



Actual Sizes



Product Description

The NTF tuning fork type quartz crystal provides a reliable, stable, and accurate 32.768 kHz reference. The NTF are available in two package sizes for real-time or low power applications.

Product Features

- Industry standard package
- Rugged, resistant to shock and vibration
- Excellent resistance to heat shock and environmental conditions
- Pb-free and RoHS/Green Compliant

Typical Applications

- Real-time clocks
- Reference for microprocessors' low power/standby modes

Electrical Specifications:

		NTF3238	NTF3226
Nominal Frequency	f	32.768 kHz	
Frequency Tolerance at 25°C		±20 ppm	
Turnover Temperature	T ₀	25°C ±5°C	
Temperature Characteristic	K	-0.038ppm/°C ² Typical Frequency deviation at temperature T ($\Delta f/f = K(T_0 - T)^2$)	
Quality Factor	Q	100,000 typ	90,000 typ
Load Capacitance	C _L	12.5pF	
Series Resistance	R _S	30KΩ max	40KΩ max
Motional Capacitance	C ₁	0.0035pF typ	0.0027pF typ
Shunt Capacitance	C ₀	1.7pF typ	1.5pF typ
Drive Level	P _d	1μW max	
Aging	Δ F/f	First 30 Days: 3.0ppm First Year: 5.0ppm	
Operating Temperature Range		-10 to +60°C	
Storage Temperature Range		-30 to +70°C	

Mechanical:

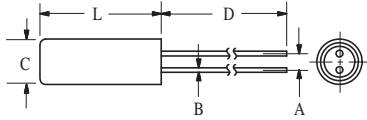
- Shock: MIL-STD-883, Method 2002, Condition B
- Solderability: MIL-STD-883, Method 2003
- Terminal Strength: MIL-STD-202, Method 211, Conditions A & C
- Vibration: MIL-STD-883, Method 2007, Condition A
- Solvent Resistance: MIL-STD-202, Method 215
- Resistance to Soldering Heat: MIL-STD-202, Method 210, Condition B

Environmental:

- Gross Test Leak: MIL-STD-883, Method 1014, Condition C
- Fine Test Leak: MIL-STD-883, Method 1014, Condition A2
- Thermal Shock: MIL-STD-883, Method 1011, Condition A
- Moisture Resistance: MIL-STD-883, Method 1004

Packaging Information:

Package Details

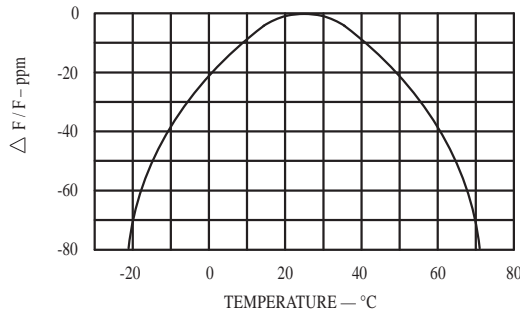


REF	NTF3238	NTF3226
	1.1±0.2	0.8±0.1
A	.043±.008	.031±.004
	0.3±0.07	0.2±0.05
B	.012±.003	.008±.002
	3.1 .122 max	2.1 .083 max
C		
	8.3 .327 max	6.8 .268 max
L		
	9.0 .354 min	5.0 .197 min
D		

Parts will be individually marked, or shipped unmarked in static-free bags labeled with part number.

Scale: None (Dimensions in $\frac{\text{mm}}{\text{inches}}$)

Typical Temperature Characteristic:



Ordering Information

