) environment. Product is in a hermetically sealed miniature ceramic through hole package and can be processed with wave or re-flow soldering.

Key Features:

- Suitable for wave or re-flow soldering
- High stability and low aging
- High shock and vibration resistance
- Hermetically sealed
- Operating Temperature Range: -45°C to + 85°C and -55°C to + 125°C
- Package: 3.7 X 8.0mm Through Hole



Applications:

- Avionics controls
- Satellite communications
- Defense
- Airborne Equipment

Note: Direct replacement for Statek CX1 and CX2 series crystals

Electrical Specifications:

Parameter	Sy mb ol	Min.	Typ.	Max.	Units	Conditions
Mode of Oscillation		Fundamental (AT cut)				
Frequency Range	F ₀	8.000		30.000	MHz	
Frequency Tolerance	DF/ F	See Ordering Information Table			ppm	@ +25 °C
Frequency Stability	DF/ F ₀	See Ordering Information Table			ppm	
Operating Temperature	T _A	See Ordering Information Table			°C	
Aging		-3		+3	ppm/ year	@ +25 °C
Load Capacitance	C _L	See Ordering Information Table (standard is 20 pF)			pF	
Resistance	R _s		60	100	Ω	8.000 – 9.999 MHz
			50	85	Ω	10.000 – 11.999 MHz
			40	75	Ω	12.000 – 15.999 MHz
			35	60	Ω	16.000 – 19.999 MHz
			30	50	Ω	20.000 – 23.999 MHz
			30	40	Ω	24.000 – 30.000 MHz
Shunt Capacitance	C ₀			4	pF	
Drive Level	D _L		100	500	μW	
Insulation Resistance		500			MΩ	

Electrical Specifications:

Parameter	Sym- bol	Min.	Typ.	Max.	Units	Conditions
Mode of Oscilla- tion		Fundamental (XT cut)				
Frequency	F ₀	0.032768			MHz	
Frequency Toler-	DF/F	See Ordering Information			ppm	@ +25 °C
Frequency Stability	DF/F	Parabolic Curve				Ref to +25 °C
Turnover Tempera- ture	T _T	+20	+25	+30	°C	
Parabolic Curve Const.	B	-0.032	-0.035	-0.039	ppm/°C ²	
Operating Temper-	T _A	See Ordering Information			°C	
Aging		-3		+3	ppm/ year	@ +25 °C
Load Capacitance	C _L	See ordering information (standard is 12.5 pF)			pF	
ESR	R _s		40	60	kΩ	standard @ +25 °C
Shunt Capacitance	C ₀		1.6		pF	standard @ +25 °C
Drive Level	D _L			1	μW	standard
Insulation Re- sistance		500			MΩ	

Environmental & Package Specifications:

Storage Temperature	-55°C to 125°C
Mechanical Shock	5000g, 0.3 ms, ½ sine
Vibration	20g / 10-2000 Hz
Gross Leak	Per MIL-STD-202, Method 112 (30 sec. Immersion)
Fine Leak	Per MIL-STD-202, Method 112 (1 x 10 ⁻⁸ atm cc/s of Helium)
Resistance to Solvents	Per MIL-STD-883, Method 2015
Solderability	Per EIAJ-STD-002
Max. Soldering Conditions	+260°C for 10 secs
Package	3.7 x 8.0 x 1.75 mm ceramic with leads

Dimensions:

