

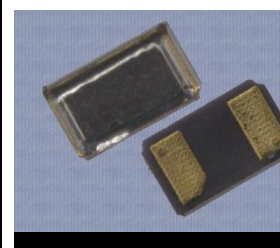
#### ● FEATURES

- ULTRA SMALL PACKAGE OF 2.0 x 1.2 x 0.6 mm
- 32.768 kHz
- PRECISION SEALED UNIT



#### ● SPECIFICATIONS

PARAMETER	VALUE
FREQUENCY RANGE	32.768 kHz
MODE OF OSCILLATION	Fundamental
FREQUENCY TOLERANCE AT 25°C	±50 ppm max (±10, ±20 ppm available)
FREQUENCY STABILITY OVER TEMPERATURE	-0.03 ±0.01 ppm / °C <sup>2</sup>
OPERATING TEMPERATURE RANGE	-40°C ~ +85°C
STORAGE TEMPERATURE RANGE	-55°C ~ +125°C
AGING	±3 ppm per year max
LOAD CAPACITANCE	9.0 pF or 12.5 pF
EQUIVALENT SERIES RESISTANCE	90 kΩ max
SHUNT CAPACITANCE	1.5 pF max
DRIVE LEVEL	0.5 μW typ
SHOCK RESISTANCE	±5 ppm max 75 cm drop test in 3 axes onto a hard wood surface
REFLOW CONDITIONS	260°C ±5°C for 10s max



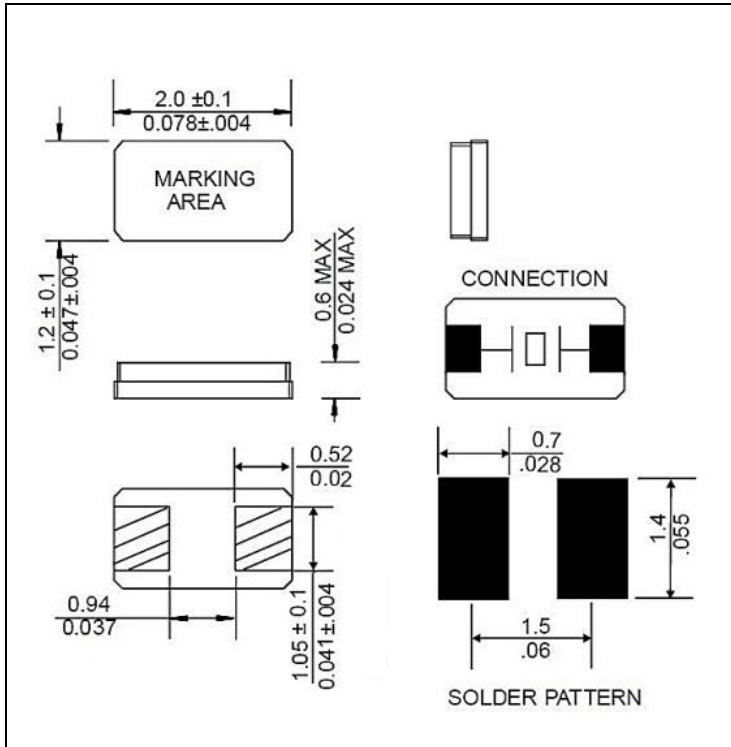
#### ■ PART NUMBERING SYSTEM

TYPE	-	FREQUENCY kHz	-	LOAD CAPACITANCE pF	-	TOLERANCE PPM	-	EXTENDED TEMPERATURE	-	TAPE & REEL
RT2012	-	32.768	-	9 or 12.5	-	BLANK for 50 ppm 10, 20 or 30	-	EXT	-	TR

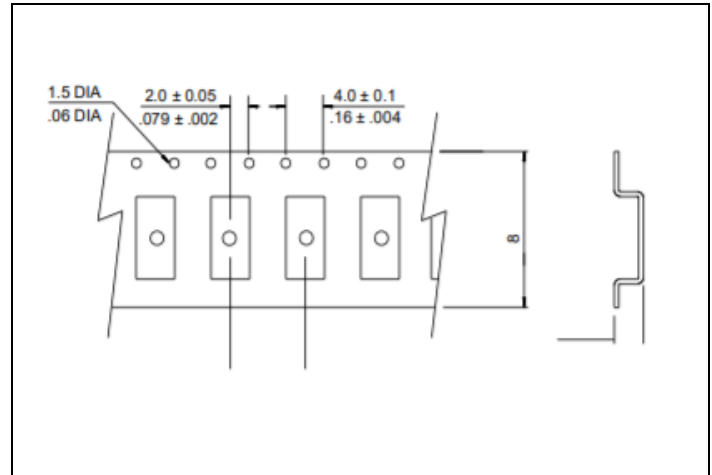
#### EXAMPLE: RT2012-32.768-12.5-20-EXT-TR

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

#### MECHANICAL SPECIFICATION



#### CARRIER TAPE DIMENSIONS



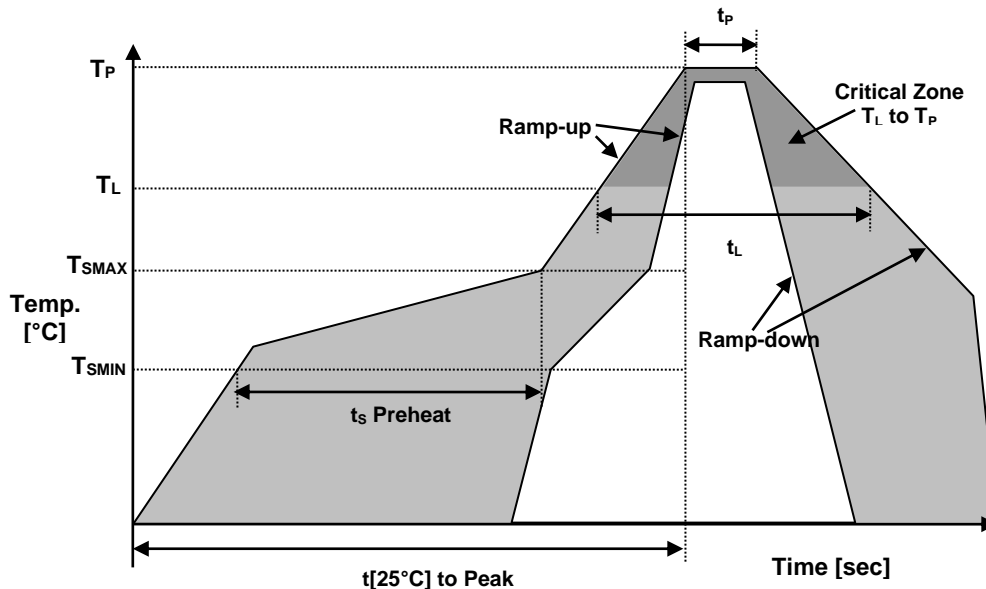
NOTE: REFER TO EIA-481 FOR DIMENSIONS

#### PACKAGING

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

IN ACCORDANCE WITH EIA-481

● REFLOW PROFILE



Reflow profile (Reference IPC/JEDEC J-STD-020)		
Temperature Min Preheat	$T_{SMIN}$	150°C
Temperature Max Preheat	$T_{SMAX}$	200°C
Time ( $T_{SMIN}$ to $T_{SMAX}$ )	$t_s$	60-180 sec.
Temperature	$T_L$	217°C
Peak Temperature	$T_P$	260°C
Ramp-up rate	$R_{UP}$	3°C/sec max.
Ramp-down rate	$R_{DOWN}$	6°C/sec max.
Time within 5°C of Peak Temperature	$t_p$	10 sec.
Time $t[25^\circ\text{C}]$ to Peak Temperature	$t[25^\circ\text{C}]$ to Peak	480 sec.
Time	$t_L$	60-150 sec.

● ENVIRONMENTAL

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

