

● SPECIFICATIONS

PARAMETER	VALUE
NOMINAL FREQUENCY	32.768 kHz
MODE OF OSCILLATION	Fundamental
FREQUENCY TOLERANCE AT 25°C	±20 ppm max
TURNOVER TEMPERATURE	+25 ± 5°C
TEMPERATURE COEFFICIENT	-0.04 ppm / °C <sup>2</sup> max
OPERATING TEMPERATURE RANGE	-40°C to +85°C
STORAGE TEMPERATURE RANGE	-55°C to +125°C
AGING	±3 ppm first year max
LOAD CAPACITANCE	7 pF
EQUIVALENT SERIES RESISTANCE	50 kΩ typ , 70 kΩ max
SHUNT CAPACITANCE	1.1 pF typ, 1.8 pF max
MOTIONAL CAPACITANCE	3.5 fF typ, 7.0 fF max
DRIVE LEVEL	0.5 μW max
INSULATION RESISTANCE	500 MΩ min @ DC 100V

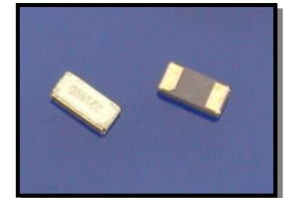
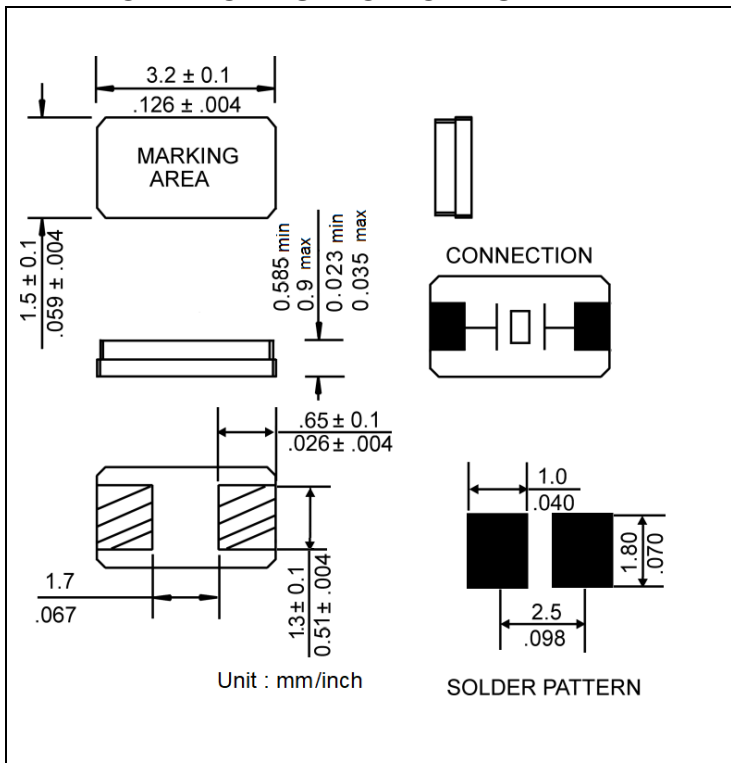
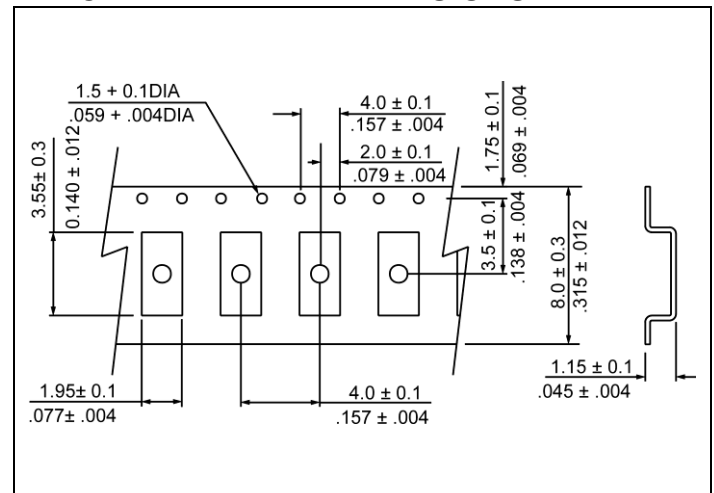


Photo not actual part

● MECHANICAL SPECIFICATION



● CARRIER TAPE DIMENSIONS



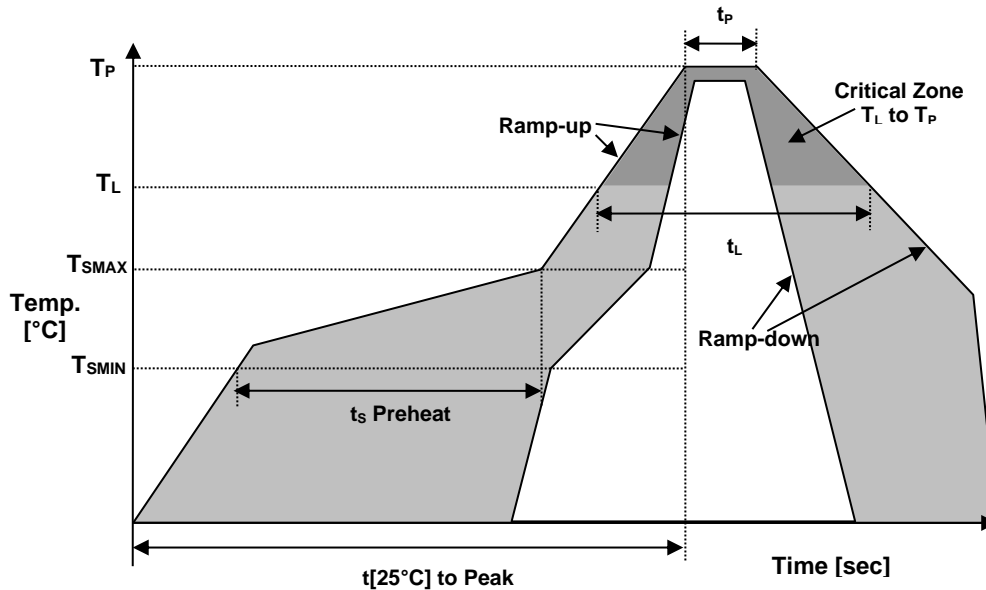
NOTE: REFER TO EIA-481 FOR DIMENSIONS

● PACKAGING

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

IN ACCORDANCE WITH EIA-481

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



## • MARKING

Xywwx

X – Internal Production ID code (J, R, T, Y, M, R, N)  
y – Year code  
ww – Week code  
x – 1 or 2 digits as Lot code

ymxxx

y – Year code  
m – Month code, Jan ~ Sep: 1 ~ 9, Oct: X Nov: Y Dec: Z  
xxx – Lot code

XLzymb

X – Internal Production ID code (J, R, T, Y, M, R, N)  
L – Load capacitance code (A: 12.5pF B: 9pF C: 7pF Z: others )  
z – Lot code  
y – Year code  
m – Month code, Jan ~ Sep: 1 ~ 9, Oct: X Nov: Y Dec: Z  
d – Day code

XzymF<sub>xx</sub><sup>xx</sup>

X – Internal Production ID code (J, R, T, Y, M, R, N)  
z – Frequency code  
y – Year code  
m – Month code, Jan ~ Sep: 1 ~ 9, Oct: X Nov: Y Dec: Z  
<sup>xx</sup> – Lot code



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SURFACE MOUNT MICROPROCESSOR CRYSTAL

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● APPROVAL

Drawn By:	KJackson, August 15, 2014
Approved By:	KJackson, August 15, 2014
Revision:	A, Initial Release B, Updated to current spec levels KJ 8/10/17 C, Updated to current spec levels AG 5/21/18 D, Updated to current spec levels XL 7/19/2019 E, Updated the drawing, CP 4/2/2020 F, Updated to current spec levels by XLiu, August 5, 2020

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