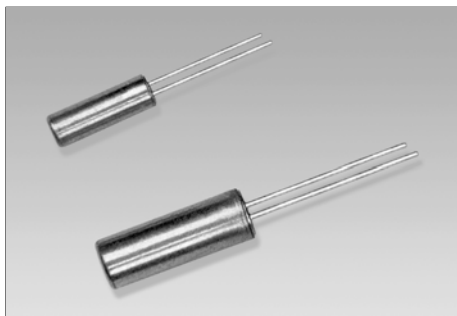




• ETDB Series DT-38 32.768KHz Crystal



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

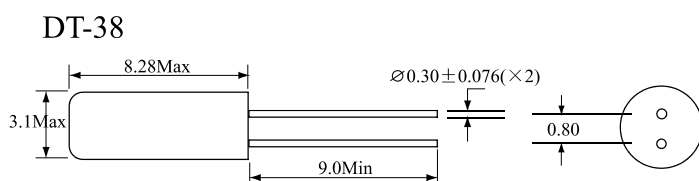
- Miniature Package
- Low Cost
- KHz Frequency
- Tight Tolerance

Electrical Specifications

Item	Type	ETDB	
Frequency Range	F0	32.768KHz(30~100KHz)	
Load Capacitance	CL	12.5pF	
Frequency Tolerance	$\Delta F / F0$	$\pm 10\text{ppm}, \pm 20\text{ppm}, \pm 100\text{ppm}(\text{At } 25^\circ\text{C})$	
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}	$-10\sim+60^\circ\text{C}$	
Storage Temperature Range	T _{STG}	$-20\sim+70^\circ\text{C}$	
Shunt Capacitance	C0	0.85pF typ.	
Motional Capacitance	C1	2fF typ.	
Insulator Resistance	IR	500M Ω min. (At 100V _{DC})	
Drive Level	DL	1 μ W max.	
Aging	Fa	$\pm 5\text{ppm}$ max. (At 25 $^\circ\text{C}$, First 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 $^\circ\text{C}$

- 1). change in T($^\circ\text{C}$)=45-25=20 $^\circ\text{C}$
- 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

