

### Surface Mount Tuning Fork Crystal Unit 3.2 x 1.5mm package



#### Features

- Suitable for time of day clock
- Small and compact package
- Ideal for pick and place assembly
- Excellent for automatic and high density surface mounting
- RoHS Compliant



#### Electrical Specifications

Normal Frequency		32.768	KHz
Frequency Tolerance at 25°C		±20	PPM
Aging per year		±3	
Turnover Temperature		25 ±5	°C
Temperature Coefficient		-0.034 ±0.008 PPM/Δ °C <sup>2</sup>	
Operating Temperature Range		-40 to +85	
Storage Temperature Range		-55 to +125	
Equivalent Series Resistance (ESR)		65	K Ohm Max
Load Capacitance	Standard	12.5	pF
	Optional	9.0	
Shunt Capacitance		1.7	pF Typ
Motional Capacitance		3.0	fF Typ
Drive Level		1.0	uW Max
Insulation Resistance		500 at 100Vdc (±15Vdc)	M Ohm Min
Quality Factor		70000	Typ
Capacitance Ratio		450	
Resistance to Shock		±5 PPM maximum offset from 75cm drop test in all axes on to a hard surface	

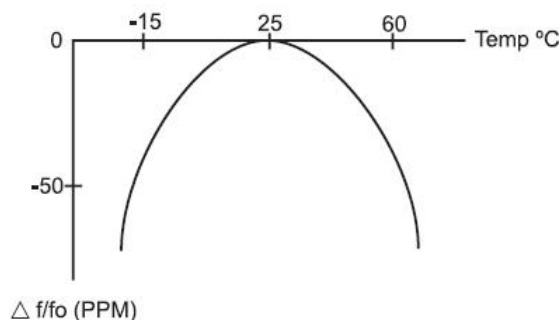
#### Frequency vs.Temp. Characteristics

To Calculate the frequency stability the parabolic curvature constant (K) is needed

For Calculating the stability at 45°C?

1 – Chang in temperature (ΔT)is (45-25) = +20°C

2 – Change in frequency is  $(-0.034 \times (\Delta \text{ } ^\circ\text{C})^2) = (-0.034 \times (20)^2)$   
= -13.6PPM

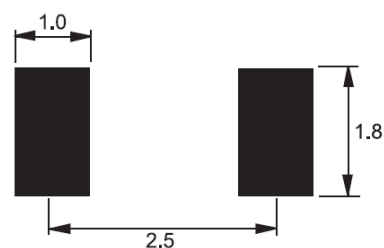
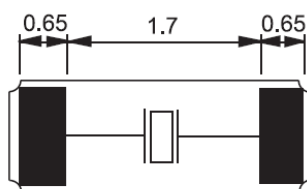
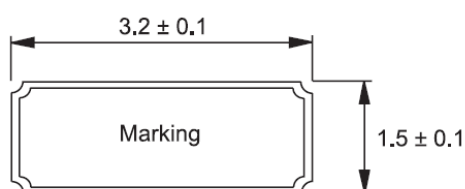


### Part Numbering System

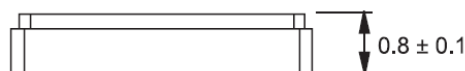
Type	Frequency KHz	Load Capacitance (pF)	Frequency Tolerance	Tape & Reel
WT3215	32.768	12.5 (Standard) 9 (Option)	20 ( $\pm 20$ PPM)	TR

Examples : WT3215-32.768-12.5-TR or WT3215-32.768-9-TR

### Mechanical Outline

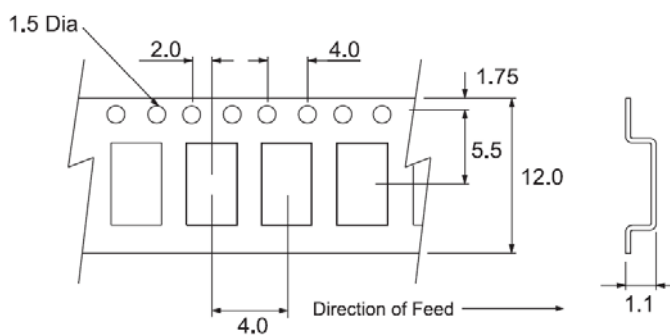


PCB Solder Pad Layout

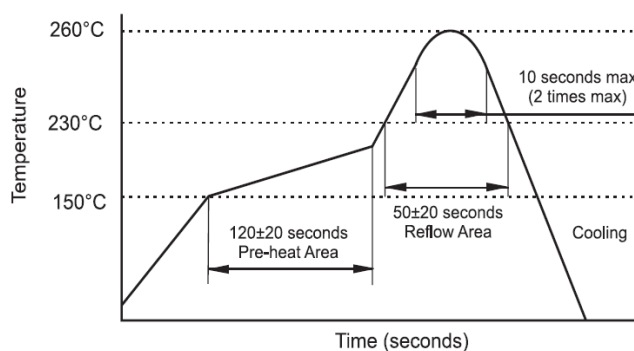


Package is Ceramic-Metal.  
Dimensions are millimeters.

### Carrier Tape Dimensions



### Solder Reflow Characteristics



#### Notes:

- 1 – Standard Temperature Range does not need to be included in Part Number description.
- 2 – Product is shipped in Tape and Reel configuration. Each reel contains 3000 pieces.
- 3 – Quantities less than 3000 pieces are shipped bulk in ESD pouches.
- 4 – Specification subject to change without notice.