

Automotive & Industrial Grade Ceramic SMD Crystal

ABM8AAIG Series

Request Samples



Check Inventory



3.2 x 2.5 x 1.0 mm
RoHS/RoHS II Compliant
Pb in ceramic, exemption (7c-I)
MSL Level = N/A

Features

- AEC-Q200 Qualified
- Automotive Grade 1: -40°C to +125°C
- Automotive Grade 0: -40°C to +150°C
- TS16949 Production Line Certified
- PPAP Available Upon Request
- Hermetically seam-sealed Ceramic Package
- RoHS/RoHS II Exemption

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
- Power Control & Conversion
- Industrial Control & Automation

Key Electrical Specifications

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	-40		+125	°C	Options “blank, J, D”
	-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)			500	Ω	8.000 – 9.899MHz
			120		9.900 – 11.999MHz
			50		12.000 – 54.000MHz
Shunt capacitance (C0)			2.0	pF	
Load capacitance (CL)	8			pF	Option “blank”; See options
Drive Level		10	200	μW	
Aging	-3		+3	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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Phone: 512-371-6159 | Fax: 512-351-8858
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ABRACON IS
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Options and Part Identification (left blank if standard)

ABM8AAIG - MHz - - - - -

Frequency in MHz

Please specify the frequency in MHz.
e.g. 16.384MHz

Load Capacitance (pF)

Blank: 8pF

If not standard, please specify CL
in pF or S for series

Packaging

Blank: Bulk

T: 1k pcs / reel

T3: 3k pcs / reel

Freq. Stability

Blank: ± 100 ppm

R: ± 150 ppm

Z: ± 50 ppm

Y: ± 30 ppm

Contact Abracon
for Availability

Custom ESR if other than standard

Blank = Standard
Custom = Rxx or Rxxx
Specify an xx or xxx
value in Ω
(e.g.: R40 or R100)

Operating Temp.

Blank: $-40^{\circ}\text{C} \sim +125^{\circ}\text{C}$ (**)

D: $-40^{\circ}\text{C} \sim +85^{\circ}\text{C}$

J: $-40^{\circ}\text{C} \sim +105^{\circ}\text{C}$ (***)

V: $-40^{\circ}\text{C} \sim +150^{\circ}\text{C}$ (*)

(*) Only offered @ Freq. Stability
Option R

(**) Only offered @ Freq. Stability
Option Blank and R.

(***) Only offered @ Freq.
Stability Option Z, Blank, and R.

(*) Contact Abracon
for Availability

Freq. Tolerance

Blank: ± 50 ppm

1: ± 30 ppm

2: ± 15 ppm



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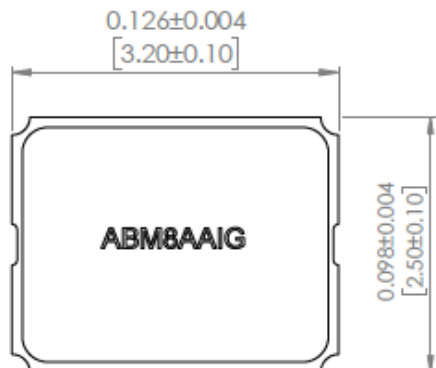
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RoHS/RoHS II Compliant

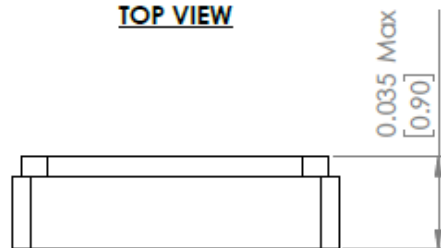
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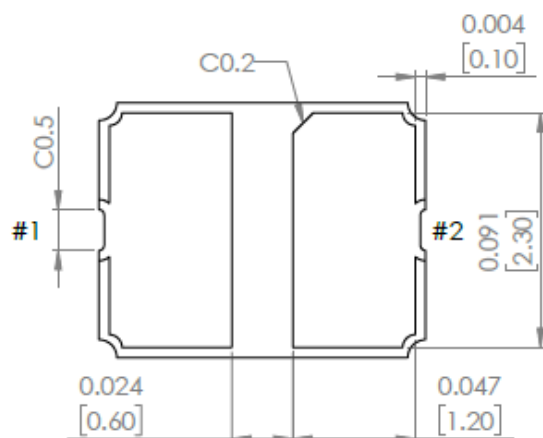
Mechanical Dimensions



TOP VIEW

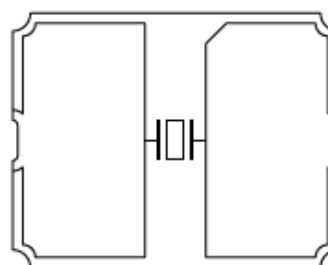


FRONT VIEW



BOTTOM VIEW

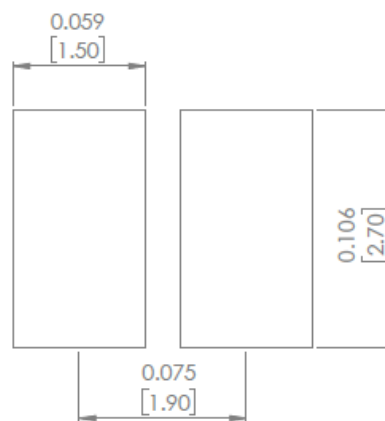
CONNECTION



Pin#1: Crystal

Pin#2: Crystal

Recommended Land Pattern



Dimensions: mm

Sealing Method = Seam Sealed



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Reflow Profile [JEDEC J-STD-020]

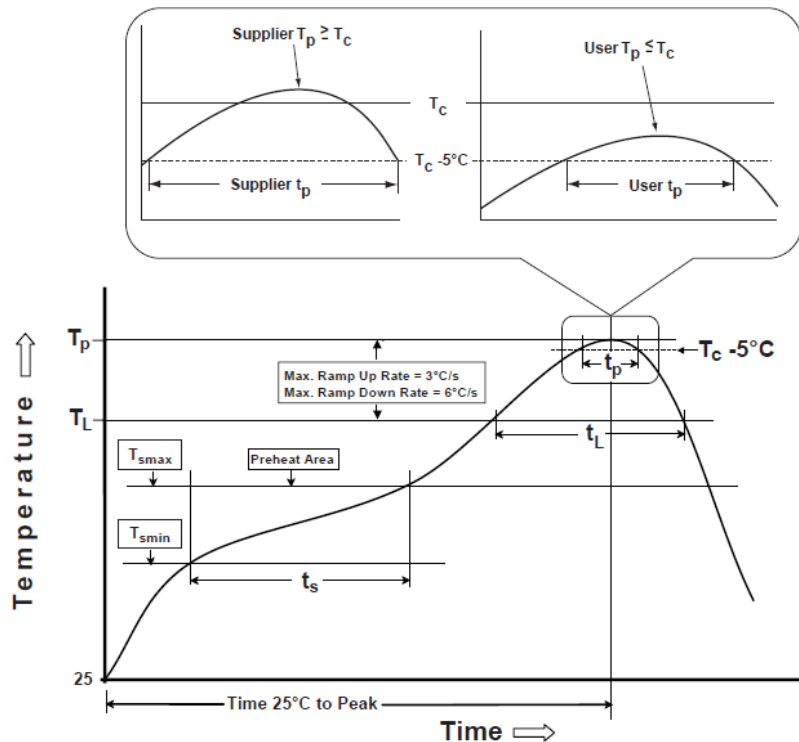


Table 1

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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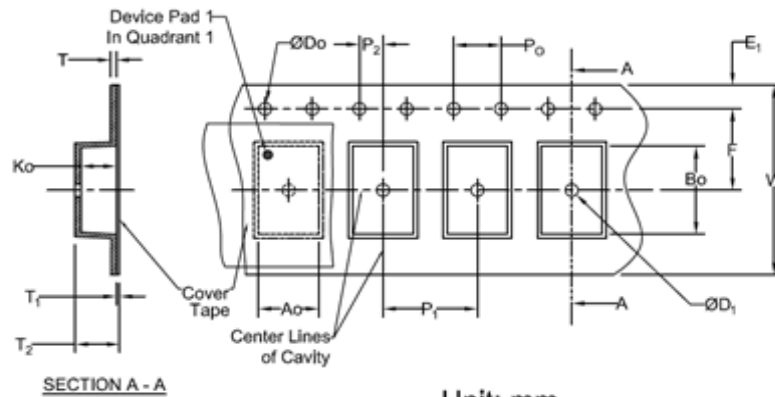
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Packaging

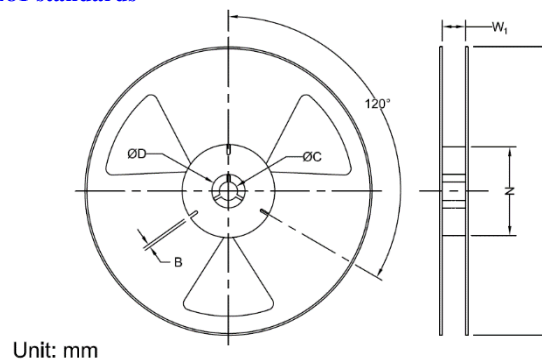
T: 1,000pcs/reel

T3: 3,000pcs/reel



Tape Specifications (mm)						
A_o	B_o	D_o	D_1 (Min)	E_1	F	K_o
*	*	1.55 ± 0.05	1.0	1.75 ± 0.1	3.5 ± 0.01	*
P_1	P_2	P_o	T (Max)	T_1 (Max)	T_2 (Max)	W
4.0 ± 0.1	2.0 ± 0.05	4.0 ± 0.1	0.6	0.1	2.5	8 ± 0.3

* Compliant to EIA-481 standards



Reel Specifications (mm)					
A	B (Min)	C	D (Min)	N	W1
178	1.5	13.2 ± 0.01	20.2	60.2 ± 0.01	8 ± 0.01

Dimensions: mm

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