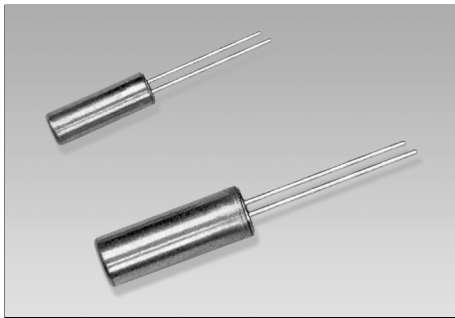


• ETDB Series DT-38 32.768KHz Crystal



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 application.

FEATURES

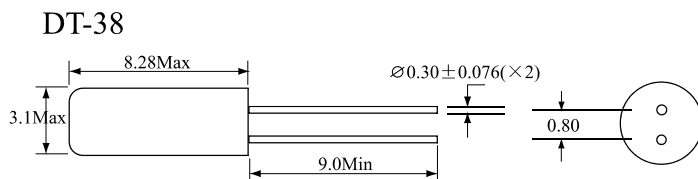
- Miniature Package
- Low Cost
- KHz Frequency
- Tight Tolerance

Electrical Specifications

Item	Type	ETDB	
Frequency Range	F0	32.768KHz(30~100KHz)	
Load Capacitance	CL	12.5pF	
Frequency Tolerance	$\Delta F / F_0$	$\pm 10\text{ppm}, \pm 20\text{ppm}, \pm 100\text{ppm}$ (At 25°C)	
Equivalent Series Resistance	ESR	50K Ω max.	35K Ω max.
Temperature Coefficient	K	$-0.042\text{ppm} * (\Delta^\circ\text{C})^2$ max.	
Operating Temperature Range	T _{OPR}	-10~+60°C	
Storage Temperature Range	T _{STG}	-20~+70°C	
Shunt Capacitance	C0	0.85pF typ.	
Motional Capacitance	C1	2fF typ.	
Insulator Resistance	IR	500M Ω min. (At 100VDC)	
Drive Level	DL	1 μ W max.	
Aging	Fa	$\pm 5\text{ppm}$ max. (At 25°C, Frist year)	
Packing Unit		1000pcs/bag	

**Please contact us for inquiries regarding other Specifications

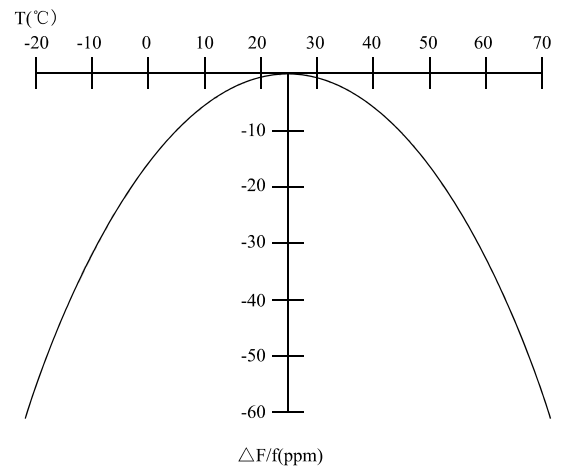
Mechanical Dimensions(mm)



To determine frequency stability, use parabolic curvature(k).
for example: What is stability at 45°C

- 1).change in T(°C)=45-25=20°C
- 2).Change in frequency = $-0.042\text{ppm} * (\Delta^\circ\text{C})^2$
= $-0.042\text{ppm} * (20)^2$
= $-16.8\text{ppm}(\text{max})$

Parabolic Temperature Curve



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Specifications are subject to change without notice