32.768kHz SMD Crystal

ABS07

Request Samples | Check Inventory

3.2 x 1.5 x 0.9 mm
RoHS/RoHS II Compliant
MSL Level = N/A

Features

- Low frequency in small size SMD
- 0.9mm height ideal for high density circuit boards
- Seam sealed 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	Min.	Typ.	Max.	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:	-0.040	-0.036		ppm/T²	
Turn-over temperature:	+20	+25	+30	ºC	
Equivalent series resistance (R1)			70	kΩ	-40 ~ +85°C
			95		-40 ~ +125°C
			95		-55 ~ +125°C
Shunt capacitance (C0)		0.9 ~ 1.2	2.0	pF	
Load capacitance (CL)		12.5		pF	Option "blank"; See options
Drive Level		0.1	0.5	µW	
Q value	10000	30000			
Aging	-3		+3	ppm	@25°C± 3°C First year
Insulation Resistance	500			MΩ	@ 100Vdc ± 15V

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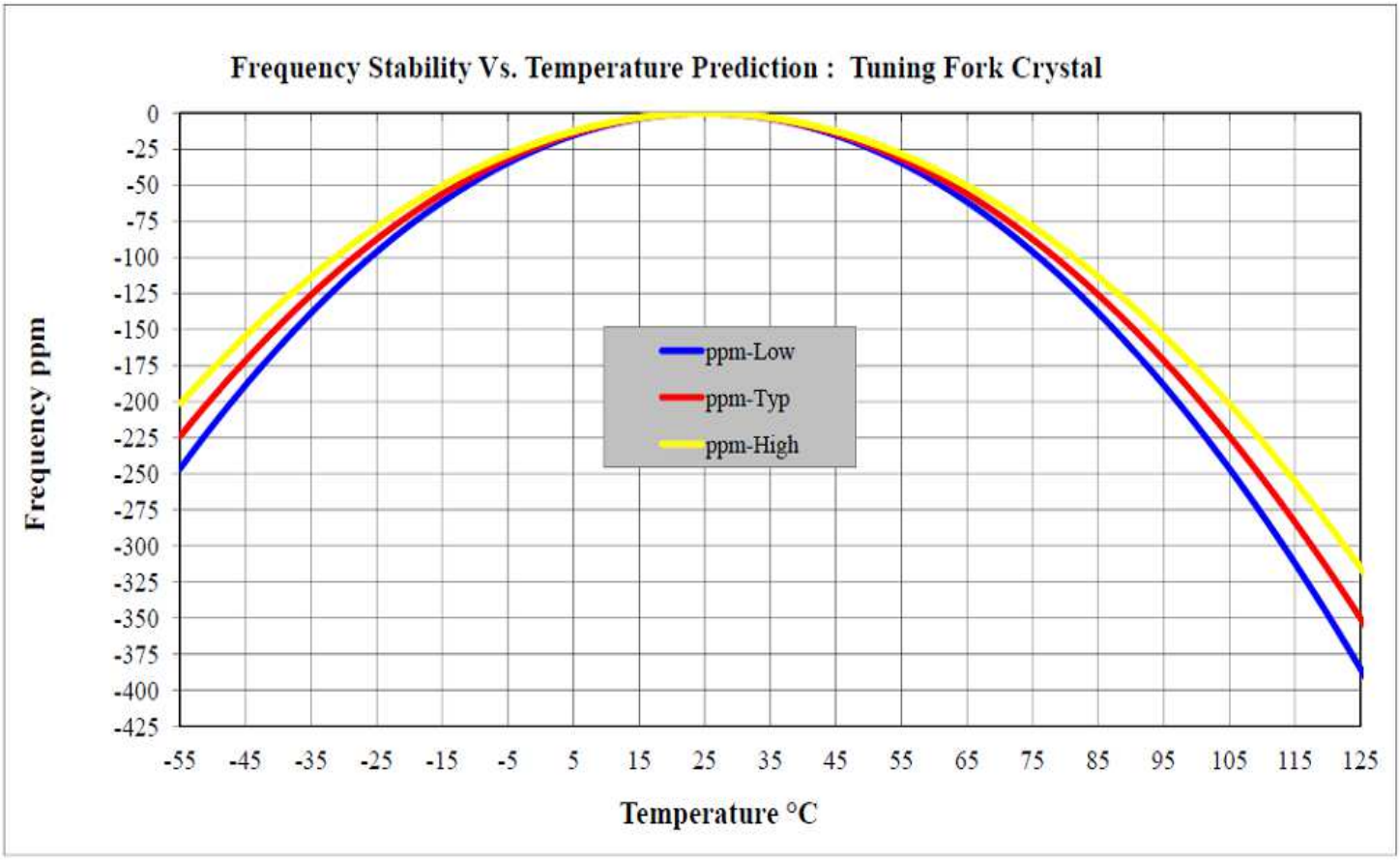
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Frequency vs. Temperature Characteristics



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Options and Part Identification (Left blank if standard)

ABS07 ☐ - 32.768 kHz - ☐ - ☐ - ☐ - ☐

Height
Blank: 0.9mm max.
1: 0.65mm max.

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

(*) Only available with standard height=0.9mm max

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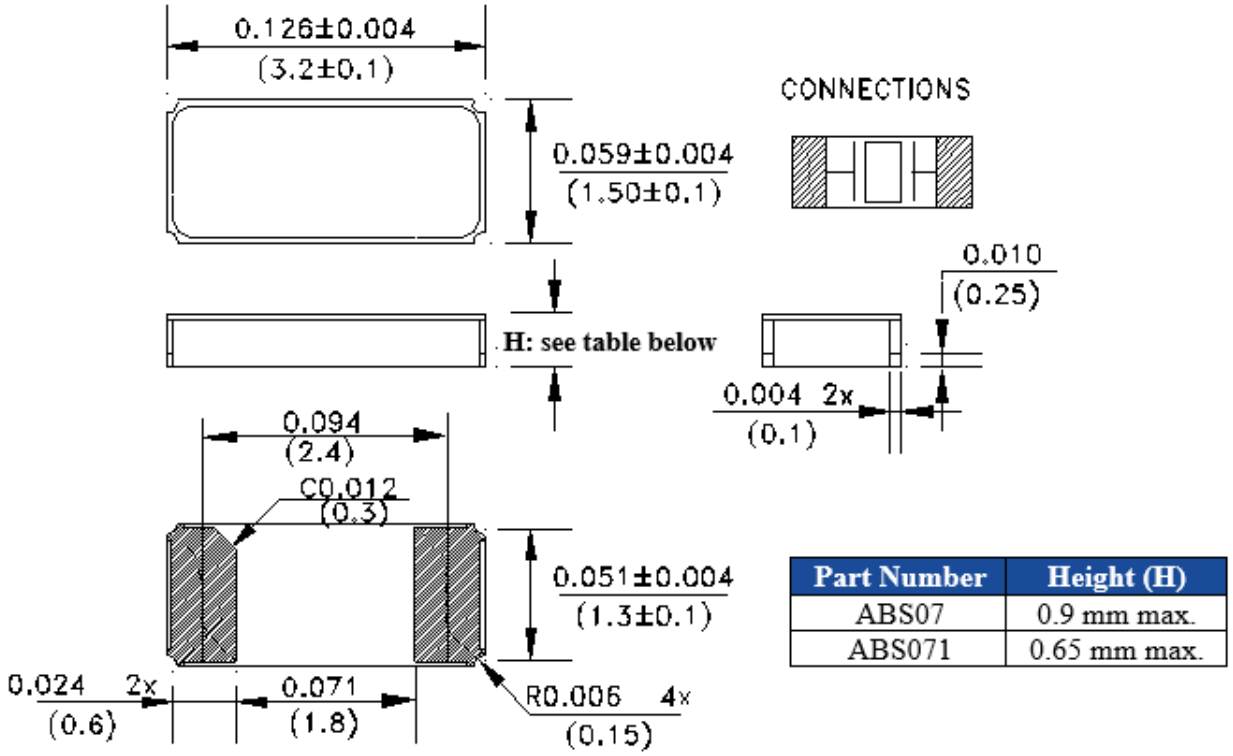
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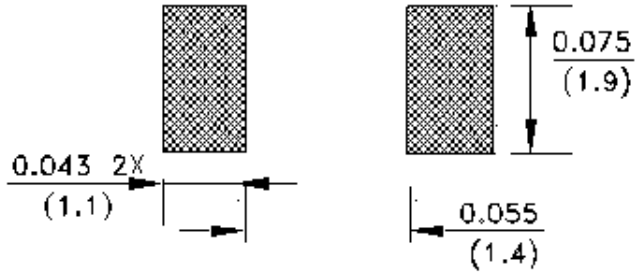
3.2 x 1.5 x 0.9 mm
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MSL Level = N/A

Mechanical Dimensions



Part Number	Height (H)
ABS07	0.9 mm max.
ABS071	0.65 mm max.

Recommended land pattern



Note: 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.

Sealing Method = Seam Sealing

Dimensions: inches (mm)

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Reflow Profile [JEDEC J-STD-020]

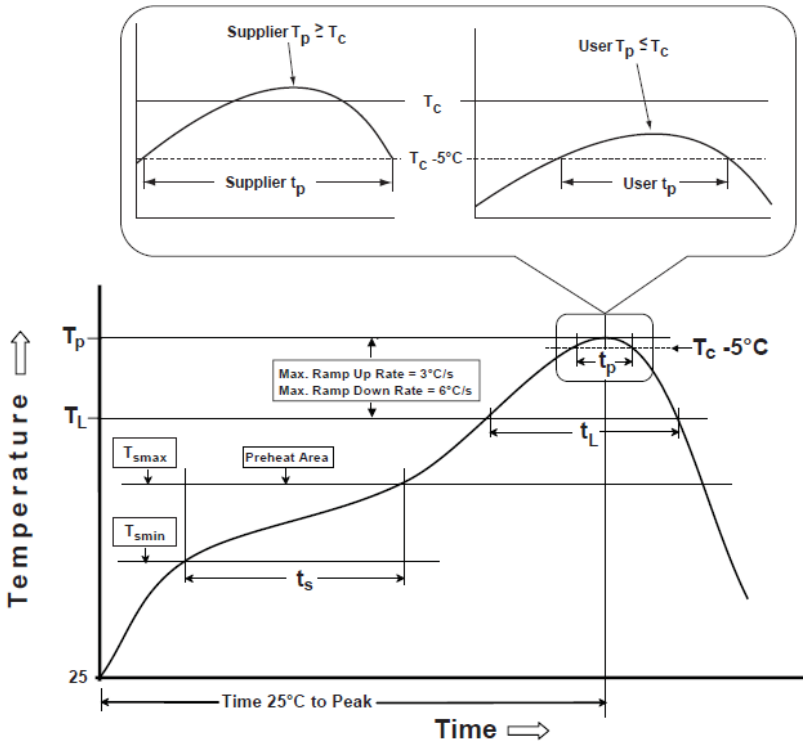


Table 1

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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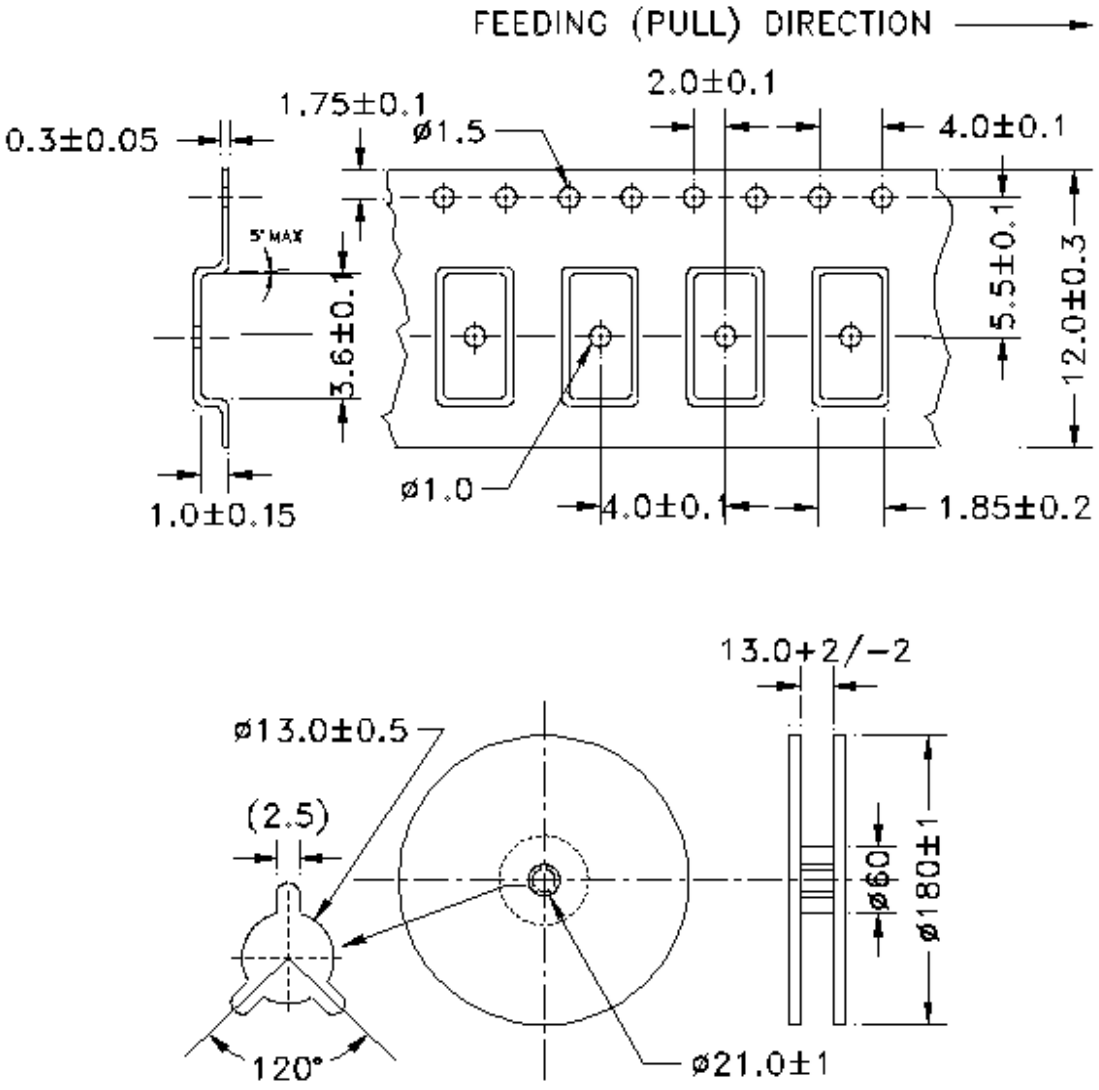
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MSL Level = N/A

Packaging

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



Dimensions: mm

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