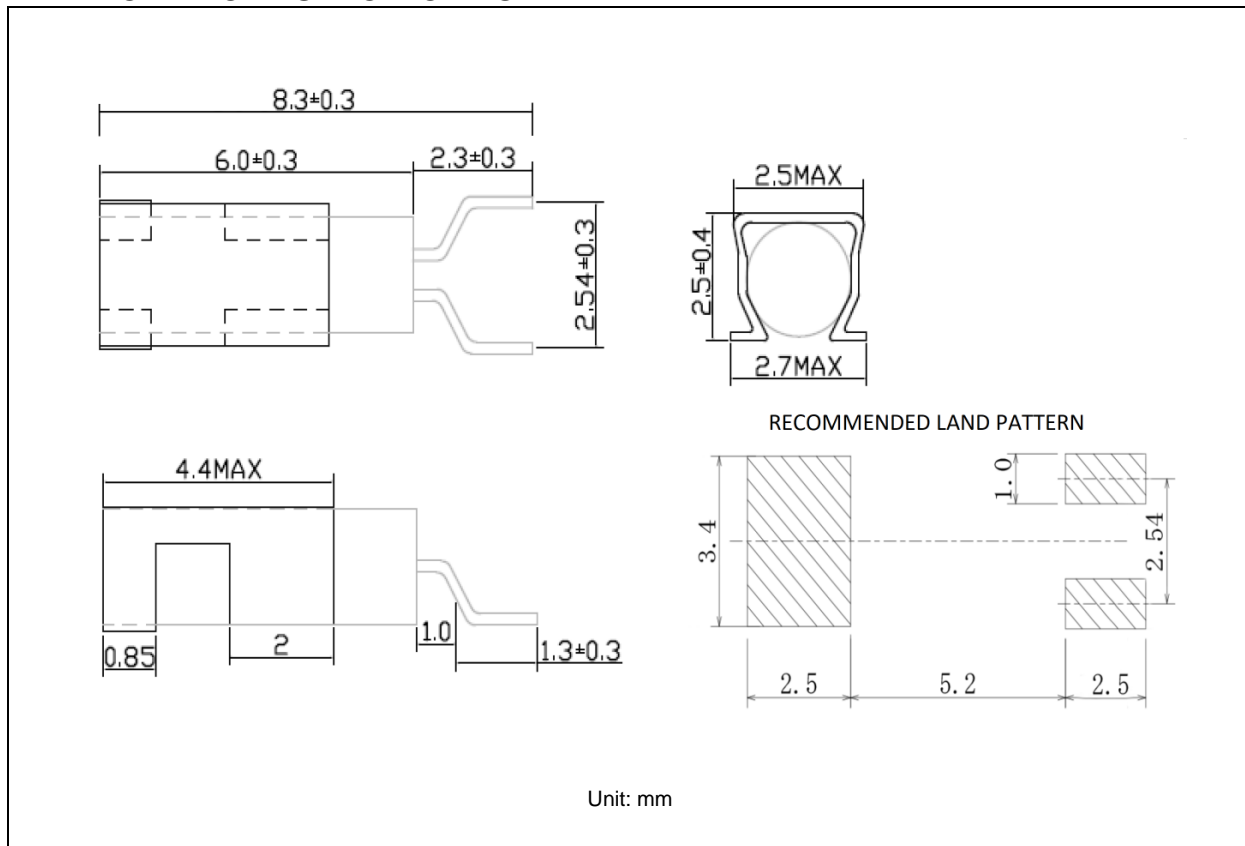


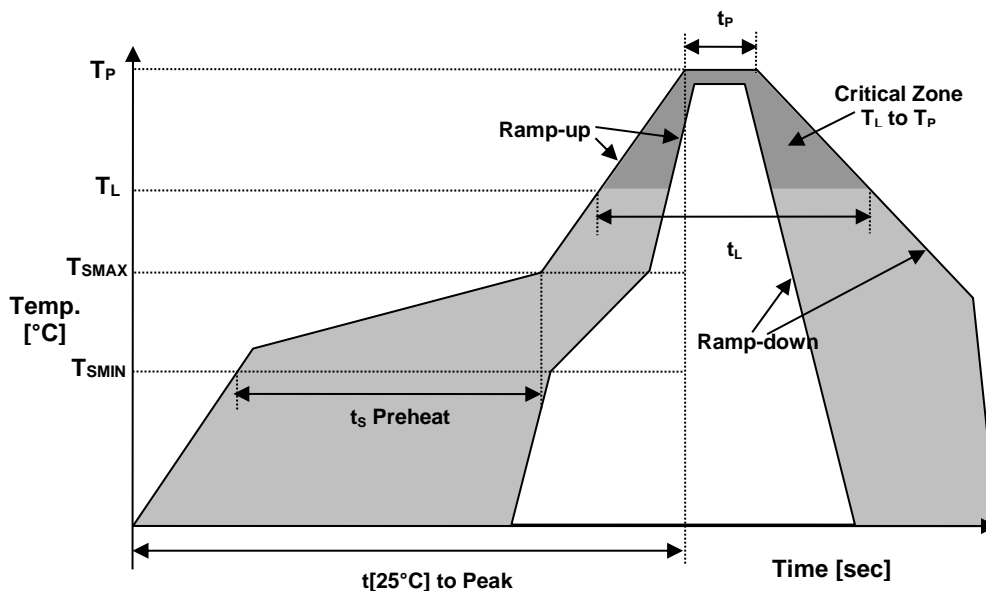
● SPECIFICATIONS

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/Δ°C <sup>2</sup>
LOAD CAPACITANCE	12.5 pF
EQUIVALENT SERIES RESISTANCE	50 kΩ max
DRIVE LEVEL	1 μW max
SHUNT CAPACITANCE	0.9 ~ 2 pF, 1.35 pF typ
MOTIONAL CAPACITANCE	2.3 fF typ
CAPACITANCE RATIO	450 typ
AGING	±5 ppm first year max
QUALITY FACTOR	75,000 typ
INSULATION RESISTANCE	500 MΩ min @ DC 100V
OPERATING TEMPERATURE RANGE	-40°C to +85°C
STORAGE TEMPERATURE RANGE	-55°C to +125°C

● MECHANICAL SPECIFICATION



● 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 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 with Exemption 7a
REACH SVHC	Compliant
HALOGEN-FREE	Compliant
ESD CLASSIFICATION LEVEL	N/A
TERMINATION FINISH	Au





MARKING

32.768

x3FmyR

x – 1 or 2 digits as Internal Production ID code

m – Month code

y – Year code

YEAR CODE	
Year	Code
2018	8
2019	9
2020	0
2021	1
2022	2
2023	3
2024	4
2025	5
2026	6
2027	7
2028	8
2029	9

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

APPROVAL

DRAWN BY:	Initial Release
APPROVED BY:	WM, April 16, 2008
REVISION:	A, Initial Release B, AR, March 23, 2022 Updated Equivalent Series Resistance C, Updated to current spec levels by XLiu, May 26, 2022 D, Updated mechanical specification by AR, July 11 2022

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