

## Features

Frequency range : 32.768 kHz  
 SMD : Ceramic package  
 External dimensions (mm)  
 L : 3.2 x W : 1.5 x H : 0.75  
 RoHS compliant & Pb free

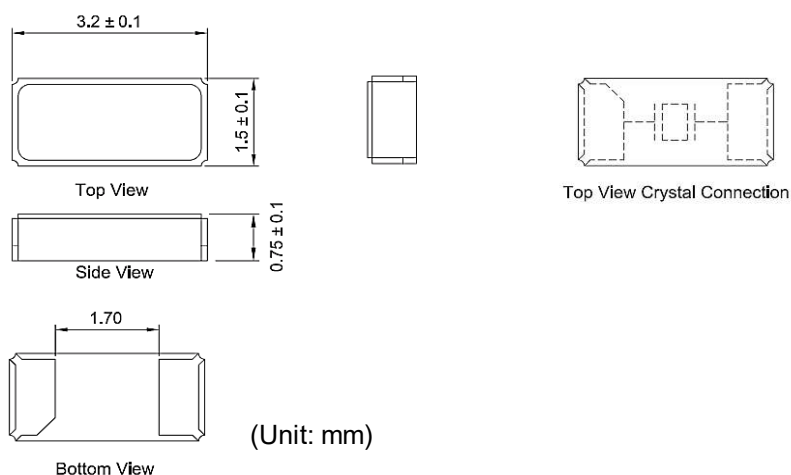
## Applications

Small mobile devices  
 Communication devices  
 Consumer products  
 Commercial & industrial applications

## Electrical Characteristics

Item	Symbol	9HT10	Conditions
Nominal Frequency	$f_0$	32.768 kHz	
Frequency Tolerance	$\Delta f/f_0$	$\pm 10\text{ppm}$ , $\pm 20\text{ppm}$ , $\pm 30\text{ppm}$	at 25°C
Load Capacitance	$C_L$	6pF, 7pF, 9pF, 12.5pF	
Operating Temperature Range	$T_{OTR}$	-40°C ~ +85°C	
		-40°C ~ +125°C	
Storage Temperature Range	$T_{STR}$	-55°C ~ +125°C	
Turnover Temperature	$T_M$	25°C $\pm$ 5°C	
Temperature Coefficient	$\beta$	-0.04 ppm/°C <sup>2</sup> Max.	
Motional Capacitance	$C_1$	3.1 fF Typ.	
Motional Resistance (ESR)	$R_1$	70 kΩ Max.	at 25°C
Drive Level	$D_L$	0.1μW Typ. / 1.0μW Max.	
Aging	$\Delta f/f_0$	$\pm 3$ ppm Max.	at 25°C $\pm$ 3°C, first year
Shunt Capacitance	$C_0$	1.0 pF Typ.	

## Dimensions



## Ordering Information

**9HT10 - 32.768K D Z F - T**

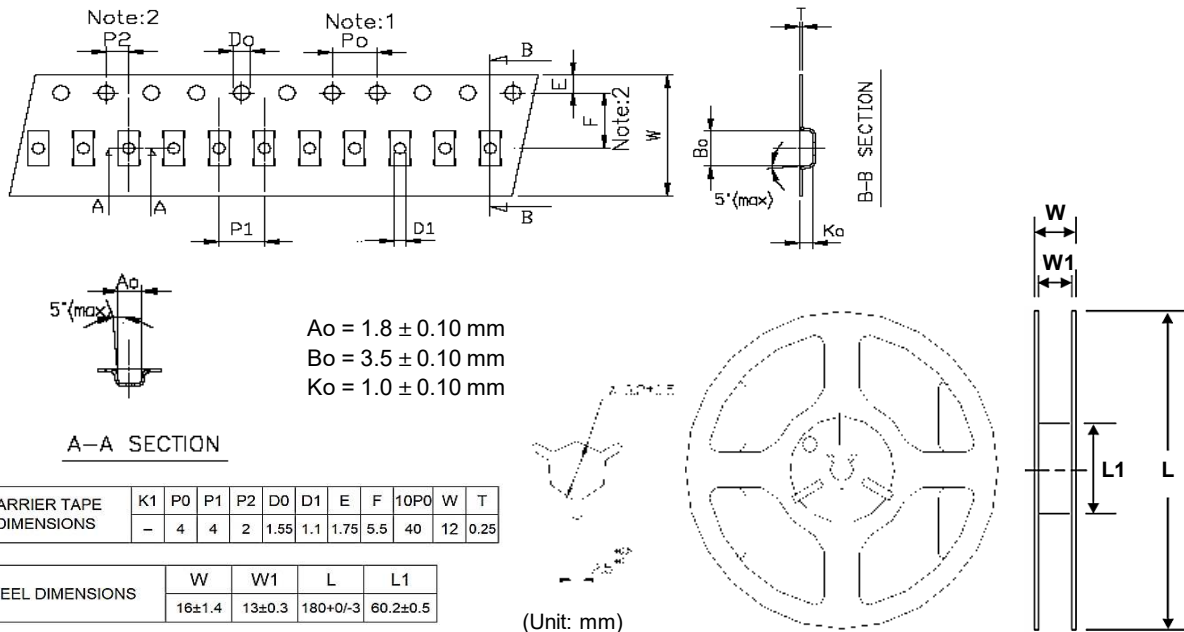
Frequency Tolerance (at 25°C)	
A	± 30 ppm
D	± 20 ppm
E	± 10 ppm

Packaging Method	
T	Tape & Reel

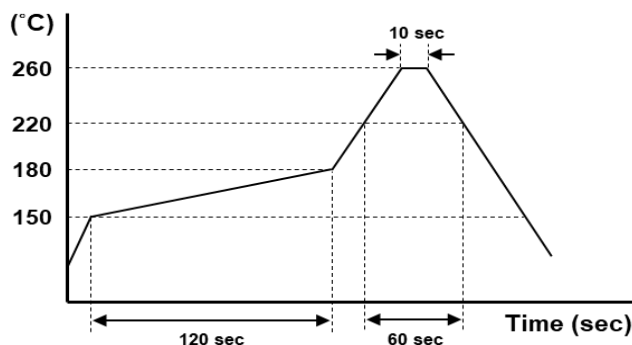
Operating Temperature Range	
Z	-40°C ~ +85°C
W	-40°C ~ +125°C

Load Capacitance	
B	6 pF
Y	7 pF
C	9 pF
F	12.5 pF

## Packing



## Reflow Profile



Total time : Max. 200 sec.  
Solder melting point : 220°C