32.768kHz SMD Crystal

ABS06

Request Samples | Check Inventory

2.0 x 1.2 x 0.6 mm
RoHS/RoHS II Compliant
MSL Level = N/A

Features

- 2.0 x 1.2 x 0.6mm ideal for high density circuit boards
- Ceramic package offers excellent environmental & heat resistance
- Extended temperature -55°C to +125°C for industrial applications

Applications

- Wide range in communication & measuring equipment
- Commercial & Industrial applications
- Wireless communications

Key Electrical Specifications

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency		32.768		kHz	
Operation Mode		Flexural Mode (Tuning Fork)			
Operating Temperature	-40		+85	ºC	Option "blank"; See options
Storage Temperature	-55		+125	ºC	
Frequency Tolerance @+25°C	-20		+20	ppm	Option "blank"; See options
Temperature Coefficient:	-0.04	-0.03	-0.02	ppm/T²	
Turn-over temperature:	+20	+25	+30	ºC	
Equivalent series resistance (R1)			90	kΩ	For -40 ~ +85°C option
			110	kΩ	For -40 ~ +125°C option & -55 ~ +125°C option
Load capacitance (CL)		12.5		pF	Option "blank"; See options
Shunt capacitance (C0)		0.9 ~ 1.4	2.0	pF	
Drive Level		0.1	0.5	µW	
Q value	9000				
Aging	-3		+3	ppm	@25°C± 3°C First year
Insulation Resistance	500			MΩ	@ 100Vdc ± 15V

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Options and Part Identification (left blank if standard)

ABS06 – 32.768 kHz -□-□-□-□

Load Capacitance
Blank: 12.5pF
9: 9pF
7: 7pF
6: 6pF
4P: 4pF

Operating Temp. Range
Blank: -40 ~ +85°C
H: -40 ~ +125°C
W: -55 ~ +125°C

Freq. Tolerance
Blank: ±20ppm
1: ±10ppm
4: ±30ppm

Packaging
Blank: Bulk
T: 3k pcs / reel

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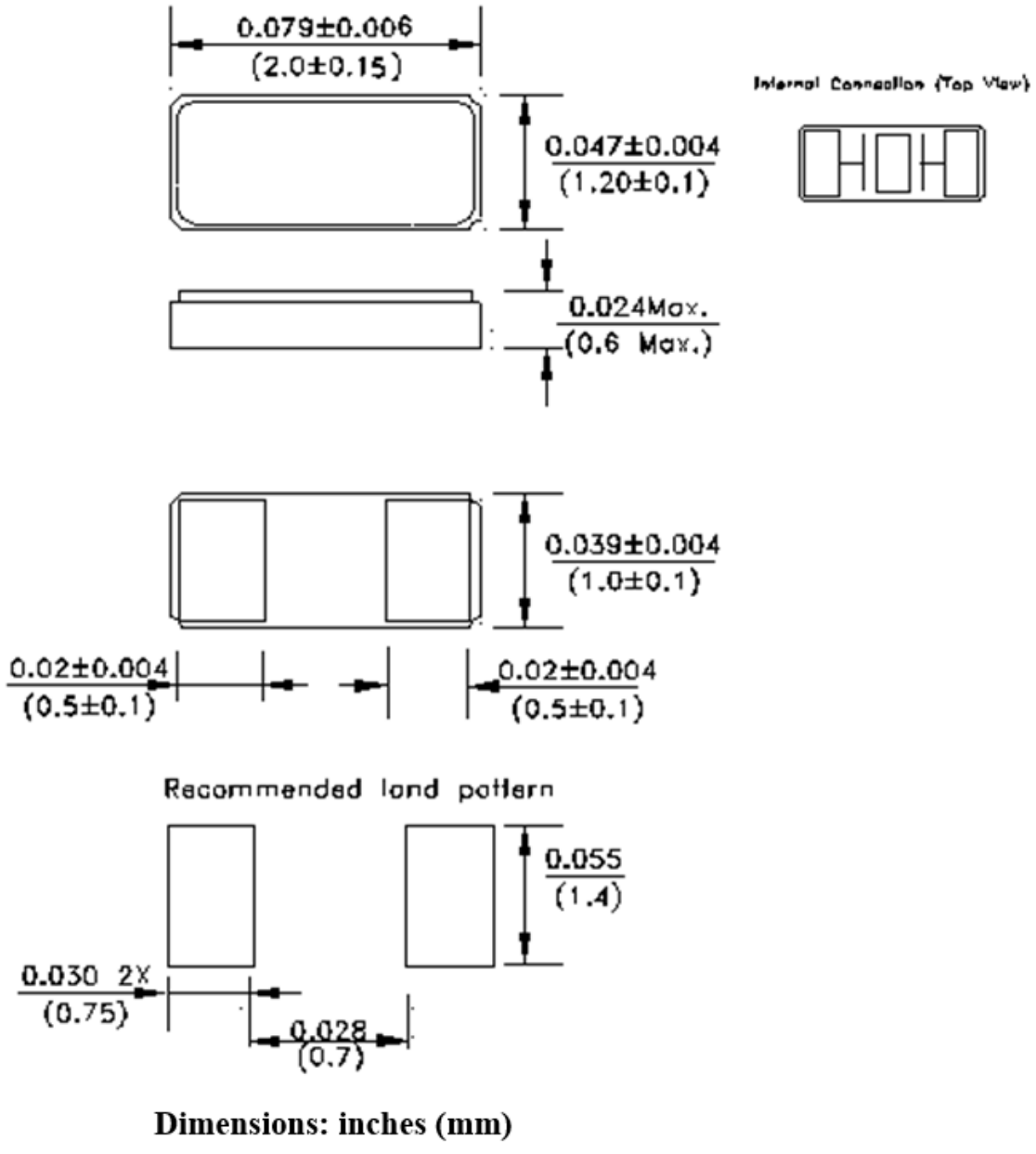
Mechanical Dimensions



Dimensions: inches (mm)

Notes:

- Chamfer not shown.
- Due to material availability, the outline and finish color of the component may vary. This variation in no way affects the electrical performance of the product.

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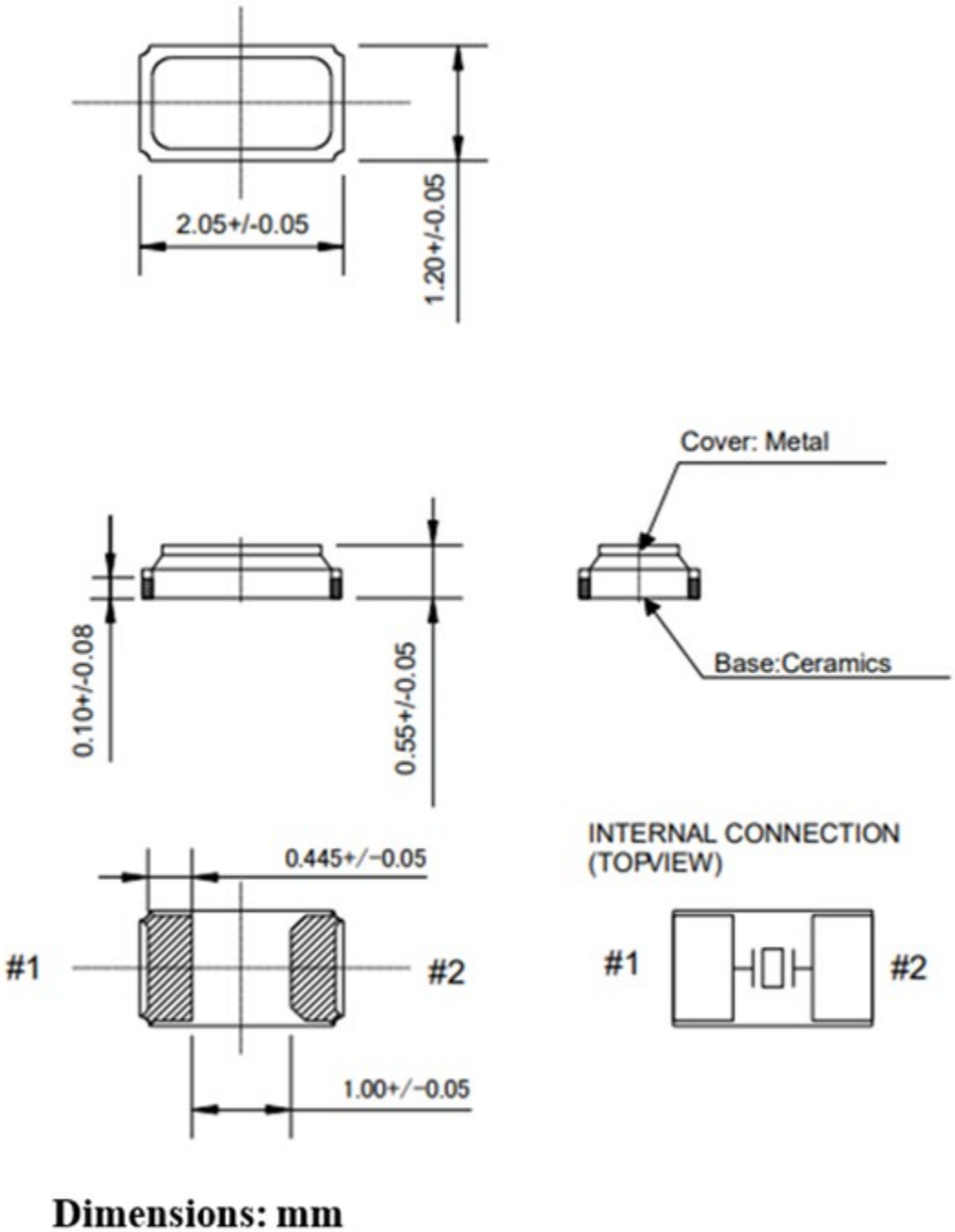
MSL Level = N/A

Alternative Mechanical Dimensions 1



Dimensions: mm

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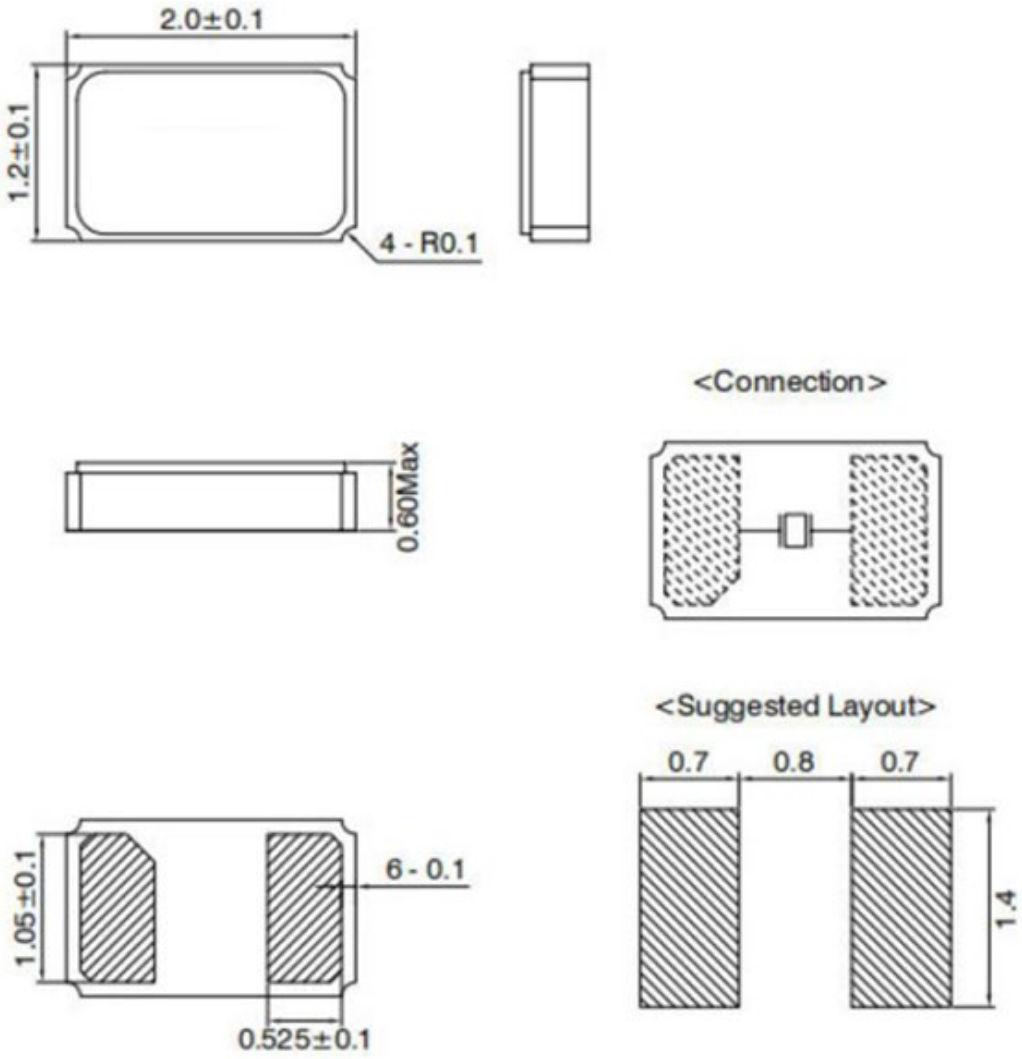
RoHS/RoHS II Compliant
MSL Level = N/A

Alternative Mechanical Dimensions 2



Dimensions: mm

Sealing Method = Seam Sealing

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Reflow Profile [JEDEC J-STD-020]

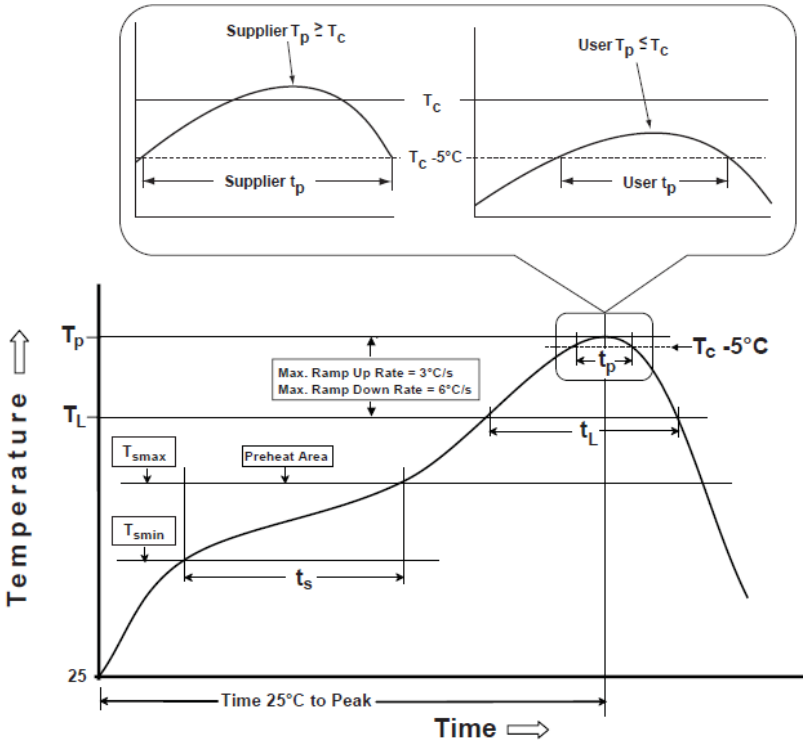

Table 1

SnPb Eutectic Process Classification Temperatures (T_c)		
Package Thickness	**Volume mm³ <350**	**Volume mm³ ≥350**
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

Table 2

Pb-Free Process Classification Temperatures (T_c)			
Package Thickness	**Volume mm³ <350**	**Volume mm³ 350-2000**	**Volume mm³ >2000**
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum (T_{smin})	100°C	150°C
Temperature maximum (T_{smax})	150°C	200°C
Time (T_{smin} to T_{smax}) (t_s)	60 - 120 sec.	60 - 120 sec.
Average ramp-up rate (T_{smax} to T_P)	3°C/sec. max	3°C/sec. max
Liquidous temperature (T_L)	183°C	217°C
Time at liquidous (t_L)	60 - 150 sec.	60 - 150 sec.
Peak package body temperature (T_P)*	**see Table 1**	**see Table 2**
Time (t_p)** within 5°C of the specified classification temperature (T_C)	20 sec.	30 sec.
Ramp-down rate (T_p to T_{smax})	6°C/sec. max	6°C/sec. max
Time 25°C to peak temperature	6 min. max	8 min. max
Reflow cycles	2 max	2 max

*Tolerance for peak profile temperature (T_P) is defined as a supplier minimum and a user maximum.

**Tolerance for time at peak profile temperature (t_p) is defined as supplier minimum and a user maximum.

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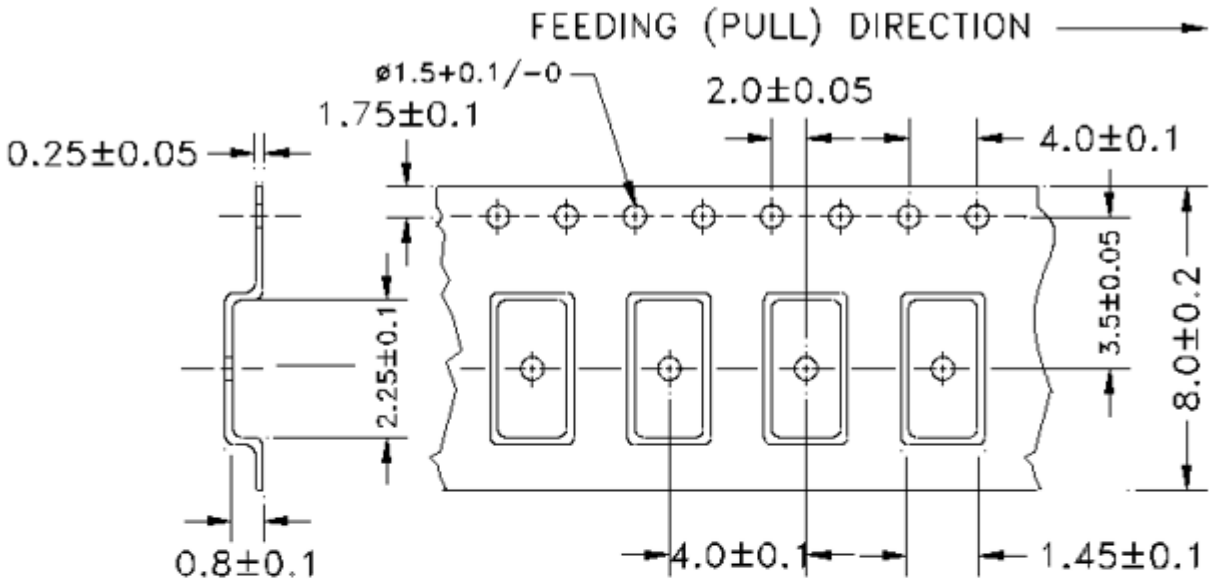
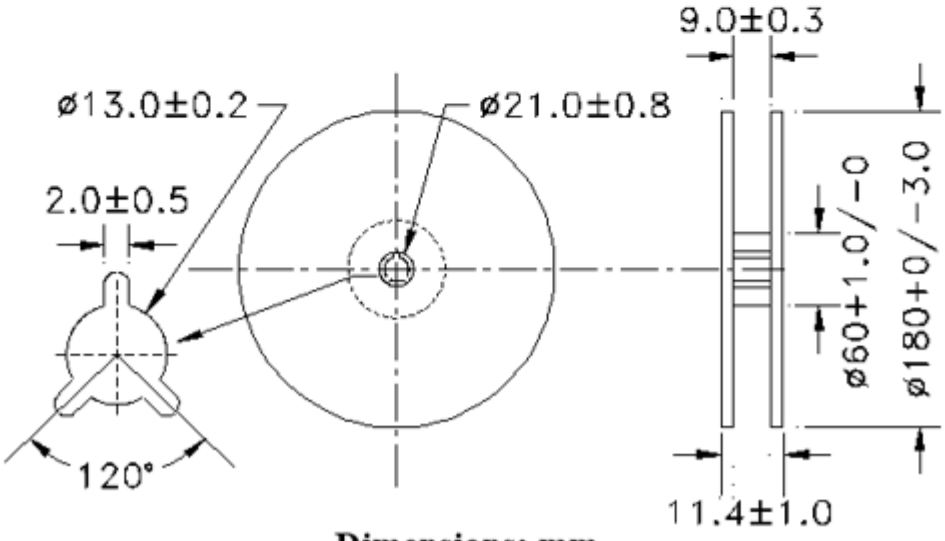
Packaging:

T=Tape and reel (3,000pcs/reel)





Dimensions: mm

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