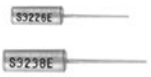
Tuning Fork Quartz Crystals 32.768 kHz Tubular Crystal

Technical Data

NTF3238 / NTF3226 Series



ACTUAL SIZE

Description

The NTF tuning fork type quartz crystal provides the circuit designer with the ultimate in size, performance, and economic trade-offs. This highly reliable, stable, and accurate device is available in two miniature sizes for real-time or low power applications operating from a 32.768 kHz reference frequency.

Applications & Features

- Very small, compact packaging
- Rugged, resistant to shock and vibration
- Excellent resistance to heat shock and environmental conditions
- Ideal for real-time clocks

Electrical Specifications

		NTF3238	NTF3226
Nominal Frequency at 25°C	f	32.768 kHz	
Frequency Tolerance		±20 ppm	
Turnover Temperature	T_O	25°C ±5°C	
Temperature Characteristic	K	-0.038ppm/°C² 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 to 13pF	12 to 13pF
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	Pd	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 and 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 Leak Test:	MIL-STD-883, Method 1014, Condition C
Fine Leak Test:	MIL-STD-883, Method 1014, Condition A2
Thermal Shock:	MIL-STD-883, Method 1011, Condition A
Moisture Resistance:	MIL-STD-883, Method 1004

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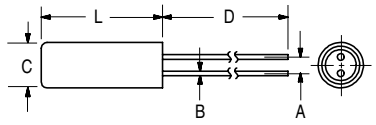
Package Details

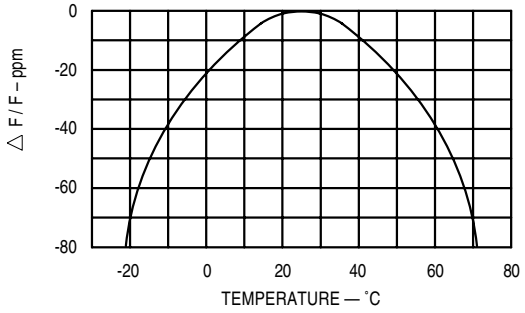


REF	NTF3238	NTF3226
A	1.1±0.2 / .043±.008	0.8±0.1 / .031±.004
B	0.3±0.07 / .012±.003	0.2±0.05 / .008±.002
C	3.1 / .122 max	2.1 / .083 max
L	8.3 / .327 max	6.8 / .268 max
D	9.0 / .354 min	5.0 / .197 min

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

Scale: None (Dimensions in mm / inches)

Typical Temperature Characteristic



Part Numbering Guide

NTF 3226 E

Type — NTF

Package Size
3238 = 3 mm x 8 mm
3226 = 2 mm x 6 mm

C_L (Load Capacitance)
E: 12 ~ 13 pF

All specifications are subject to change without notice.