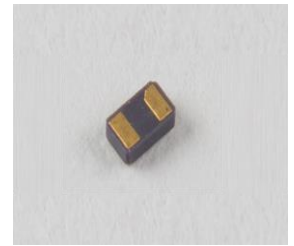


**SERIES RRT2012**



❖ **FEATURES**

- ❖ SUITABLE FOR TIME OF DAY CLOCKS
- ❖ IDEAL FOR HIGH DENSITY PACKAGING APPLICATION
- ❖ SMALL AND COMPACT PACKAGE

❖ **SPECIFICATIONS**

PARAMETER	VALUE
NOMINAL FREQUENCY	32.768 kHz
MODE OF OSCILLATION	Fundamental
FREQUENCY TOLERANCE AT 25°C	±10 ppm, ±20 ppm
FREQUENCY STABILITY OVER TEMPERATURE COEFFICIENT	-0.045 ppm / °C <sup>2</sup>
OPERATING TEMPERATURE RANGE	-40°C to +85°C
STORAGE TEMPERATURE RANGE	-55°C to +125°C
AGING	±3 ppm per year max
LOAD CAPACITANCE	4 pF to 12.5 pF
EQUIVALENT SERIES RESISTANCE	90 kΩ max
SHUNT CAPACITANCE	2 pF max
DRIVE LEVEL	0.1 μw max
SHOCK RESISTANCE	±5 ppm max 75 cm drop test onto a hard wood surface

❖ **PART NUMBERING SYSTEM**

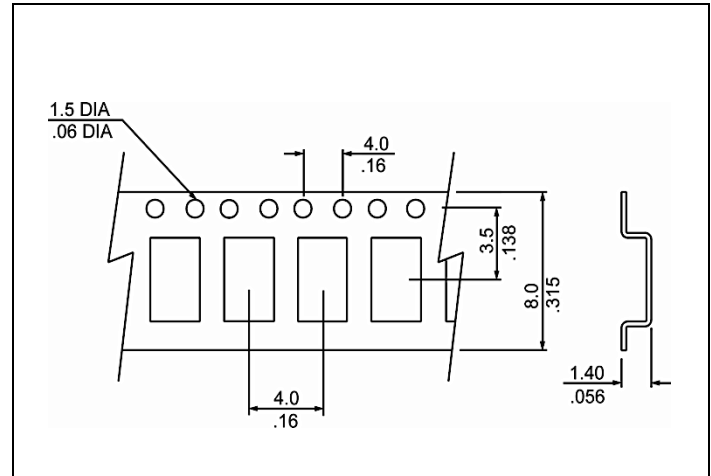
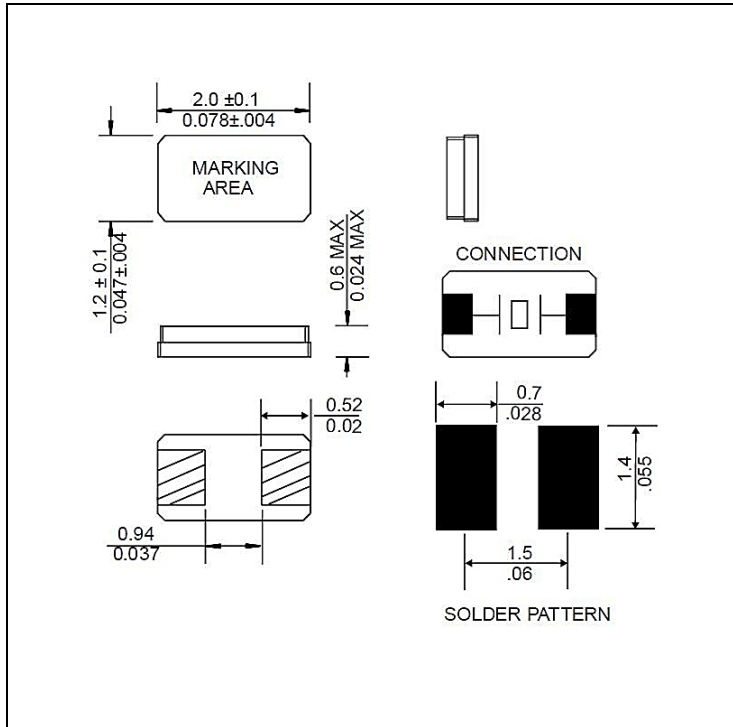
TYPE	-	FREQUENCY kHz	-	LOAD CAPACITANCE pF	-	TOLERANCE ppm	-	TAPE & REEL
RRT2012	-	32.768	-	9 to 12.5	-	Blank for ±20 ppm 10 for ±10 ppm	-	TR

**EXAMPLE: RRT2012-32.768-12.5-TR**

Surface Mount Tuning Fork Crystal, 2.0 mm x 1.2 mm Package, 32.768 kHz, 12.5 pF Load, ±20 ppm Tolerance, Operating Temperature from -40°C to +85°C, Tape and Reel Packaging

**SERIES RRT2012**

❖ **MECHANICAL SPECIFICATION**



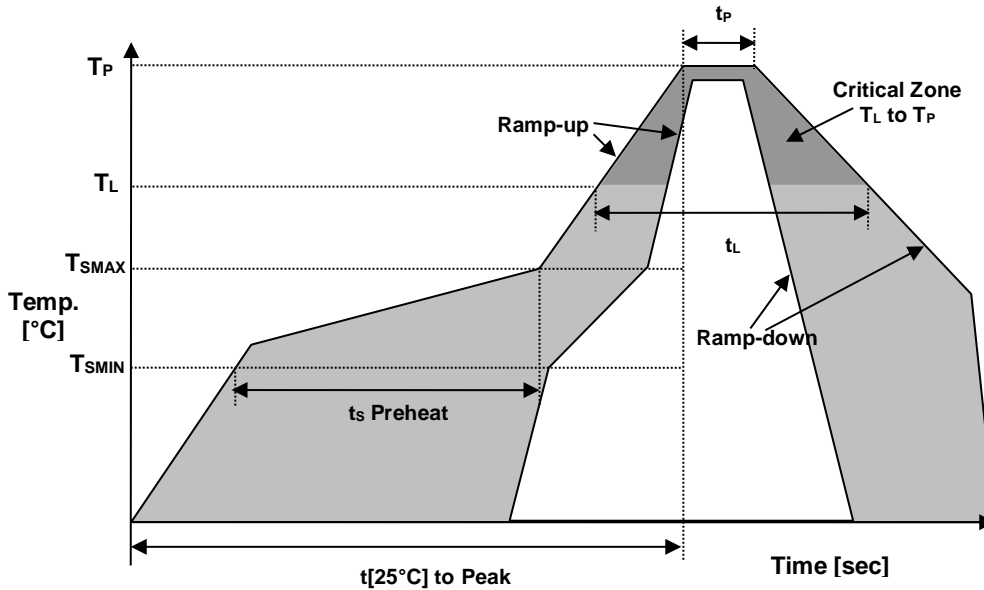
NOTE: REFER TO EIA-481 FOR DIMENSIONS

❖ **PACKAGING**

180 mm REEL DIAMETER  
 8 mm TAPE WIDTH, 4mm PITCH  
 QUANTITY: 3000 PIECES PER REEL

**SERIES RRT2012**

❖ **REFLOW PROFILE**



Reflow profile (Reference IPC/JEDEC J-STD-020)		
Temperature Min Preheat	T <sub>SMIN</sub>	150°C
Temperature Max Preheat	T <sub>SMAX</sub>	200°C
Time (T <sub>SMIN</sub> to T <sub>SMAX</sub> )	t <sub>s</sub>	60-180 sec.
Temperature	T <sub>L</sub>	217°C
Peak Temperature	T <sub>P</sub>	260°C
Ramp-up rate	R <sub>UP</sub>	3°C/sec max.
Ramp-down rate	R <sub>DOWN</sub>	6°C/sec max.
Time within 5°C of Peak Temperature	t <sub>p</sub>	10 sec.
Time t[25°C] to Peak Temperature	t[25°C] to Peak	480 sec.
Time	t <sub>L</sub>	60-150 sec.

❖ **ENVIRONMENTAL**

PARAMETER	VALUE
MOISTURE SENSITIVITY LEVEL	1
RoHS	COMPLIANT
REACH SVHC	COMPLIANT
HALOGEN-FREE	COMPLIANT
TERMINATION FINISH	Au
UNIT WEIGHT (GRAMS)	0.051



October 2017