

# Quartz Crystals

Surface Mount	
<b>X2012</b>	<b>X3215</b>
[ 2.05 * 1.2 * 0.55 mm ]	[ 3.2 * 1.5 * 0.8 mm ]

Thru - Hole type	
<b>T26G</b>	<b>T38G</b>
[ 2.0 $\phi$ * 6.0 mm ]	[ 3.0 $\phi$ * 8.0 mm ]

**32.768 KHz**

Frequency Tolerance options		
$\pm 5$ ppm	$\pm 10$ ppm	$\pm 20$ ppm

## Features

### Specifications

Ultra compact, thin, and light weight tuning fork crystal unit

- Excellent heat resistance and environmental characteristics
- Excellent electrical performance optimum for mobile communications, OA ( office automation ) and AV ( audiovisual ) applications
- RoHS Compliant. Meets the re-flow profiling requirements using lead-free solder



## General Specifications

Frequency Range	32.768 KHz			
Hold type	Surface Mount Type		Thru - Hole Type	
Item / Type	X2012	X3215	T26	T38
Package sizes	[ 2.05 * 1.2 * 0.55 mm ]	[ 3.2 * 1.5 * 0.8 mm ]	[ 2.0 $\phi$ * 6.0 mm ]	[ 3.0 $\phi$ * 8.0 mm ]
Shunt Capacitance	1.3 pF typ. / 1.5 pF max.	1.0 pF typ. / 1.6 pF max.	1.5 pF max.	0.9 pF max.
Equivalent series resistance	80 K $\Omega$ max.		40 K $\Omega$ max.	35 K $\Omega$ max.
Temperature coefficient	$-0.04 \times 10^{-6} / ^\circ\text{C}^2$ max.		$-0.035 \times 10^{-6} / ^\circ\text{C}^2$ max.	
Drive Level	0.1 $\mu$ W typical ( 0.5 $\mu$ W max. )		1.0 $\mu$ W typical	
Operating Temperature Range	- 40 $^\circ\text{C}$ to 85 $^\circ\text{C}$		- 10 $^\circ\text{C}$ to 60 $^\circ\text{C}$	
Storage Temperature Range	- 40 $^\circ\text{C}$ to 125 $^\circ\text{C}$		- 40 $^\circ\text{C}$ to 85 $^\circ\text{C}$	
Crystal Cut	XT - Cut			
Load Capacitance	7 pF , 9 pF or 12.5 pF			
Frequency Tolerance	$\pm 5$ ppm , $\pm 10$ ppm , $\pm 20$ ppm ( max. ) at 25 $^\circ\text{C}$			
Turning POINT	+ 25 $^\circ\text{C}$ $\pm$ 5 $^\circ\text{C}$			
Insulation resistance	500 M $\Omega$ min.			

## Outline Dimensions ( Unit : mm )

X2012	X3215
T26G	T38G
<p>Frequency ( Hz )</p>	<p>Frequency ( Hz )</p>