ABM3BN series
CERAMIC SMD CRYSTAL

Description

The ABM3BN 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 4pF, and low Equivalent Series Resistance (ESR) is achieved in this compact package. The ABM3BN 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
- REACH/RoHS II Compliant | MSL Level N/A

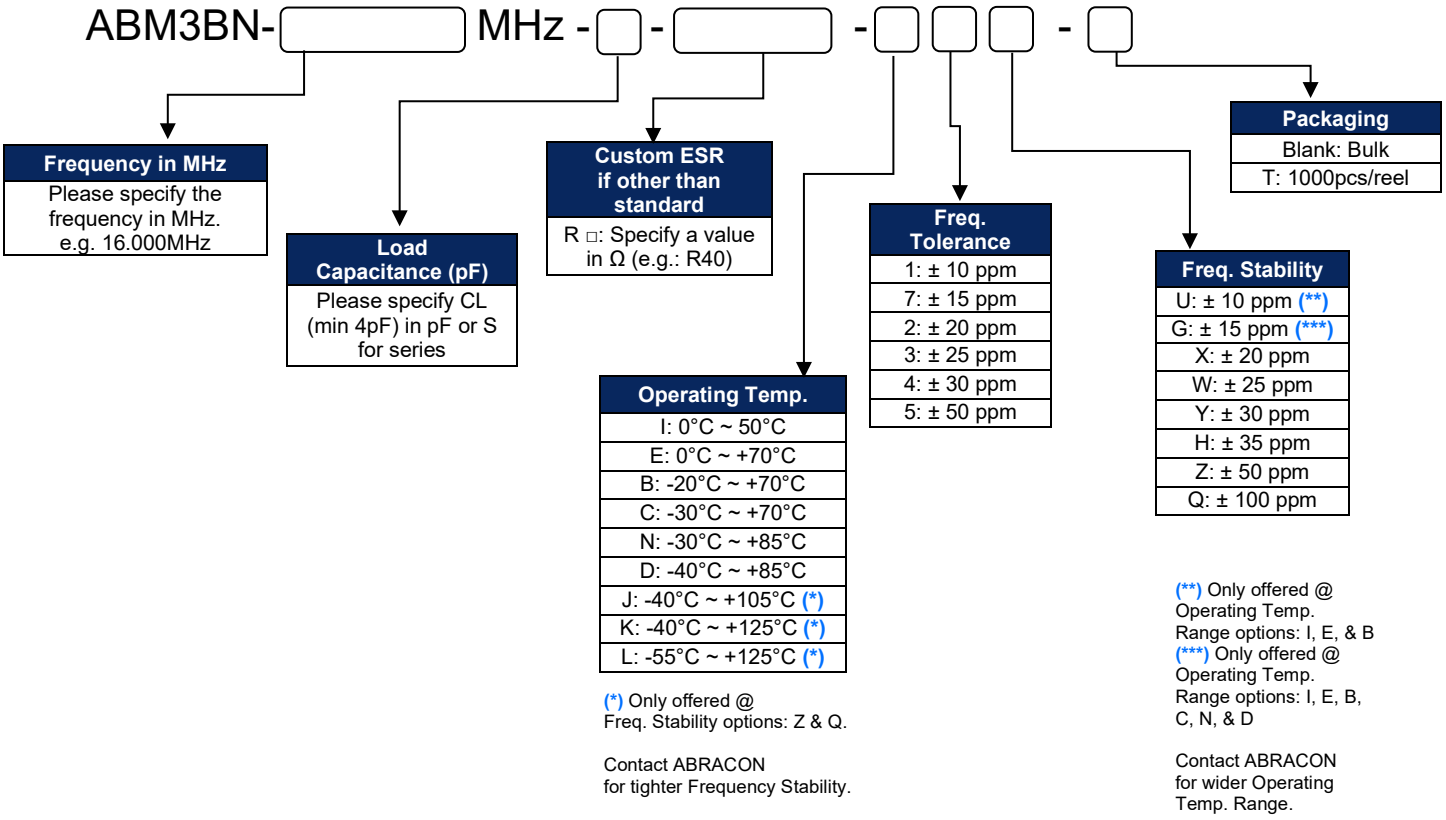
Typical Applications

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

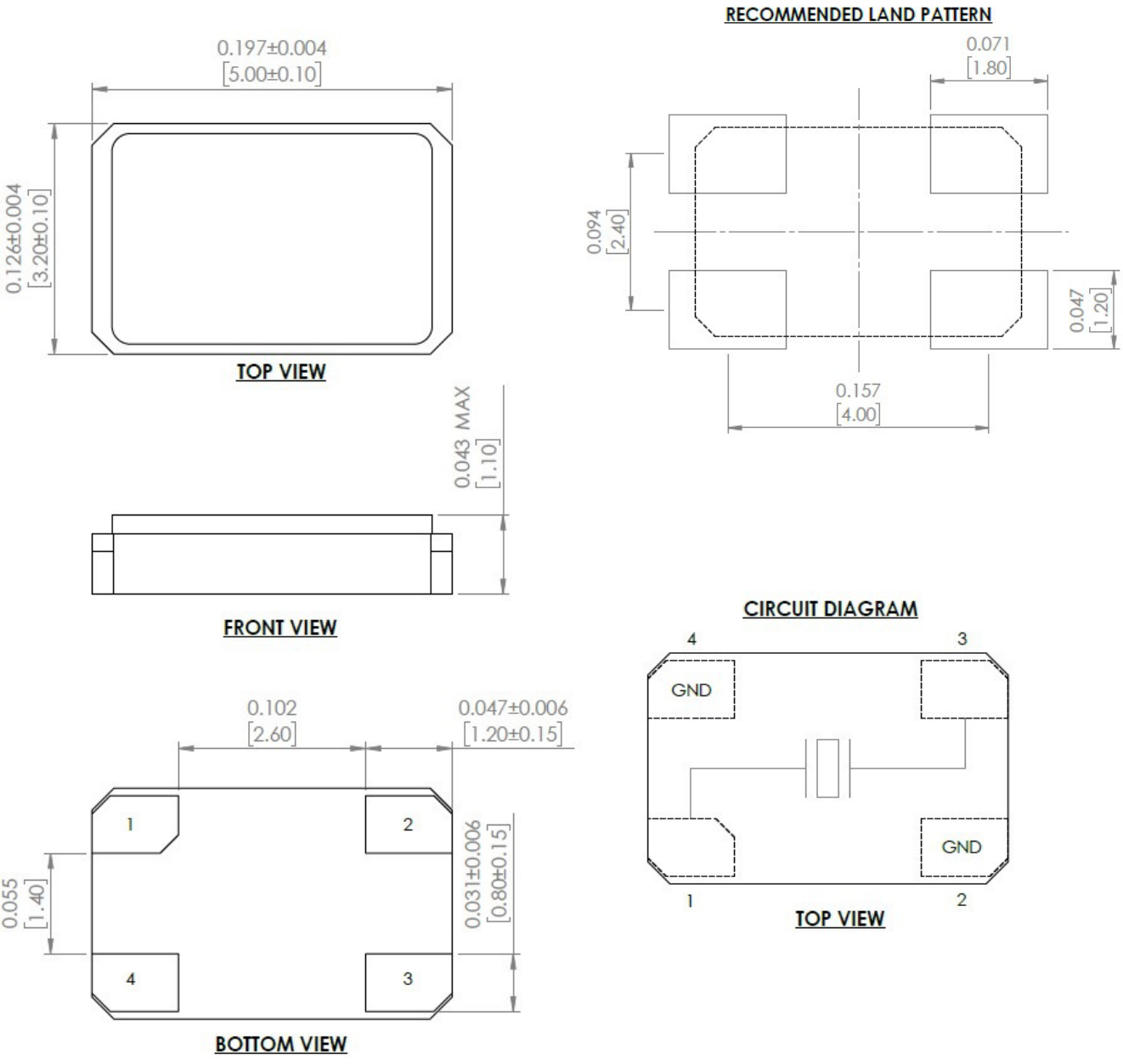
Electrical Specifications

Parameters	Min.	Typ.	Max.	Units	Notes
Frequency Range	8.0		50.0	MHz	Fundamental
	50.1		125.0		3rd OT
Operating Temperature Range	-40		+85	ºC	See options
Storage Temperature	-40		+85	ºC	
Frequency Tolerance @ +25°C	-10		+10	ppm	See options
Frequency Stability over the Operating Temperature (ref. to +25°C)	-50		+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



Mechanical Dimensions



Dimensions: inches [mm]

Reflow Profile [JEDEC J-STD-020]

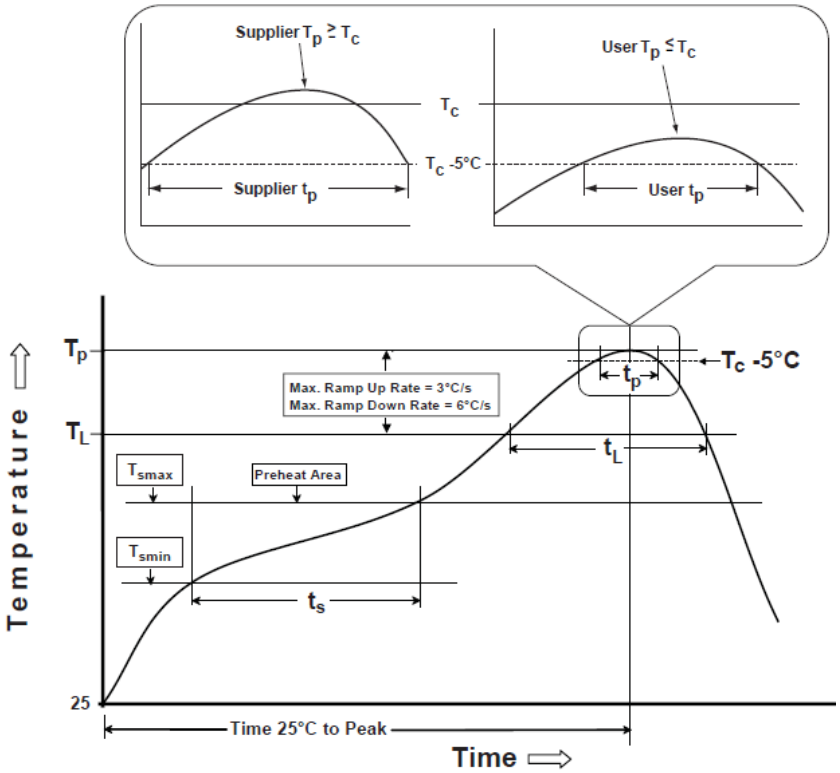


Table 1

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

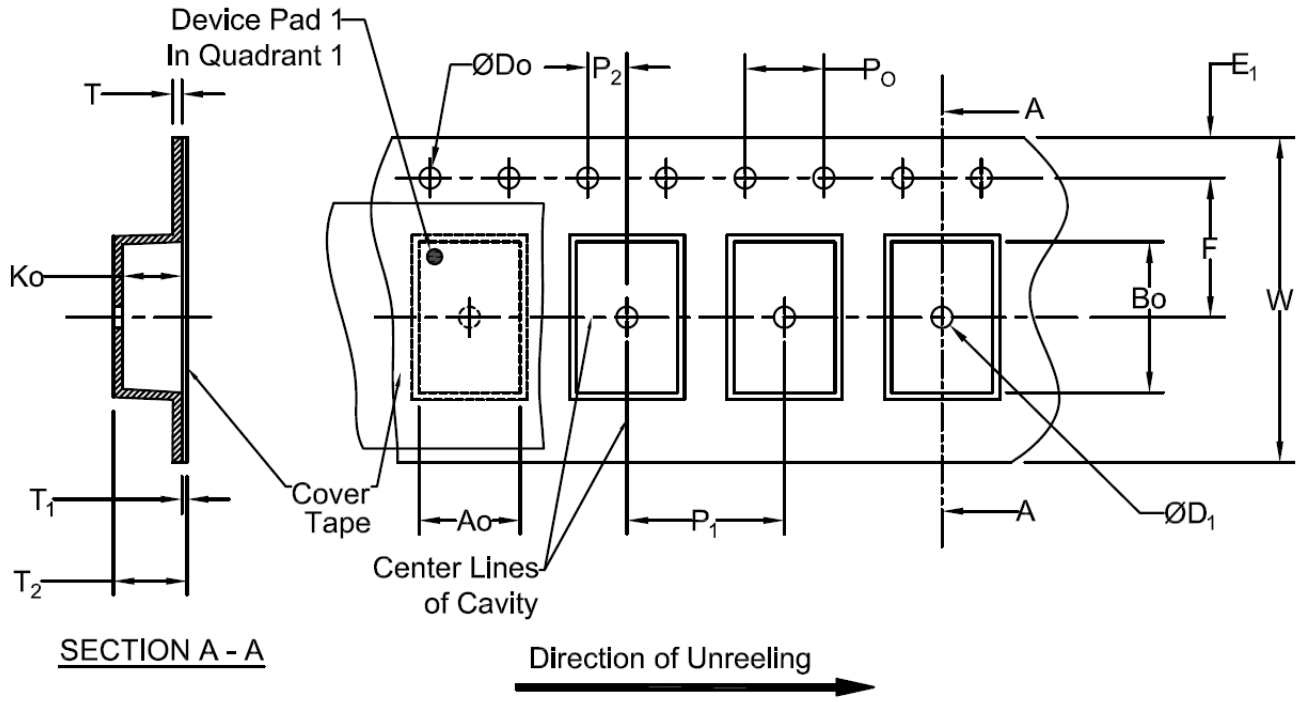
Pb-Free Process Classification Temperatures (T_c)			
Package Thickness	**Volume mm³ <350**	**Volume mm³ 350-2000**	**Volume mm³ >2000**
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

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.

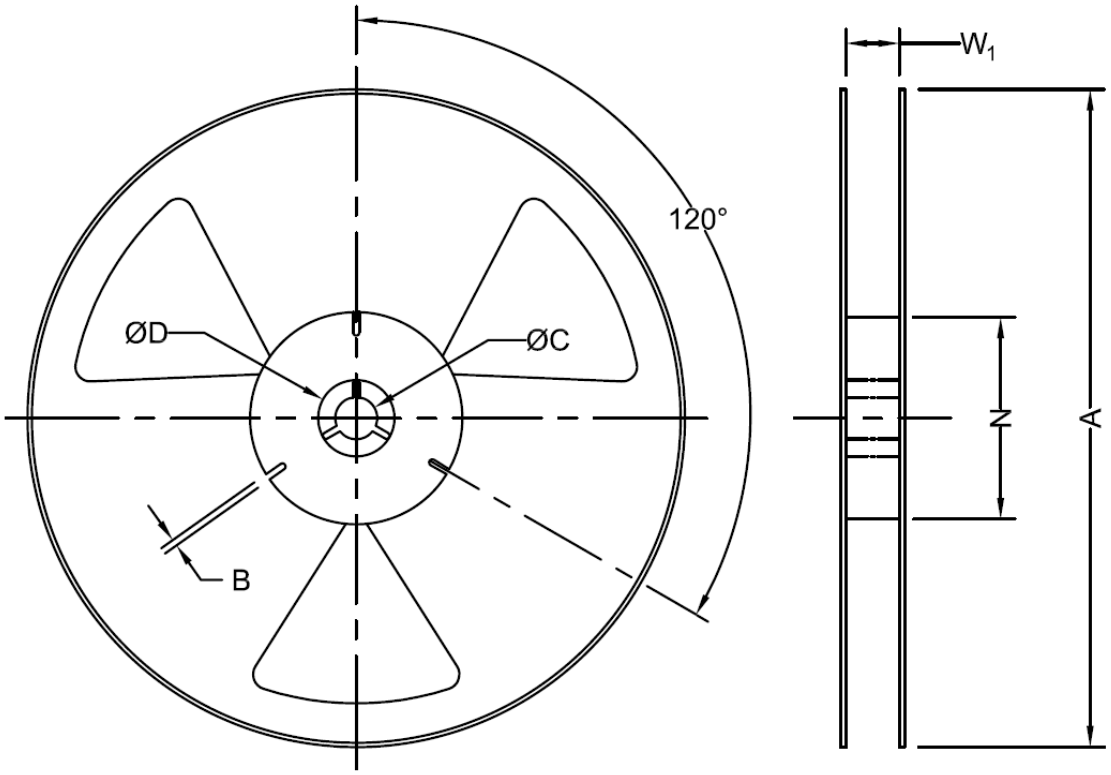
Packaging



Tape Specifications (mm)							
Width	**Ao**	**Bo**	**Do**	**D_1**	**E_1**	**F**	**Ko**
8mm	*	*	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)**
8mm	4.0±0.1	2.0±0.05	4.0±0.1	0.6	0.1	2.5	8.3

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

Packaging continued



Reel Specifications (mm)							
Width	**Qty/Reel**	**A (Nom)**	**B (Min)**	**C (Min)**	**D (Min)**	**N (Min)**	***W_1**
8mm	1000	178	1.5	13.0+0.5/-0.2	20.2	50	8.4+1.5/-0.0

***Note: Measured at Hub**