

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

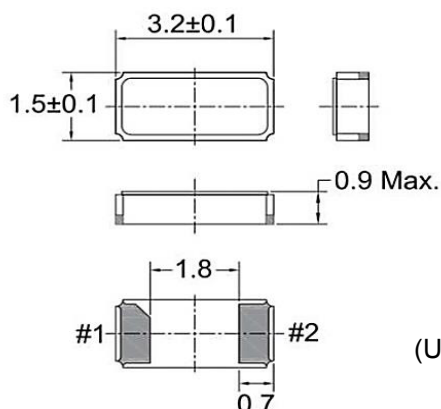
Applications

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

Electrical Characteristics

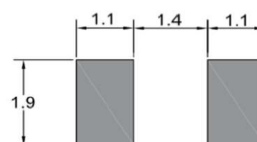
Item	Symbol	9HT10D	Conditions
Nominal Frequency	f_0	32.768 kHz	
Frequency Tolerance	$\Delta f/f_0$	$\pm 5\text{ppm}$, $\pm 10\text{ppm}$, $\pm 20\text{ppm}$	at 25°C
Load Capacitance	C_L	6pF, 7pF, 9pF, 12.5pF	
Operating Temperature Range	T_{OTR}	-40°C ~ +85°C	
Storage Temperature Range	T_{STR}	-55°C ~ +125°C	
Turnover Temperature	T_M	25°C $\pm$ 5°C	
Temperature Coefficient	β	-0.034 $\pm$ 0.006ppm/°C ²	
Motional Resistance (ESR)	R_1	70 k Ω Max.	at 25°C
Drive Level	D_L	1 μ W Max.	
Aging	$\Delta f/f_0$	± 3 ppm Max.	at 25°C $\pm$ 3°C, first year
Shunt Capacitance	C_0	0.95 pF Typ.	

Dimensions



(Unit: mm)

Recommended Pad Layout



Internal Connection



Ordering Information

9HT10D - 32.768K D Z F - T

Frequency Tolerance (at 25°C)

D	± 20 ppm
E	± 10 ppm
H	± 5 ppm

Frequency Stability (over Temp.)

Z	Standard for kHz
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Packaging Method

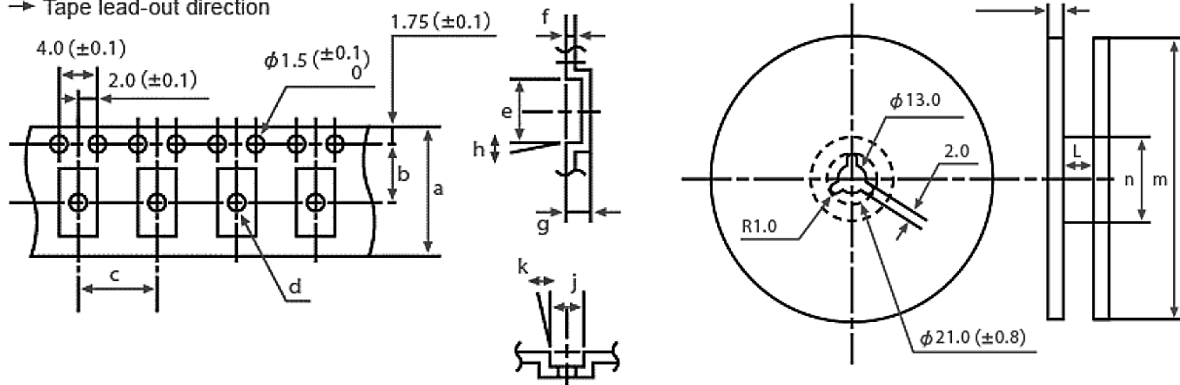
T	Tape & Reel
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Load Capacitance

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

Packing

→ Tape lead-out direction



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

