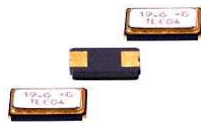


Ceramic SMD Crystal Unit

Precision type
Ceramic Package
Ultra Miniature

Pb-free : RoHs compliance



TT-2012S

■ Typical applications

- Cordless Telephones. Coputer Clocks. DVC. OA. AV. etc.

■ Features

- 32.768 KHz.
- Precision type Vacuum sealed unit.
- Ultra miniature type essential in the high density PCB.
- Package : Metal lid + Ceramic package.
2.0×1.2×0.6mm

■ Specifications

Model	TT - 2012S	
Frequency Range	[Fr] 32.768 KHz	Fundamental
Frequency Tolerance (max)	[dF/F] ±10.0ppm, ±20.0ppm, ±50.0ppm	at 25±3° C
Frequency Temperature Stability (max)	-0.03±0.01 ppm / ° C ²	
Operating Temperature Range	-40 to +85° C	
Storage Temperature Range	-55 to +125° C	
Equivalent Series Resistance (max)	[Rr] 90 KΩ max.	
Load Capacitance (typical)	[CL] 9.0pF, 12.5 pF	
Parallel Capacitance (max)	[Co] 1.5 pF max.	
Drive Level (typical)	[DL] 0.5 μW	

■ Environmental Characteristics

Description	Specification
Aging (at 25° C)	±3.0 ppm max / Year (at 25° C)
Fall Shock	Test : 3 time free drop onto concrete board from 150cm high Result: ±5.0 ppm max.
Vibration Shock	Test : Freq. 5-500Hz, Amplitude 1.5mm, Test time 4cycles/XYZ axis Result: ±5.0 ppm max.
Solderability	Test : Immersed into solder bath at 235±° C for 3 sec. Result: More than 95%
Humidity	Test : 90 to 95%RH at 60±3° C±500 hours Result: ±5.0 ppm max.
Reflow Heat	Test : 2 times of IR reflow soldering in accordance with reflow temperature profile as per the document No.:TR-0531 Result: ±5.0 ppm max.

■ Outline Drawing & Suggested Pad

