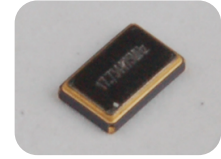


# SMD CRYSTAL

## Features

- Typical 3.2x2.5x0.8 mm ultra thin ceramic package.
- Tape & Reel package for automatic assembly.
- Tight tolerance 10 ppm available.
- Packing : Tape & Reel.



## Application

- Bluetooth, Mobile Phone, GPS
- Wireless LAN, WiMAX
- Hard Disk

## Specifications

RoHS Compliance

Parameter	Min.	Typical	Max.	Unit
Storage Temp. Range	-55	-	125	°C
Standard Frequency	10~60			MHz
Level of Drive	-	10	100	μW
Shunt Capacitance(Co)	-	-	7.0	pF
Insulation Resistance	500MΩ @DC100V	-	-	
Aging	±3.0			ppm/year

Standard frequencies are frequencies which the crystal has been designed and does not imply a stock position.

## Equivalent Series Resistance (ESR)

Type Frequency	Mode	ESR
12MHz≤ Freq. ≤13MHz	Fund	150Ω
13MHz< Freq. ≤19.5MHz	Fund	80Ω
19.5MHz< Freq. ≤27MHz	Fund	60Ω
27MHz< Freq. ≤48MHz	Fund	50Ω

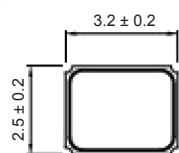
## Freq. Stability vs Temp. Range

Temp.	PPM		
	±10	±15	±20
-10 ~ +60°C	△	○	○
-20 ~ +70°C	X	○	○
-40 ~ +85°C	X	△	○

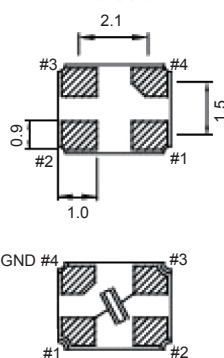
\*○:Standard △:Available(case by case) X:Not available

## DIMENSION (Unit: mm)

[TOP VIEW]



[BOTTOM VIEW]



[SIDE VIEW]



## SOLDER PAD LAYOUT (mm)

