

## Features

Frequency range : 32.768 kHz  
 SMD : Ceramic package  
 External dimensions (mm)  
 L : 3.2 x W : 1.5 x H : 0.9  
 RoHS compliant & Pb free

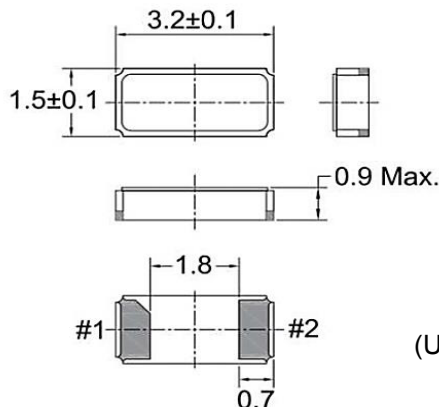
## Applications

Small mobile devices  
 Communication devices  
 Consumer products  
 Smart meters  
 Commercial & industrial applications

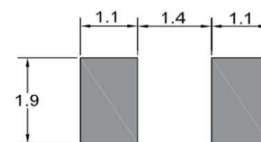
## Electrical Characteristics

Item	Symbol	9HT10D	Conditions
Nominal Frequency	$f_0$	32.768 kHz	
Frequency Tolerance	$\Delta f/f_0$	$\pm 5\text{ppm}$ , $\pm 10\text{ppm}$ , $\pm 20\text{ppm}$	at 25°C
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	$\beta$	-0.034 $\pm$ 0.006ppm/°C <sup>2</sup>	
Motional Resistance (ESR)	$R_1$	70 k $\Omega$ Max.	at 25°C
Drive Level	$D_L$	1 $\mu$ W Max.	
Aging	$\Delta f/f_0$	$\pm 3$ ppm Max.	at 25°C $\pm$ 3°C, first year
Shunt Capacitance	$C_0$	0.95 pF Typ.	

## Dimensions



### Recommended Pad Layout



### Internal Connection

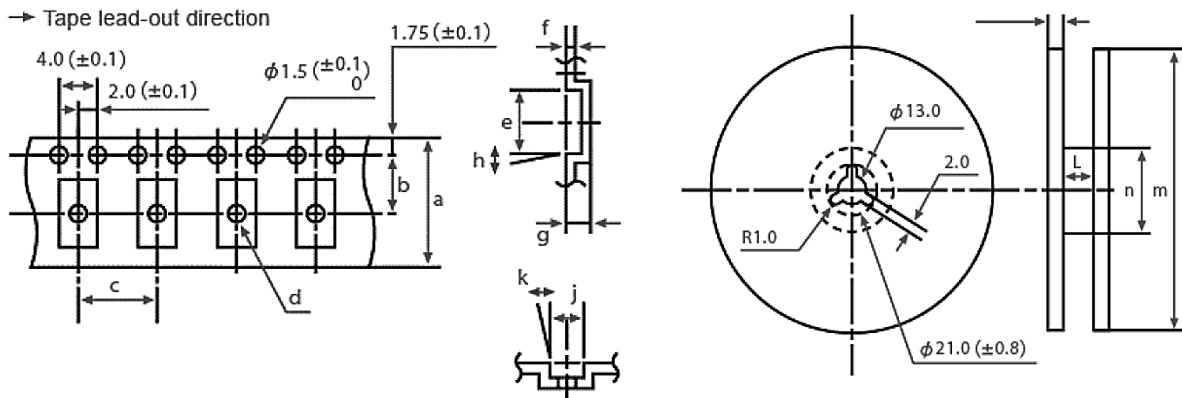


## Ordering Information

**9HT10D - 32.768K D Z F - T**

<b>Frequency Tolerance (at 25°C)</b> D ± 20 ppm E ± 10 ppm H ± 5 ppm	<b>Frequency Stability (over Temp.)</b> Z Standard for kHz	<b>Packaging Method</b> T Tape & Reel	<b>Load Capacitance</b> B 6 pF Y 7 pF C 9 pF F 12.5 pF
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## Packing



a	b	c	d (φ)	e	f	g	h	j	k	l	m (φ)	n (φ)
12.0	5.5	4.0	1.0	3.6	0.3	1.0	5°	1.9	5°	13.0	180	60

## Reflow Profile

