

Ceramic SMD Crystal

ABM3

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5.0 x 3.2x 1.3 mm
RoHS/RoHS II Compliant
MSL Level = N/A

Features

- AT-cut fundamental or 3rd OT mode
- Suitable for RoHS reflow profile
- Tight Stability available ± 10 ppm
- Ceramic package hermetically glass sealed assures high precision and reliability

Applications

- Communication and test equipment
- PCMCIA and wireless applications

Key Electrical Specifications

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency Range	8.000		54.000	MHz	Fundamental
	54.100		80.000		3 rd Overtone
Operation Mode	Fundamental or 3 rd Overtone				
Operating Temperature	-10		+60	°C	See options
Storage Temperature	-40		+90	°C	
Frequency Tolerance @+25°C	-50		+50	ppm	See options
Frequency Stability over the Operating Temperature (ref. to +25°C)	-50		+50	ppm	See options
Equivalent series resistance (R1)			140	Ω	$8.000 \leq F < 9.000$ (Fund)
			120		$9.000 \leq F < 10.000$ (Fund)
			60		$10.000 \leq F < 16.000$ (Fund)
			40		$16.000 \leq F < 20.000$ (Fund)
			30		$20.000 \leq F < 30.000$ (Fund)
			25		$30.000 \leq F \leq 54.000$ (Fund)
			60		$54.000 < F \leq 80.000$ (3 rd OT)
Shunt capacitance (C0)			7	pF	
Load capacitance (CL)	18			pF	Standard (See options if other than STD)
Drive Level		10	100	μ W	
Aging	-5		+5	ppm	@25°C \pm 3°C First year
Insulation Resistance	500			M Ω	@ 100Vdc \pm 15V



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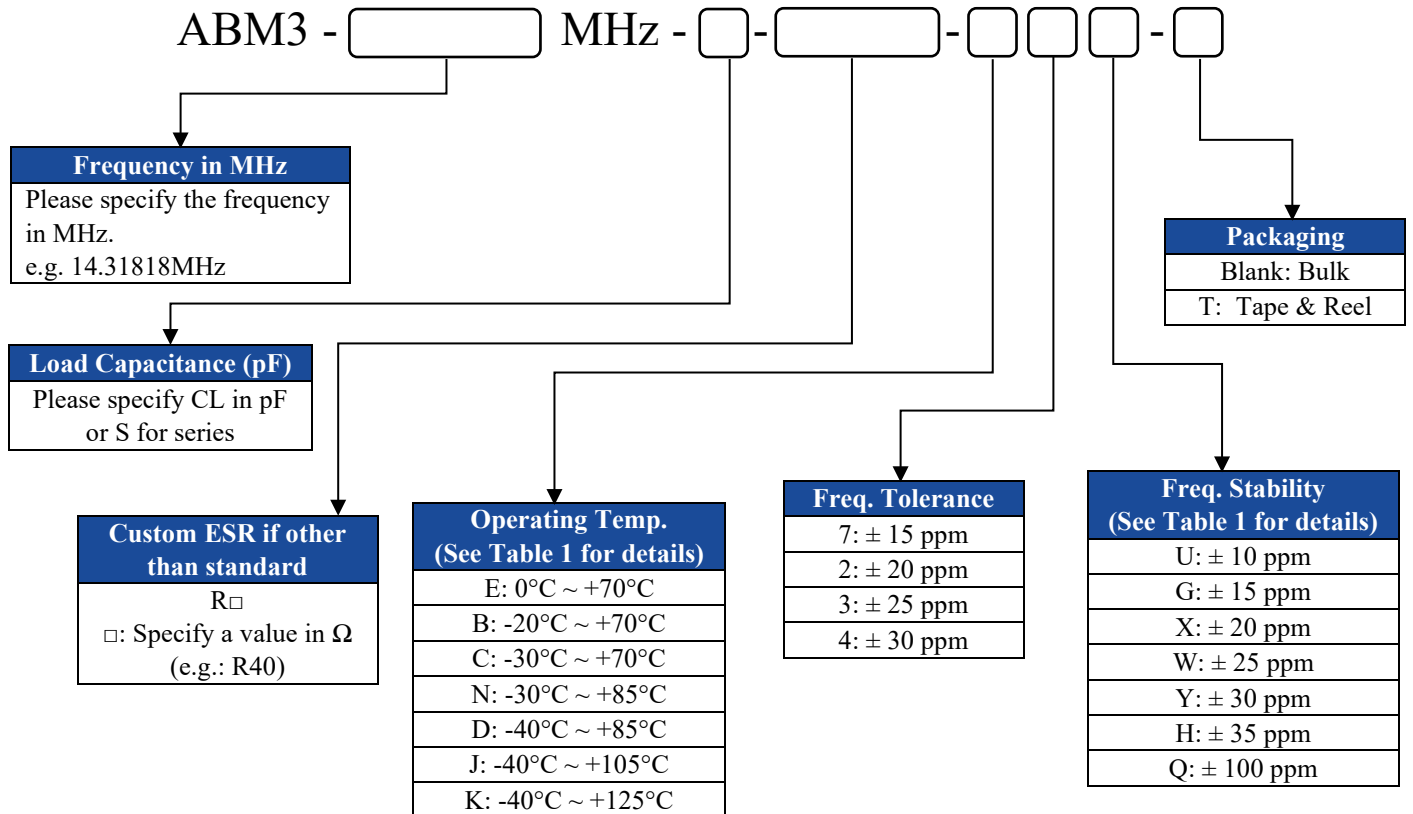


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Options and Part Identification (left blank if standard)



Note: See Table 1 for the availability of Operating Temp. and Freq. Stability combinations.

Table 1 Available Combinations of Operating Temp. and Freq. Stability

Operating Temp.	Freq. Stability							
	U:±10ppm	G:±15ppm	X:±20ppm	W:±25ppm	Y:±30ppm	H:±35ppm	Std:±50ppm	Q:±100ppm
Std: -10°C ~ +60°C	√	√	√	√	√	√	√	√
E: 0°C ~ +70°C	√	√	√	√	√	√	√	√
B: -20°C ~ +70°C	√	√	√	√	√	√	√	√
C: -30°C ~ +70°C		√	√	√	√	√	√	√
N: -30°C ~ +85°C		√	√	√	√	√	√	√
D: -40°C ~ +85°C			√	√	√	√	√	√
J: -40°C ~ +105°C					√	√	√	√
K: -40°C ~ +125°C							√	√



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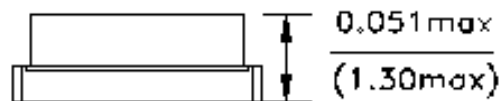
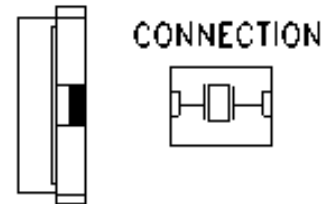
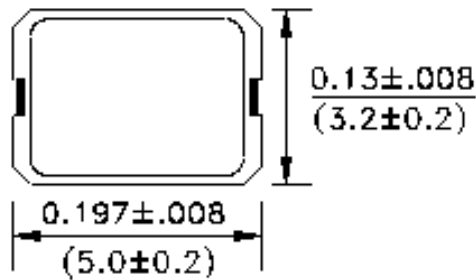


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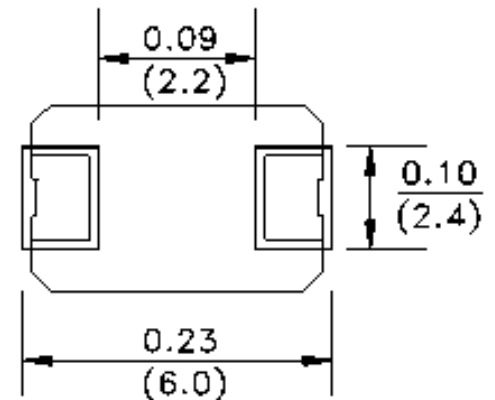
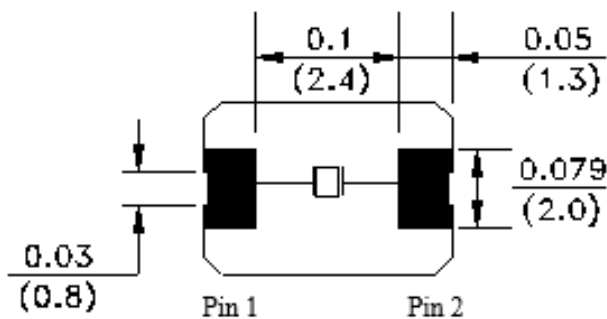


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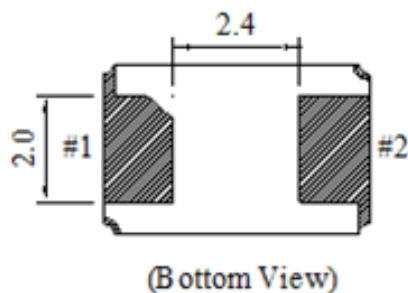
Mechanical Dimensions



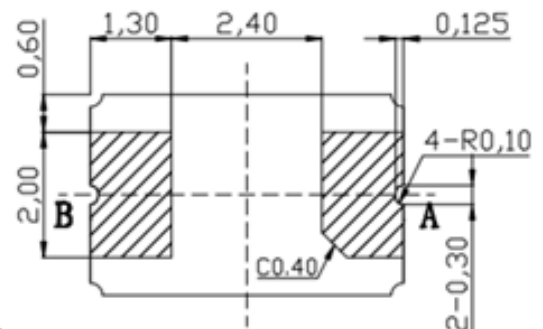
Recommended land pattern



Alternative bottom packaging 1:



Alternative bottom packaging 2:



Dimensions: inches (mm)

Sealing Method = Glass Sealing



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Reflow Profile [JEDEC J-STD-020]

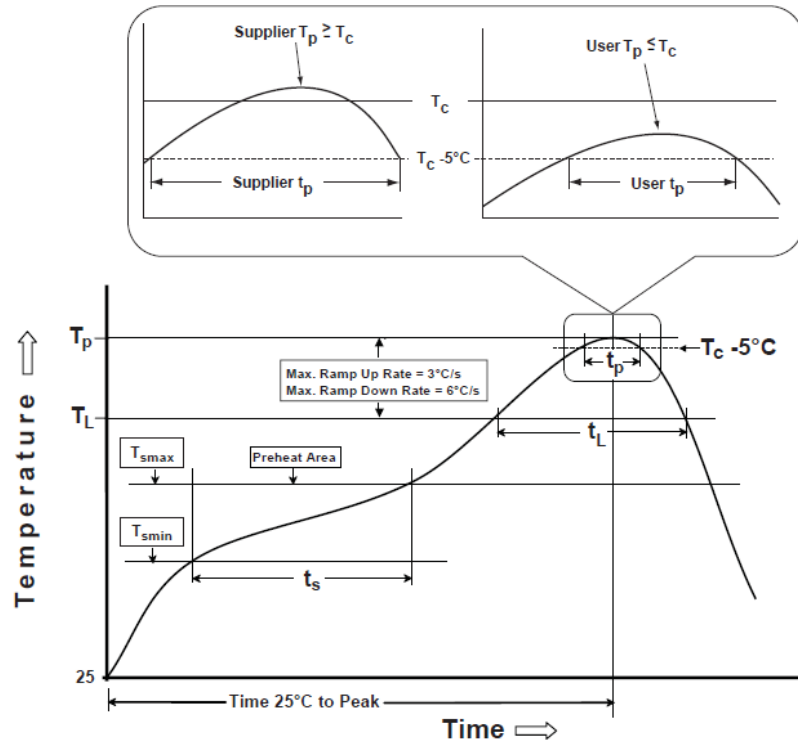


Table 1

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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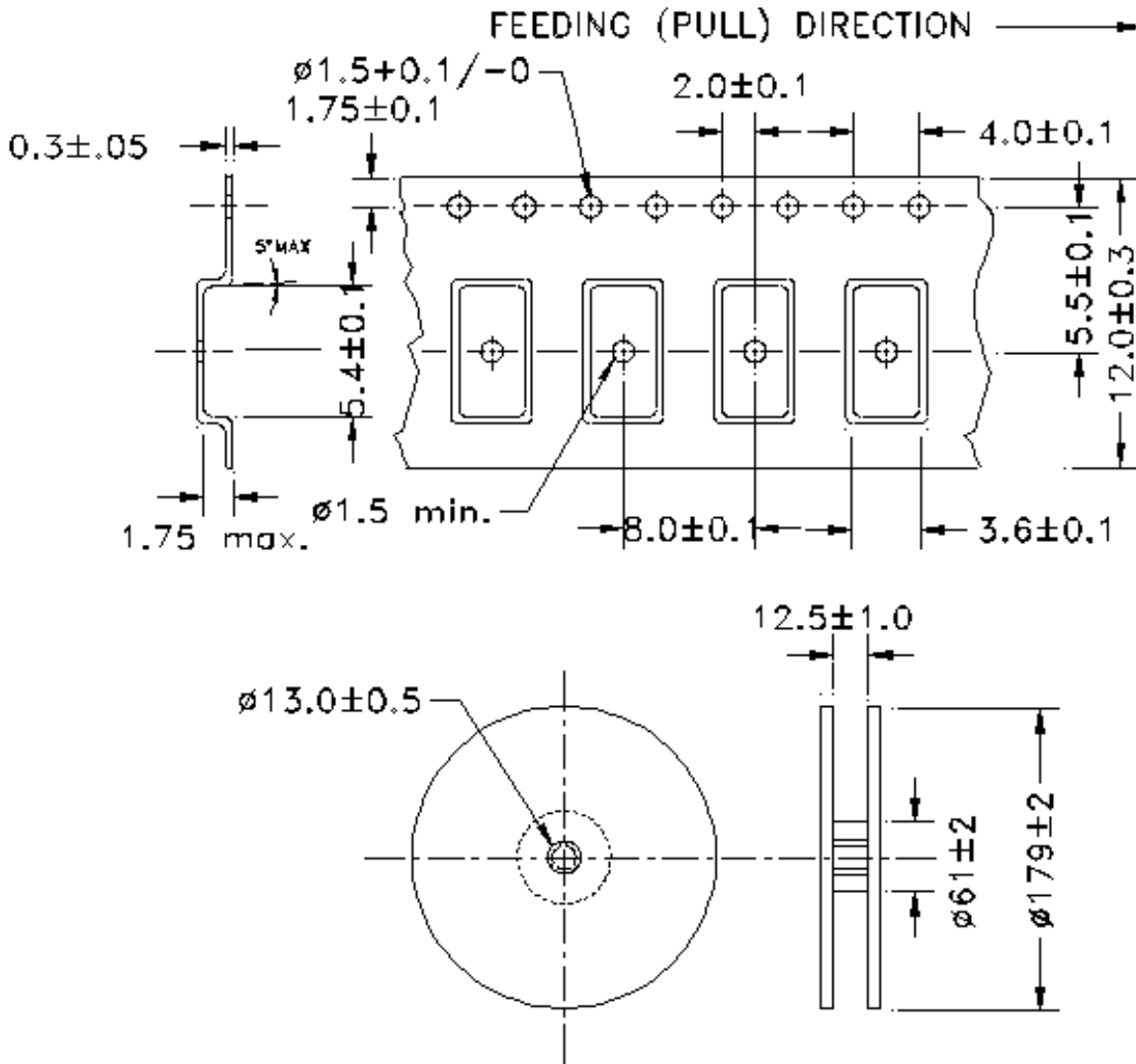
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Packaging

1000pcs/reel



Dimensions: mm

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