

## **Tuning Fork Crystal**



#### FEATURES

- Miniature package
- Low cost
- kHz frequency
- Tight tolerance
- 100 % Lead (Pb)-free and RoHS compliant

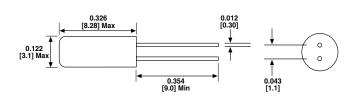


COMPLIANT

The tuning fork type quartz crystal provides ultimate in size, performance and economic trade-offs. So it is used as a clock source in communication equipment, measuring instrument, microprocessor and other time management applications.

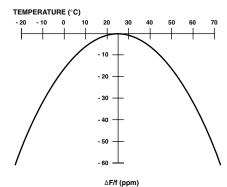
STANDARD ELECTRICAL SPECIFICATIONS						
PARAMETER	SYMBOL	CONDITION	UNIT	MIN	TYPICAL	МАХ
Frequency Range	Fo		kHz		32.768	
Frequency Tolerance	ΔF/F <sub>O</sub>	at 25 °C	ppm		± 20	
Frequency Coefficient	K	ref to 25 °C	ppm/(∆°C)²			- 0.042
Operating Temperature Range	T <sub>OPR</sub>		O°	- 10		+ 60
Storing Temperature Range	T <sub>STG</sub>		С°	- 20		+ 70
Shunt Capacitance	Co		pF		0.85	2
Motional Capacitance	C <sub>1</sub>		fF	1	2	4
Load Capacitance	CL		pF		12.5	
Insulation Resistance	IR	100 V <sub>DC</sub>	MΩ	500		
Drive Level	DL		μW			1
Aging (first year)	Fa	at 25 °C ± 3 °C	ppm	- 5.0		+ 5.0
Equivalent Series Resistance(ESR)	Rs		KΩ			35

#### **DIMENSIONS** in inches [millimeters]



ORDERING INFORMATION				
хтзвт	32.768 kHz	e2		
MODEL	FREQUENCY/kHz	JEDEC LEAD (Pb)-FREE STANDARD		

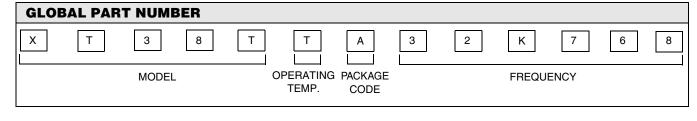
#### PARABOLIC TEMPERATURE CURVE



To determine frequency stability, use parabolic curvature (k). For example: What is stability at 45  $^\circ\text{C}?$ 

1) Change in Temperature (°C) = 45 - 25 = 20 °C

- 2) Change in Frequency = 0.042 ppm\*( $\Delta^{\circ}$ C)
  - $= -0.042 \text{ ppm}^{*}(20)^{2}$
  - = 16.8 ppm (max)

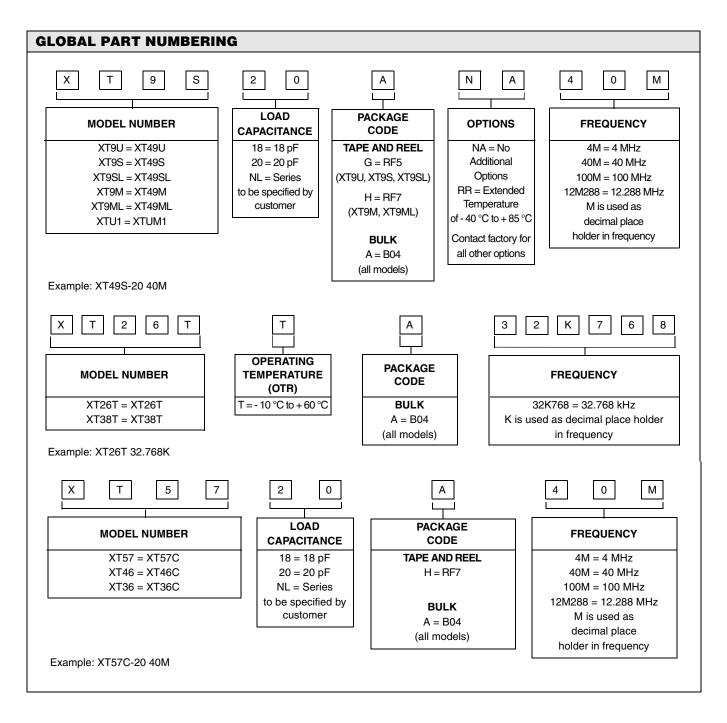


# XT38T

Vishay Dale

**Tuning Fork Crystal** 







Vishay

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