

32.768kHz SMD Crystal

ABS07

Request Samples



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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 | °C | Option “blank”; See options |
| Storage Temperature | -55 | | +125 | °C | |
| Frequency Tolerance @+25°C | -20 | | +20 | ppm | Option “blank”; See options |
| Temperature Coefficient: | -0.040 | -0.036 | | ppm/T ² | |
| Turn-over temperature: | +20 | +25 | +30 | °C | |
| 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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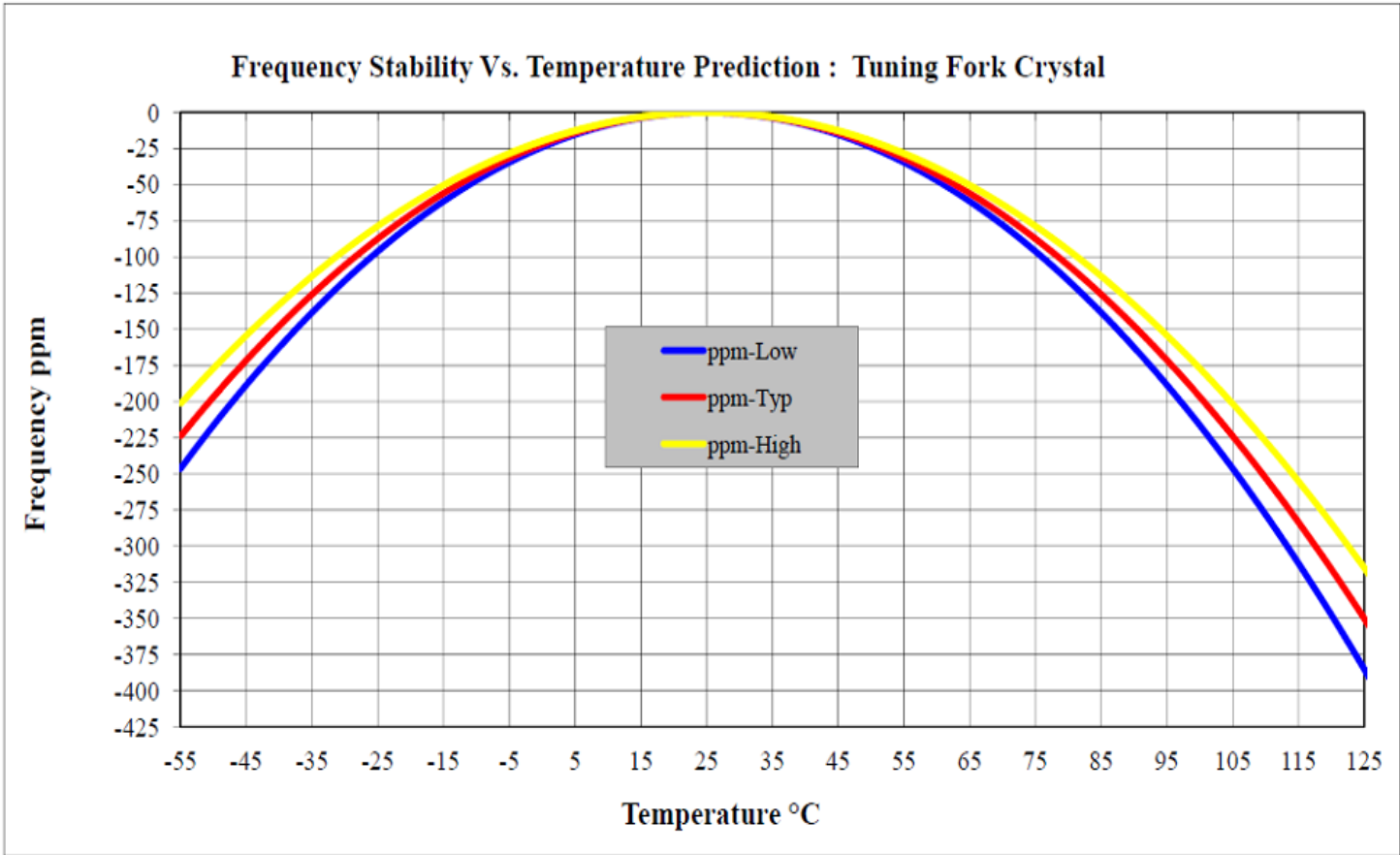


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Frequency vs. Temperature Characteristics



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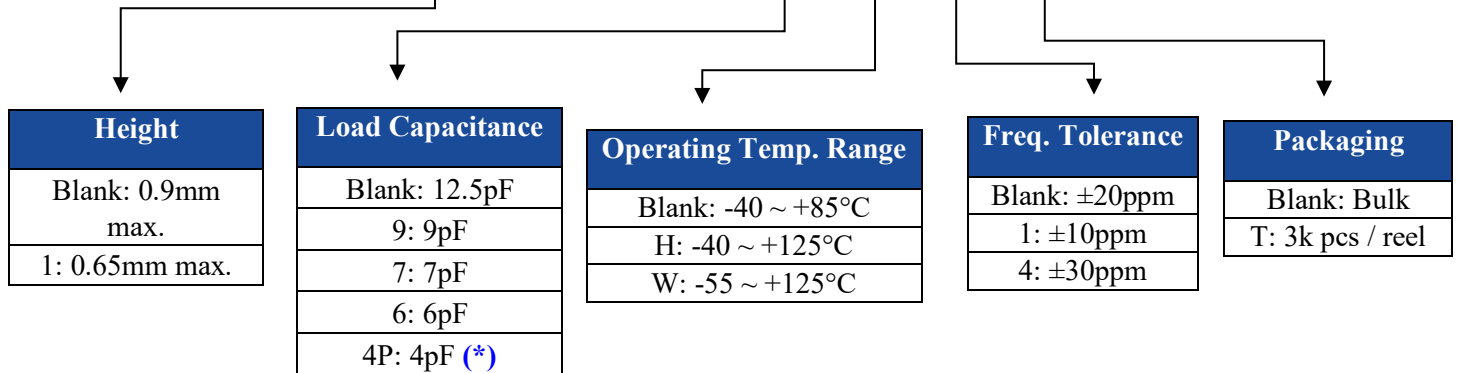


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Options and Part Identification (Left blank if standard)

ABS07 - 32.768 kHz - - - -



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

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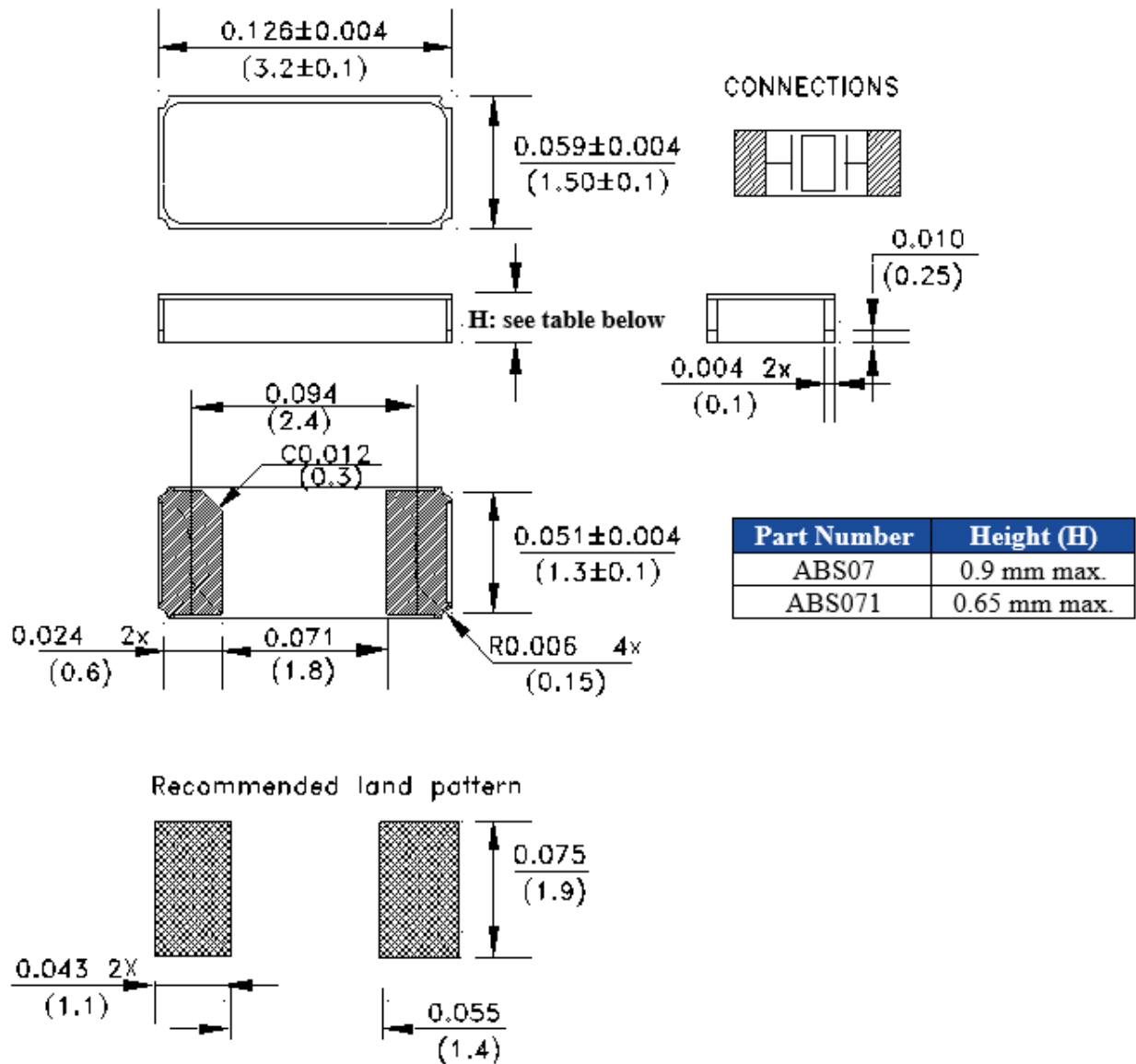
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Mechanical Dimensions



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]

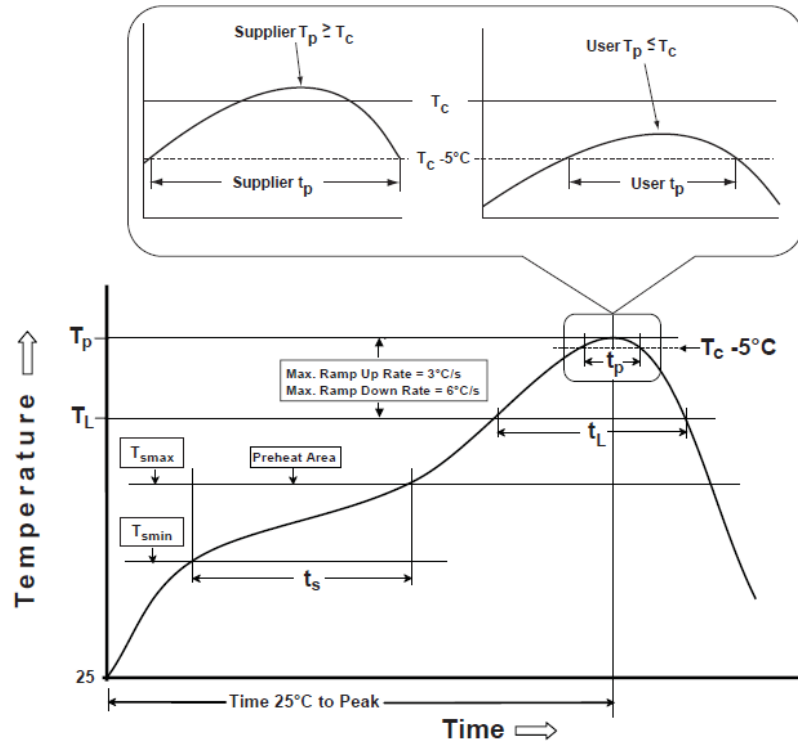


Table 1

SnPb Eutectic Process

Classification Temperatures (T_c)

| Package Thickness | Volume mm ³ <350 | Volume mm ³ ≥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 mm ³ <350 | Volume mm ³ 350-2000 | Volume mm ³ >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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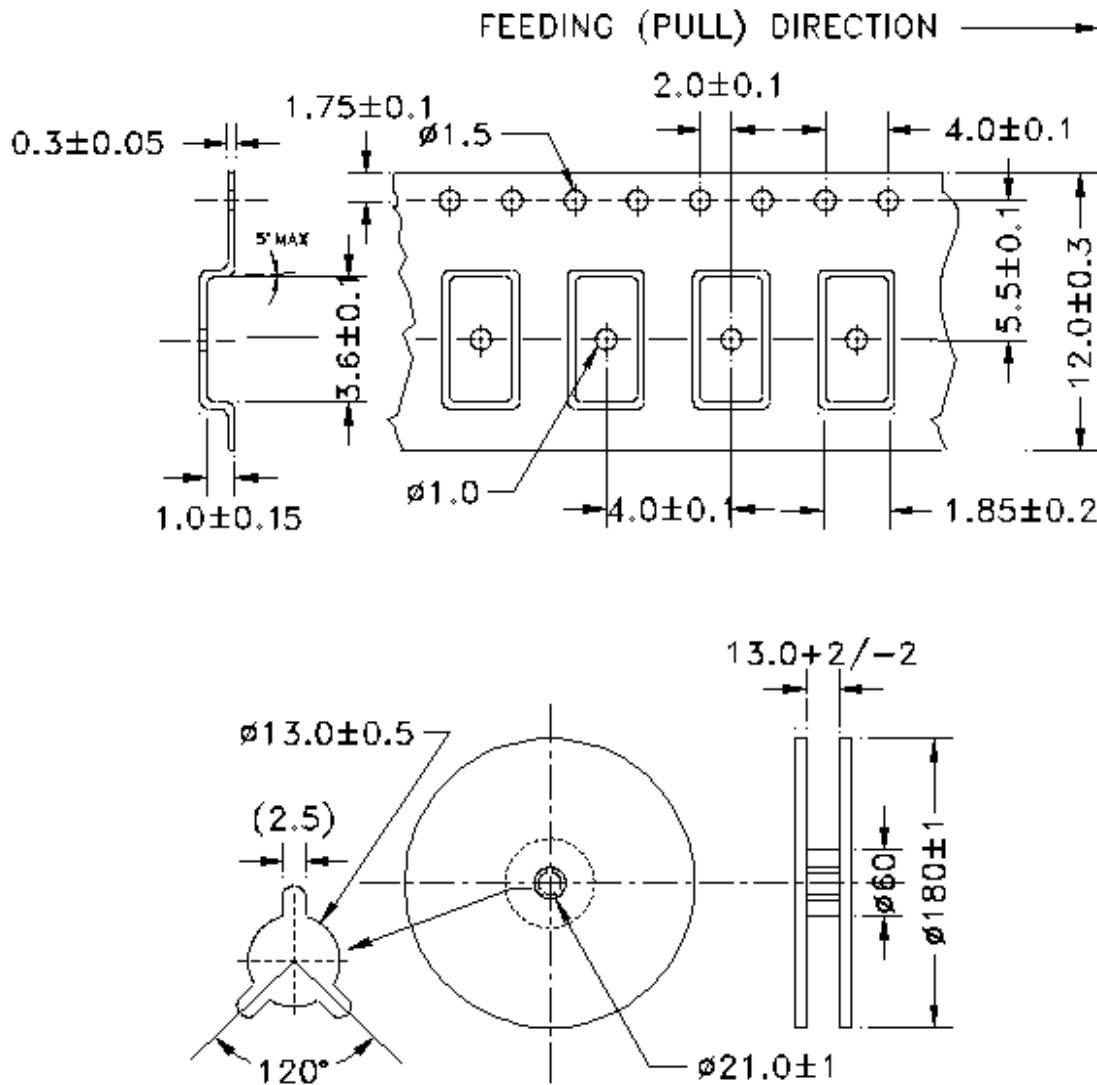


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Packaging

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



Dimensions: mm

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