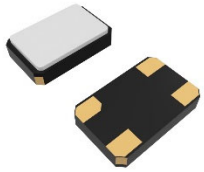
ABM3B series
CERAMIC SMD CRYSTAL

Description

The ABM3B series is a quartz crystal offered in a 5.0mm x 3.2mm x 1.1mm four-pad SMD package. Tight frequency accuracy of ±10ppm and stability of ±15ppm over operating temperature range of -40°C to +85°C, low plating load (CL) value of 6pF, and low Equivalent Series Resistance (ESR) is achieved in this compact package. The ABM3B series offers industry standard frequencies common for communication, test equipment, high density, PCMCIA end applications.



Features

- Suitable for reflow
- Tight stability available
- Seam sealed for long-term reliability
- Seam Sealing
- REACH/RoHS II Compliant | MSL Level N/A

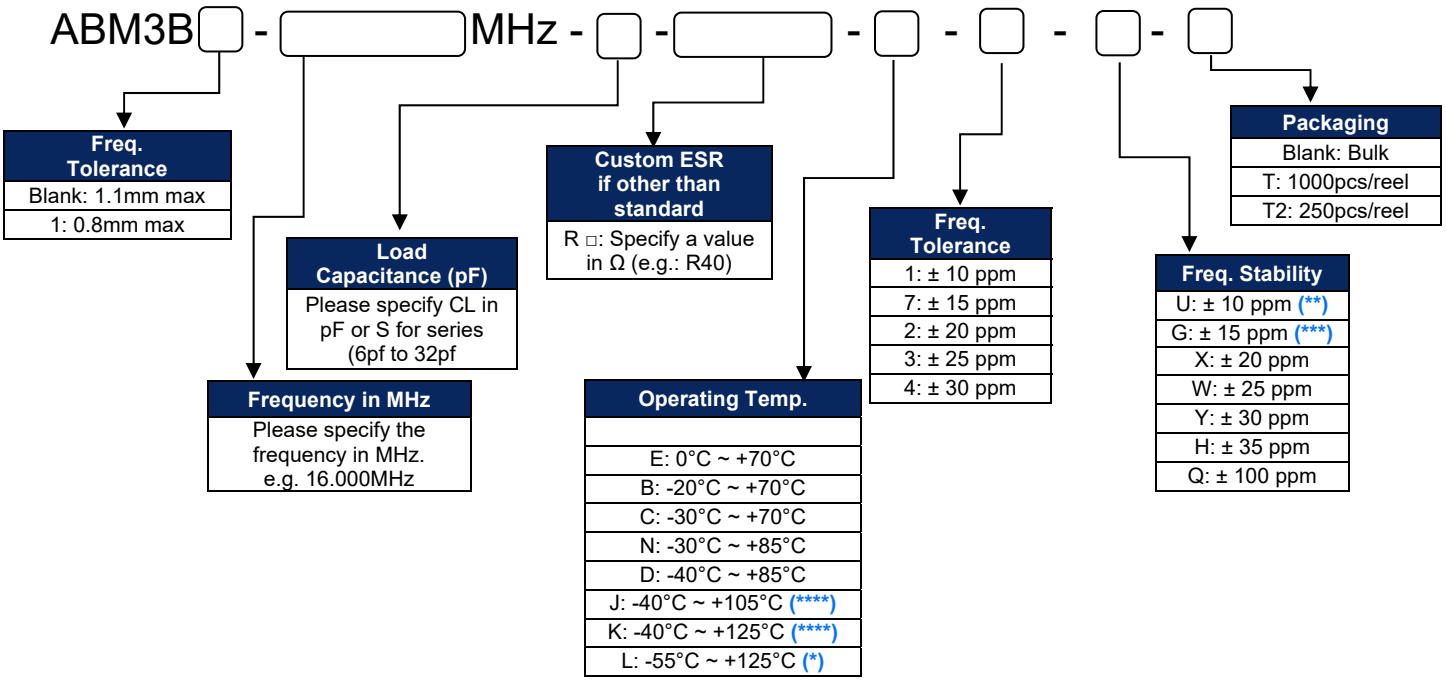
Typical Applications

- Communication and Test equipment
- High Density applications
- PCMCIA and wireless applications

Electrical Specifications

Parameters	Min.	Typ.	Max.	Units	Notes
Frequency Range	8.0		50.0	MHz	Fundamental
	50.1		125.0		3rd OT
Operating Temperature Range	-10		+60	ºC	See options
Storage Temperature	-40		+85	ºC	
Frequency Tolerance @ +25°C			+/-50	ppm	See options
Frequency Stability over the Operating Temperature (ref. to +25°C)			+/-50	ppm	See options
Equivalent series resistance			200	Ω	8~9.999MHz (Fund.)
			100		10~11.999MHz (Fund.)
			70		12~15.999MHz (Fund.)
			50		16~50MHz (Fund.)
			60		50.001~80MHz (3rd OT)
			80		80.001~125MHz (3rd OT)
Shunt Capacitance (C0)			7.0	pF	
Load Capacitance (CL)		18.0		pF	See options
Drive Level		10	100	µW	
Aging (1 year)	-5		+5	ppm	@ 25°C±3°C
Insulation Resistance	500			MΩ	@ 100Vdc±15V

Part Identification



Notes:
*: Available with Freq. Stability Option Z only

**: Available for standard operating temp. range, and temp option E and B

***: Available for standard operating temp. range, and temp option E, B, C and N. Availability with operating temp. option D is frequency dependent. Please contact Abracon.

**** Available with Freq. Stability ±50ppm and ±100ppm. Please contact Abracon for tighter freq. stability

Mechanical Dimensions

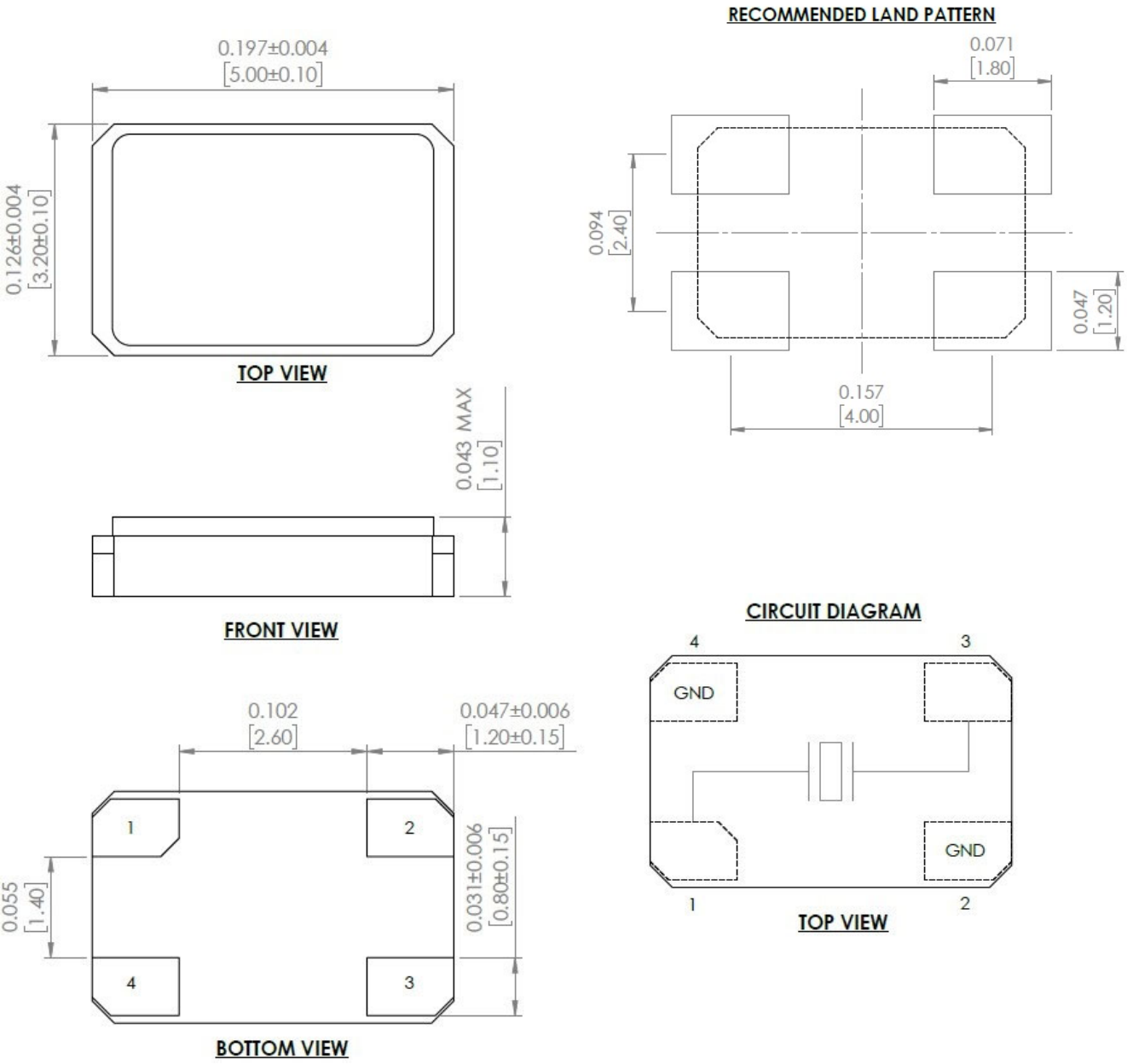


Table 2

Freq. Tolerance
ABM3B: 1.1mm max
ABM3B1: 0.8mm max

Note: Due to the availability of raw materials, this part may be manufactured with the chamfer on Pin 1 or 4. Please be advised that this does not affect the electrical characteristics of the crystal in any way.

Sealing Method: = Seam Sealing

Dimensions: inches [mm]

Revision: U
8/27/2024

Disclaimer

Check Inventory
Request Samples

Reflow Profile [JEDEC J-STD-020]

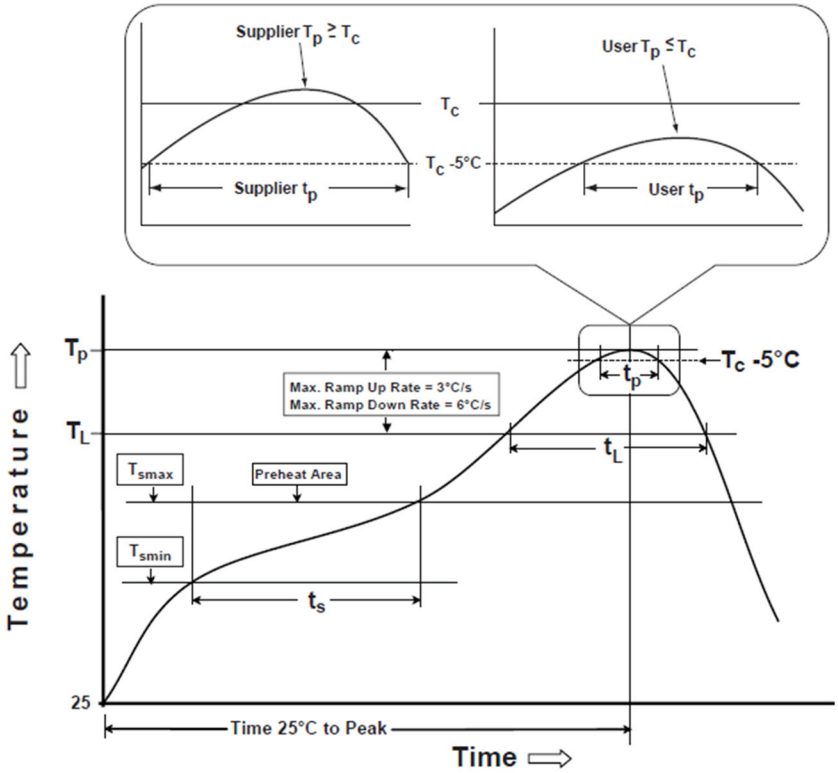


Table 1

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

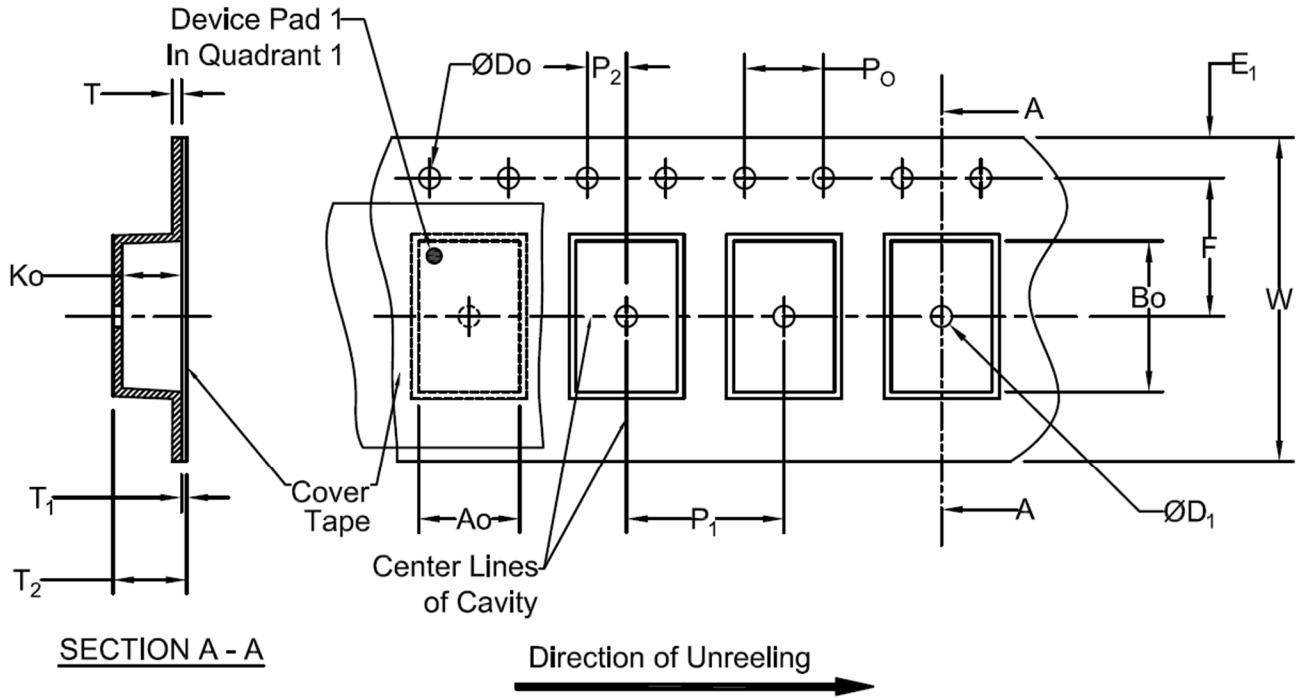
Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum (T_{smin})	100°C	150°C
Temperature maximum (T_{smax})	150°C	200°C
Time (T_{smin} to T_{smax}) (t_s)	60 - 120 sec.	60 - 120 sec.
Average ramp-up rate (T_{smax} to T_P)	3°C/sec. max	3°C/sec. max
Liquidous temperature (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.

Packaging

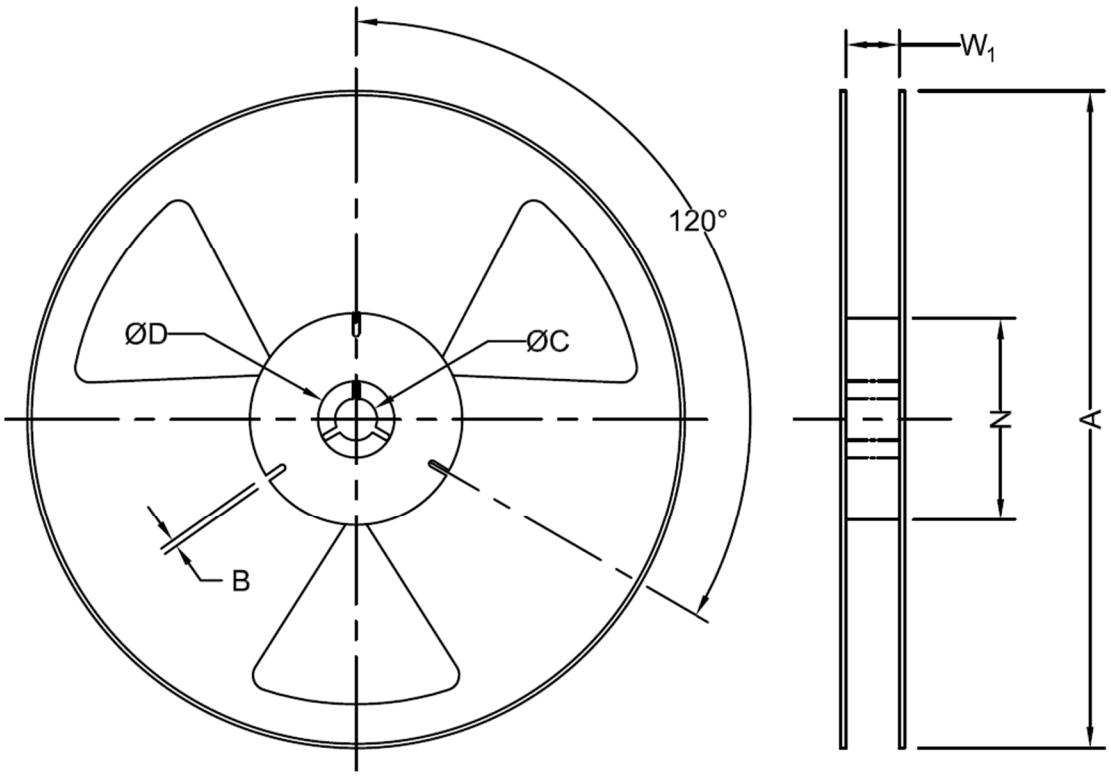
T: 250pcs



Tape Specifications (mm)							
Width	**Ao**	**Bo**	**Do**	**D_1**	**E_1**	**F**	**Ko**
12mm	*	*	1.5+0.1/-0.0	1.0	1.75±0.1	3.5±0.05	*
Width	**P_1**	**P_2**	**P_0**	**T (Max)**	**T_1 (Max)**	**T_2 (Max)**	**W (Max)**
12mm	8.0±0.1	2.0±0.05	4.0±0.1	0.6	0.1	6.5	12.3

***Note: Compliant to EIA-481**

Packaging continued



Reel Specifications (mm)							
Width	**Qty/Reel**	**A (Nom)**	**B (Min)**	**C (Min)**	**D (Min)**	**N (Min)**	***W1**
12mm	250/1000	178	1.5	13.0+0.5/-0.2	20.2	50	12.4+2.0/-0.0

***Note: Measured at Hub**