

**SERIES RSM200S**

- **FEATURES**
  - SUITABLE FOR TIME OF DAY CLOCKS
  - COMPACT PACKAGE
  - IDEAL FOR PICK AND PLACE ASSEMBLY

● **SPECIFICATIONS**

PARAMETER	VALUE
NOMINAL FREQUENCY	32.768 kHz
FREQUENCY TOLERANCE AT 25°C	±20 ppm max
TURNOVER TEMPERATURE	+25°C ±5°C
PARABOLIC CURVATURE CONSTANT	(-0.034 ±0.006) ppm/°C <sup>2</sup>
OPERATING TEMPERATURE RANGE	-40°C to +85°C
STORAGE TEMPERATURE RANGE	-55°C to +125°C
AGING (FIRST YEAR)	±3 ppm max
LOAD CAPACITANCE	6, 7, 8, 9, 12.5 pF
EQUIVALENT SERIES RESISTANCE	50 kΩ max
SHUNT CAPACITANCE	1.35 pF typ, 2 pF max
MOTIONAL CAPACITANCE	0.003 pF typ
CAPACITANCE RATIO	450 typ
DRIVE LEVEL	1 μW max
INSULATION RESISTANCE	500 MΩ min
SHOCK RESISTANCE	±5 ppm max 75 cm drop test onto a hard surface or 3000 g x 0.3 ms x 1/2 sinewave in 3 axes
REFLOW CONDITIONS	260°C for 10 s max



■ **PART NUMBERING SYSTEM**

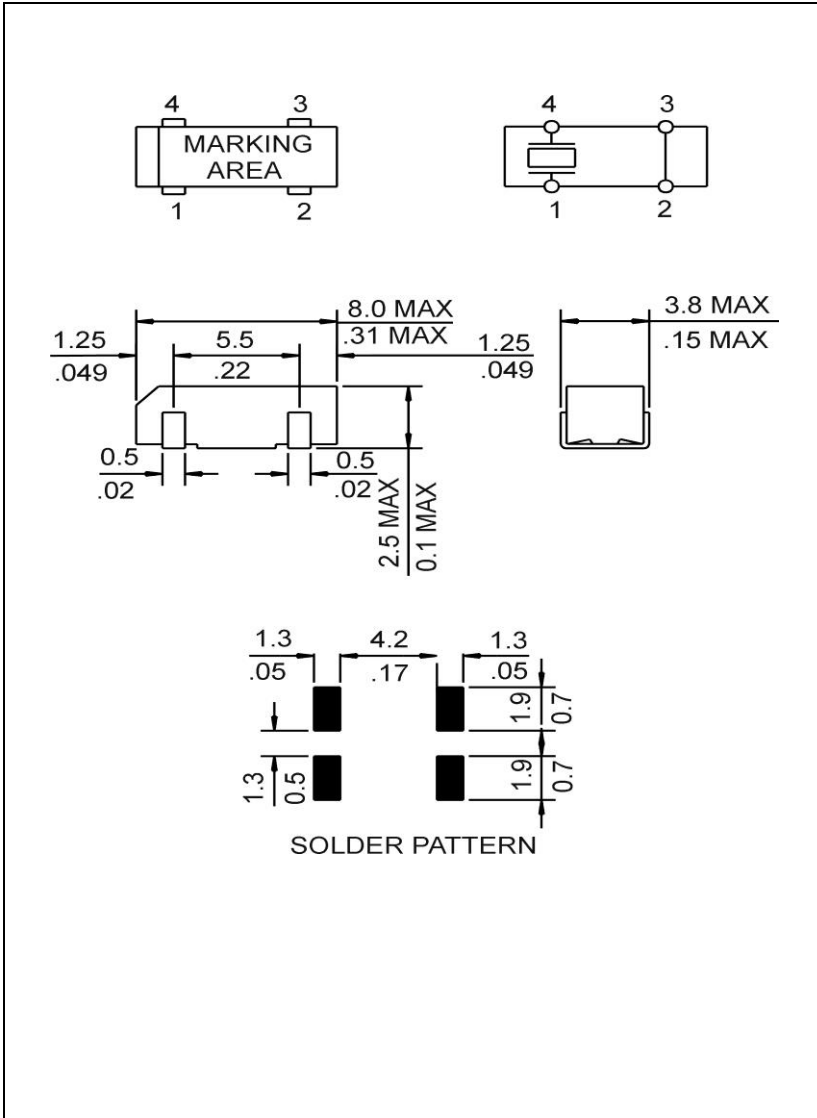
TYPE	-	FREQUENCY (kHz)	-	LOAD CAPACITANCE (pF)	-	TAPE & REEL
RSM200S	-	32.768	-	6 to 12.5	-	TR

**EXAMPLE: RSM200S-32.768-12.5-TR**

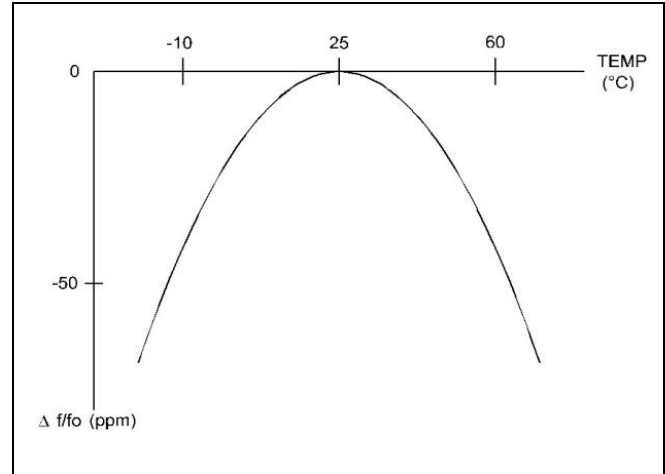
Surface Mount Tuning Fork Crystal, 8.0 x 3.8 mm, 32.768 kHz, 12.5 pF Load, ±20 ppm Tolerance, Operating Temperature Range from -40°C to +85°C, Tape and Reel Packaging

### SERIES RSM200S

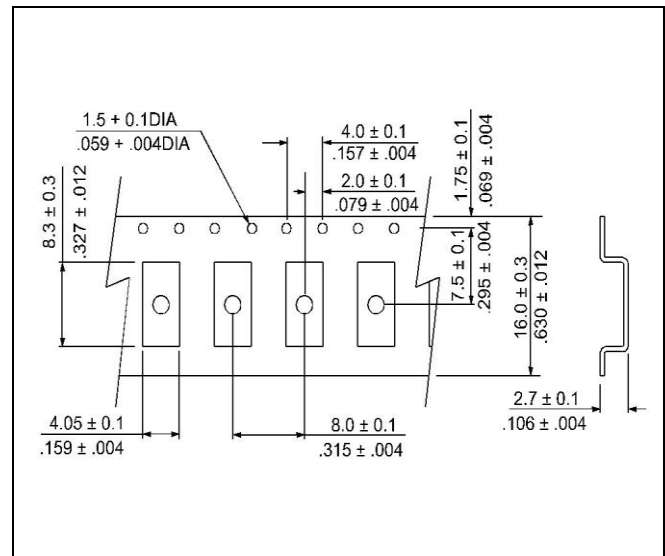
#### MECHANICAL SPECIFICATION



#### FREQUENCY vs. TEMPERATURE CURVE



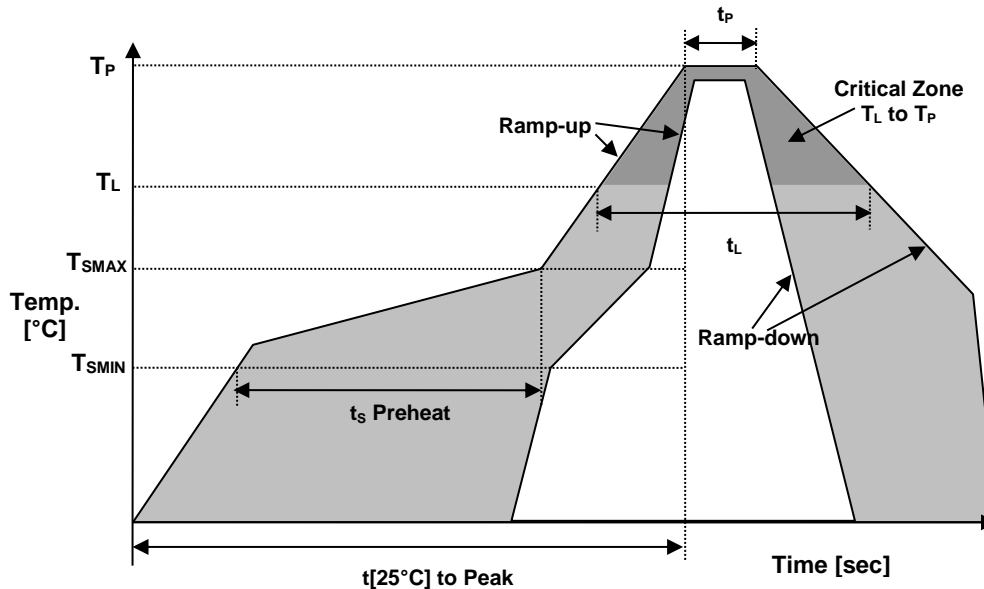
#### CARRIER TAPE DIMENSIONS



#### PACKAGING

Reel Diameter: 330mm  
 Tape Width: 16 mm, Pitch: 8 mm  
 Quantity: 3000 pcs/reel

● **REFLOW PROFILE**



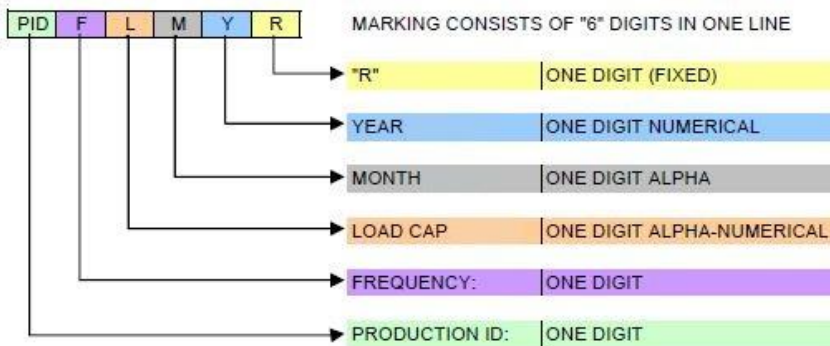
Reflow profile		
Temperature Min Preheat	$T_{SMIN}$	150°C
Temperature Max Preheat	$T_{SMAX}$	200°C
Time ( $T_{SMIN}$ to $T_{SMAX}$ )	$t_s$	60-180 s
Temperature	$T_L$	217°C
Peak Temperature	$T_P$	260°C
Ramp-up rate	$R_{UP}$	3°C/s max.
Ramp-down rate	$R_{DOWN}$	6°C/s max.
Time within 5°C of Peak Temperature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

● **ENVIRONMENTAL**

PARAMETER	VALUE
MOISTURE SENSITIVITY LEVEL	1
RoHS	Exemption 7A
HALOGEN-FREE	Compliant
TERMINATION FINISH	SnAg Plating
UNIT WEIGHT	0.14 g



● **MARKING**



**FREQUENCY CODE: 3**

LOAD CAP CODE	
Capacitance (pF)	Code
6	Q
7	7
8	8
9	9
12.5	F

MONTH CODE	
MONTH	CODE
JANUARY	A
FEBRUARY	B
MARCH	C
APRIL	D
MAY	E
JUNE	F
JULY	G
AUGUST	H
SEPTEMBER	J
OCTOBER	K
NOVEMBER	L
DECEMBER	M

YEAR CODE	
Year	Code
2011	1
2012	2
2013	3
2014	4
2015	5
2016	6
2017	7
2018	8
2019	9

**EXAMPLE: J3FC7R**