

Automotive & Industrial Grade Ceramic SMD Crystal

ABM3BAIG

Request Samples



Check Inventory



5.0 x 3.2 x 0.9 mm

RoHS/RoHS II Compliant

MSL Level = N/A



Features

- AEC-Q200 Qualified
- Automotive Grade 1: -40°C to +125°C
- Automotive Grade 0: -40°C to +150°C (Available Upon Request)
- TS16949 Production Line Certified
- PPAP Available Upon Request
- Hermetically Seam-sealed Ceramic Package
- RoHS/RoHS II Compliant and Pb free

Key Electrical Specifications

Applications

- Infotainment Systems
- Keyless Entry & Startup
- GPS & Navigation
- Comfort control
- ADAS (Advanced Driver Assistance Systems)
- Vehicle to Vehicle Communication
- LiDAR (Light Detection and Ranging)
- In-vehicle Networking
- Powertrain & Drive Control

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency Range	8.000		54.000	MHz	
Operation Mode	Fundamental				
Operating Temperature [Note 1]	-40		+125	°C	Option “blank”; See options
	-40		+150		Option “V”; See options
Storage Temperature [Note 1]	-40		+125	°C	Options “blank, J, D, N”
	-40		+150		Option “V”
Frequency Tolerance @+25°C	-50		+50	ppm	Option “blank”; See options
Frequency Stability over the Operating Temperature (ref. to +25°C)	-100		+100	ppm	Option “blank”; See options
	-150		+150		Option “R”; See options
Equivalent series resistance (R1)			150	Ω	8.000 – 9.999MHz
			80		10.000 – 11.999MHz
			70		12.000 – 15.999MHz
			50		16.000 – 19.999MHz
			40		20.000 – 23.999MHz
			30		24.000 – 54.000MHz
Shunt capacitance (C0)			3.0	pF	
Load capacitance (CL)		18		pF	Option “blank”; See options
Drive Level		10	100	μW	
Aging	-2		+2	ppm	@25°C±3°C First year
Insulation Resistance	500			MΩ	@ 100Vdc ± 15V

Note 1: Operating temperature range option -40°C ~ +150°C only available in select frequencies and electrical performance options. Please contact Abracon for availability.



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Options and Part Identification (left blank if standard)

ABM3BAIG - MHz - - - - - -

Frequency in MHz
 Please specify the frequency in MHz.
 e.g. 14.31818MHz

Load Capacitance (pF)
 Blank: 18pF
 If not standard, please specify CL in pF or S for series

Custom ESR if other than standard
 R
: Specify a value in Ω
 (e.g.: R80)

Operating Temp.
 Blank: -40°C ~ +125°C
 N: -30°C ~ +85°C
 D: -40°C ~ +85°C
 J: -40°C ~ +105°C
 V: -40°C ~ +150°C (*)
 (*) Contact Abracon for Availability

Freq. Tolerance
 Blank: ± 50 ppm
 4: ± 30 ppm
 3: ± 25 ppm
 2: ± 20 ppm
 7: ± 15 ppm
 1: ± 10 ppm

Freq. Stability
 Blank: ± 100 ppm
 R: ± 150 ppm
 Z: ± 50 ppm
 P: ± 45 ppm (**)
 F: ± 40 ppm (**)
 H: ± 35 ppm (**)
 Y: ± 30 ppm (**)
 W: ± 25 ppm (**)
 X: ± 20 ppm (**)
 G: ± 15 ppm (**)
 (**) Contact Abracon for Availability

Packaging
 Blank: Bulk
 T: 1k pcs / reel



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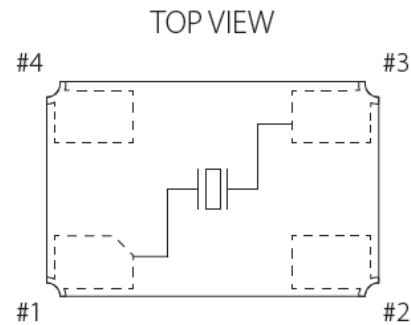
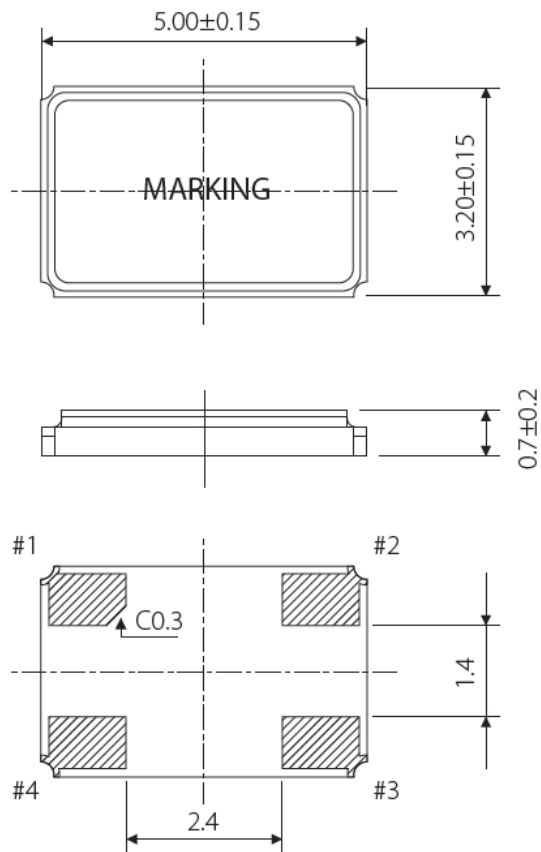
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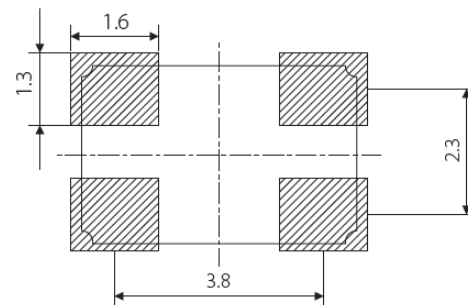
Mechanical Dimensions



- #1,#3 : Crystal terminal
- #2,#4 : Connected to cover
(Please connect it with GND.)

Pin #1: Crystal Pin #2: GND (*)
Pin #3: Crystal Pin #4: GND (*)
(*) Electrically connected to lid

Recommended Land Pattern



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

Dimensions: mm

Sealing Method = Seam Sealing

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Reflow Profile [JEDEC J-STD-020]

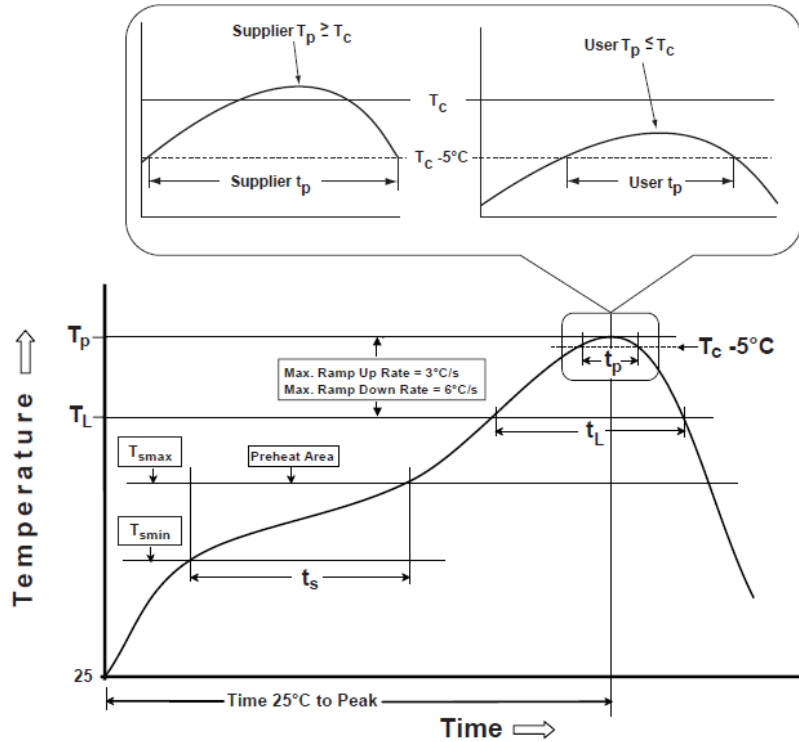


Table 1

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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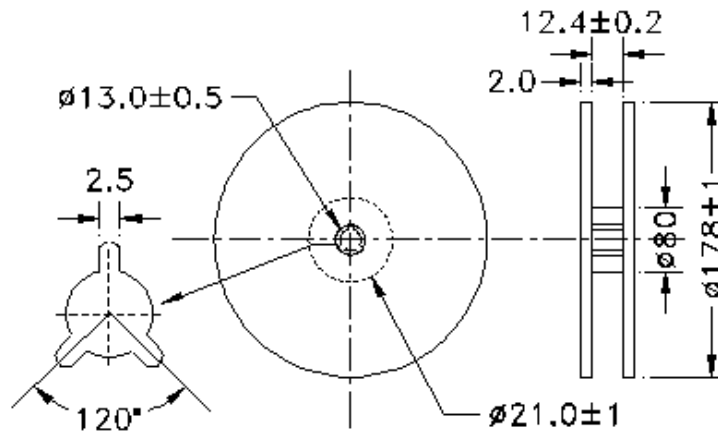
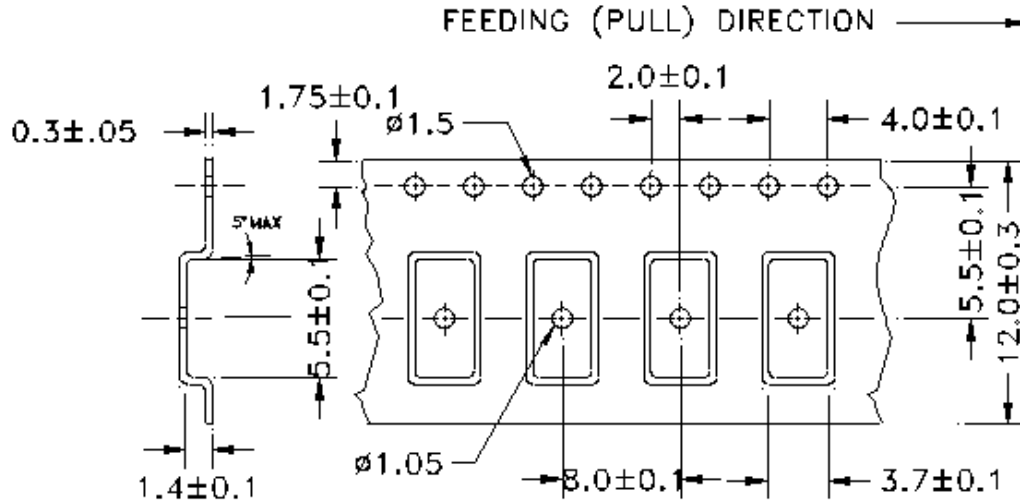


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Packaging:

T: 1000pcs/reel



Dimensions: mm

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