

## Features

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

## Applications

Power sensitive designs  
 Communication devices  
 Measuring equipments  
 Consumer products  
 Commercial & industrial applications

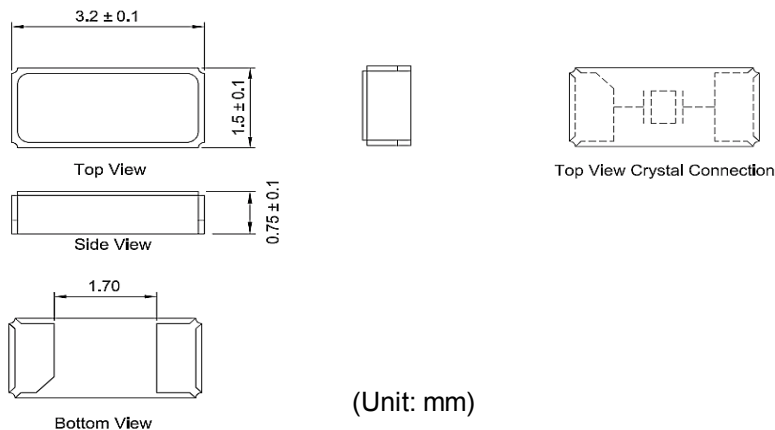
## Electrical Characteristics

Item	Symbol	9HT10L	Conditions
Nominal Frequency	$f_0$	32.768 kHz	
Frequency Tolerance	$\Delta f/f_0$	$\pm 10\text{ppm}$ , $\pm 20\text{ppm}$	at 25°C, Note [1]
Load Capacitance	$C_L$	6pF, 7pF, 9pF, 12.5pF	
Operating Temperature Range	$T_{OTR}$	-40°C ~ +85°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)	$R_1$	50 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.	

### Notes:

[1] Frequency Tolerance ( $\Delta f/f_0$ ) +/-10ppm for Load Capacitance ( $C_L$ ) 6pF, 9pF, 12.5pF only.

## Dimensions

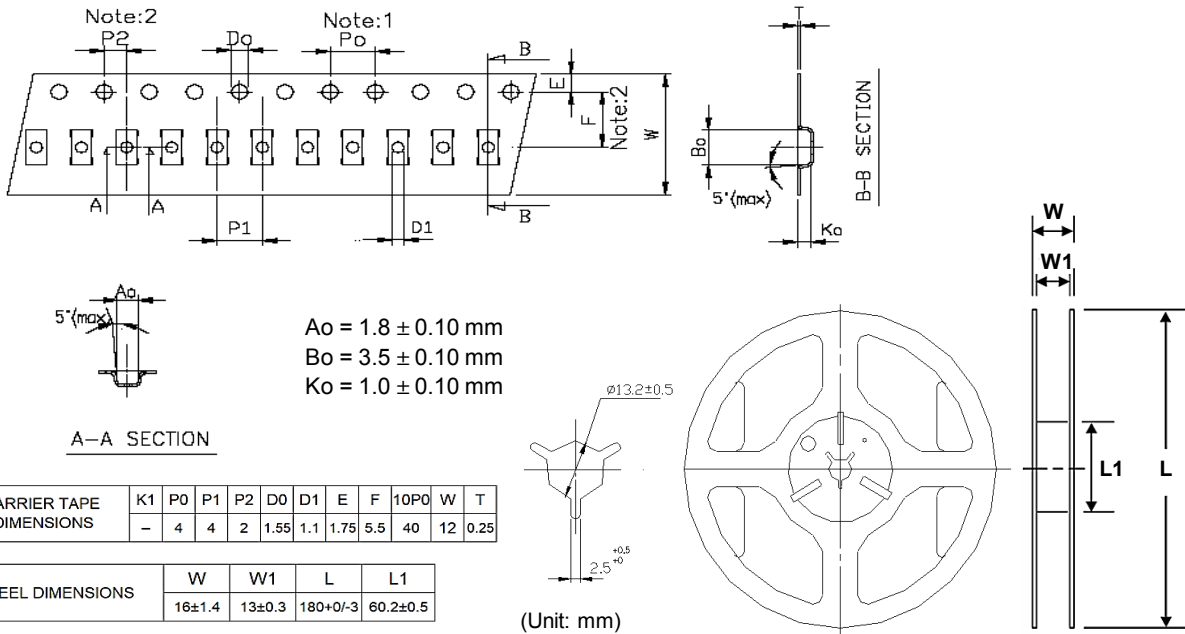


## Ordering Information

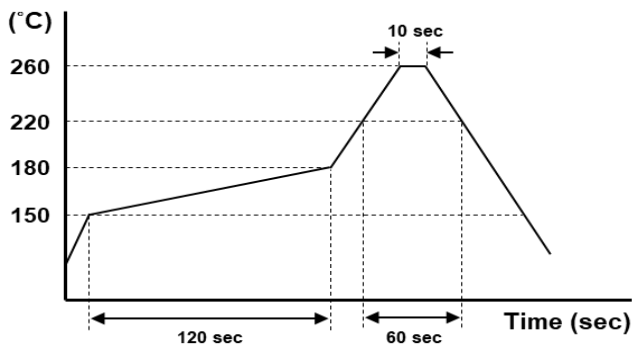
**9HT10L - 32.768K D Z F - T**

<b>Frequency Tolerance (at 25°C)</b>	<b>Frequency Stability (over Temp.)</b>	<b>Load Capacitance</b>	<b>Packaging Method</b>
D ± 20 ppm E ± 10 ppm	Z Standard for kHz	B 6 pF Y 7 pF C 9 pF F 12.5 pF	T Tape & Reel

## Packing



## Reflow Profile



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