Engineering/Process Change Notice

ECN/PCN No.: 3463

For Manufacturer

Product Description: Ceramic SMD Microprocessor Crystal		**Abracon Part Number / Part Series:** **ABM2**	☒Series ☐Part Number
Affected Revision: P	**New Revision:** Q	**Application**	☐Safety ☒Non-Safety

Prior to Change:

1. ROHS Statement
   a. RoHS/Ro HS II compliant. Pb in Glass, exemption 7C-I per RoHS II Directive 2011/65/EU Annex.
2. Electrical Performance Options
   a. Operating Temperature Range
      i. E: 0°C ~ +70°C
      ii. B: -20°C ~ +70°C
      iii. C: -30°C ~ +70°C
      iv. N: -30°C ~ +85°C
      v. D: -40°C ~ +85°C
      vi. J: -40°C ~ +105°C
      vii. K: -40°C ~ +125°C
3. Mechanical Dimensions (millimeters)
   a. Side view; height dimension = 1.4 ± 0.5 mm MAX

After Change:

1. ROHS Statement
   a. RoHS/Ro HS II compliant. Pb in glass (exempt 7(c) per 2015/863/EU Annex)
2. Electrical Performance Options
   a. Operating Temperature Range
      i. E: 0°C ~ +70°C
      ii. B: -20°C ~ +70°C
      iii. C: -30°C ~ +70°C
      iv. N: -30°C ~ +85°C
      v. D: -40°C ~ +85°C
      ~~vi. J: -40°C ~ +105°C~~ (Option "J" removed from offering)
      ~~vii. K: -40°C ~ +125°C~~ (Option "K" removed from offering)
3. Mechanical Dimensions (millimeters)
   a. Side view; height dimension = 1.6 ± 0.2 mm MAX

Cause/Reason for Change:

1. Standard review and upgrade of product series.
2. Due to raw material availability, part size/dimension adjustments were implemented.
3. Wider operating ranges for this crystal package removed from offering due to lack of demand.

Change Plan	**Effective Date:** 10/15/2019	**Additional Remarks:** N/A

Change Declaration:
These changes do not negatively impact electrical performance of this series.

Issued Date: 10/15/2019	**Issued By:** Brooke Cushman	**Issued Department:** Engineering
Approval: Syed Raza Engineering VP	**Approval:** Reuben Quintanilla Quality Manager	**Approval:** Ying Huang Purchasing Director

For Abracon EOL only

Last Time Buy (if applicable): N/A	**Alternate Part Number / Part Series:** N/A	
Additional Approval: N/A	**Additional Approval:** N/A	**Additional Approval:** N/A

Customer Approval (If Applicable)		
Qualification Status: ☐ Approved ☐ Not accepted Note: It is considered approved if there is no feedback from customer 1 month after ECN/PCN is released		
Customer Part Number:	**Customer Project:**	
Company Name:	**Company Representative:**	**Representative Signature:**
Customer Remarks:		

CERAMIC SMD MICROPROCESSOR CRYSTAL

ABM2

Typical 8.0 x 4.5 x 1.6mm

RoHS/RoHS II Compliant

RoHS/RoHS II compliant. Pb in glass (exempt 7(c) per 2015/863/EU Annex)

Moisture Sensitivity Level (MSL) –This product is Hermetically Sealed and not Moisture Sensitive -MSL = N/A: Not Applicable

FEATURES:

- Low in height; suitable for thin equipment
- Glass sealed package assures high reliability and high temperature operation
- Tight tolerance and stability available
- Suitable for RoHS compliant reflow
- Low cost glass sealed crystal solution

APPLICATIONS:

- High density applications
- Modems, communication and test equipment
- PMCIA, Wireless applications
- Microprocessor crystals

STANDARD SPECIFICATIONS:

Parameters	Minimum	Typical	Maximum	Units	Notes
FrequencyRange	8.000	-----	100.000	MHz	Fundamental
Operation mode	8.000	-----	40.000		Fundamental AT-cut (Standard)
	40.001	-----	100.000		3rd OT AT -cut (Standard)
	40.001	-----	60.000		Fundamental AT-cut (See options)
Operating Temperature	-10	-----	+60	ºC	See options
Storage Temperature	-40	-----	+85	ºC	
Frequency Tolerance@ +25°C	-50	-----	+50	ppm	See options
FrequencyStability over the Operating Temperature (ref. to +25°C)	-50	-----	+50	ppm	See options
Equivalent series resistance	-----	-----	100	Ω	8.000 – 10.000MHz (Fundamental)
	-----	-----	60		10.001 – 15.999MHz (Fundamental)
	-----	-----	50		16.000 – 60.000MHz (Fundamental)
	-----	-----	70		40.000 – 100.000MHz (3rd OT)
Shunt capacitance (C0)	-----	-----	7	pF	-----
Load capacitance (CL)	-----	18	-----	pF	See options
Drive Level	-----	10	100	µW	
Aging @ 25°C±3°C	-----	-----	±5	ppm	First year
Insulation Resistance	500	-----	-----	MΩ	@ 100Vdc

ABRACON LLC

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REVISED: 02-13-20

ABRACON IS ISO9001-2015 CERTIFIED

CERAMIC SMD MICROPROCESSOR CRYSTAL

ABM2

Typical 8.0 x 4.5 x 1.6mm

RoHS/RoHS II Compliant

RoHS/RoHS II compliant. Pb in glass (exempt 7(c) per 2015/863/EU Annex)

OPTIONS AND PART IDENTIFICATION: (Left blank if standard)

ABM 2-[ ]MHz -[ ]-[ ]-[ ][ ][ ]-[ ]-[ ]

Frequency in MHz
e.g. 8.000MHz
14.31818MHz
26.000MHz

Load Capacitance (pF)
Please specify CL in pF
(8 to 33pF) or S for series
Please contact ABRACON for other values

Custom ESR if other than standard
R
: Specify a value in Ω
(e.g.: R4 0)

Operating Temp. (See Table 1 for details)

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

Freq. Tolerance

1: ± 10 ppm
7: ± 15 ppm
2: ± 20 ppm
3: ± 25 ppm
4: ± 30 ppm

Freq. Stability (See Table 1 for details)

U: ±10 ppm
G: ±15 ppm
X: ±20 ppm
W: ±25 ppm
Y: ±30 ppm
H: ±35 ppm
A: ±80 ppm
Q: ±100 ppm
V: ±120 ppm
P: ±150 ppm

Mode
F: Fund AT for >40MHz

Packaging

Blank: Bulk
T: 1k reel
T2: 250pcs/reel

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

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: -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					√*	√*

Operating Temp.	Freq. Stability				
	Std:±50ppm	A:±80ppm	Q:±100ppm	V:±120ppm	P:±150ppm
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	√*	√	√	√	√

Note: *: Availability depends on frequency.

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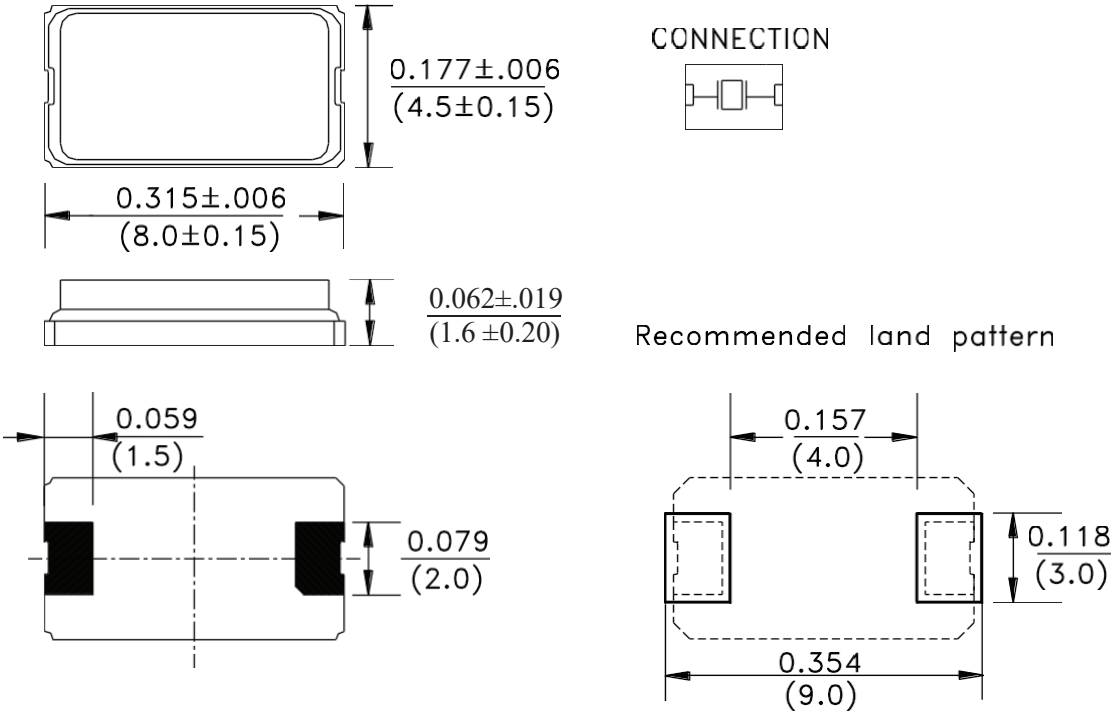
RoHS/RoHS II Compliant

RoHS/RoHS II compliant. Pb in glass (exempt 7(c) per 2015/863/EU Annex)

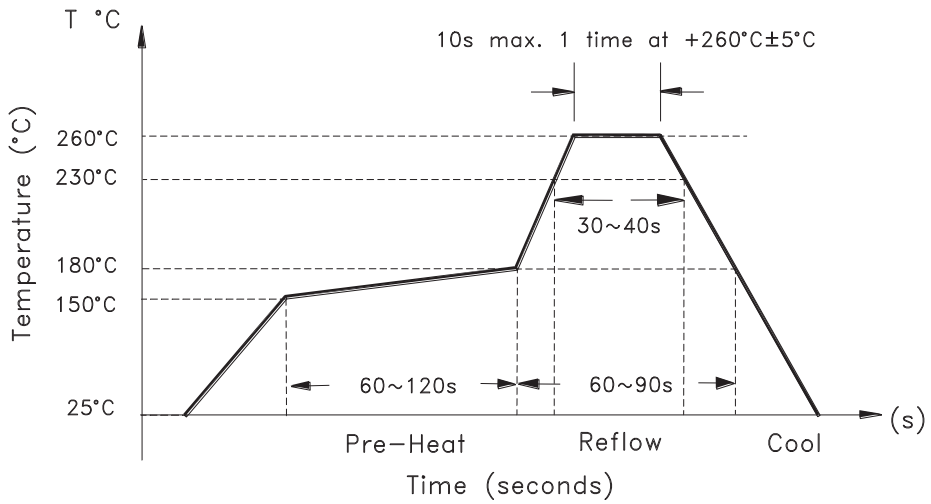
OUTLINE DIMENSION:



Note: Due to the availability of raw materials, the chamfer may not appear on the both pads. Be advised that this does not affect the electrical characteristics of the crystal in any way.

Dimensions: inches (mm)

REFLOW PROFILE:



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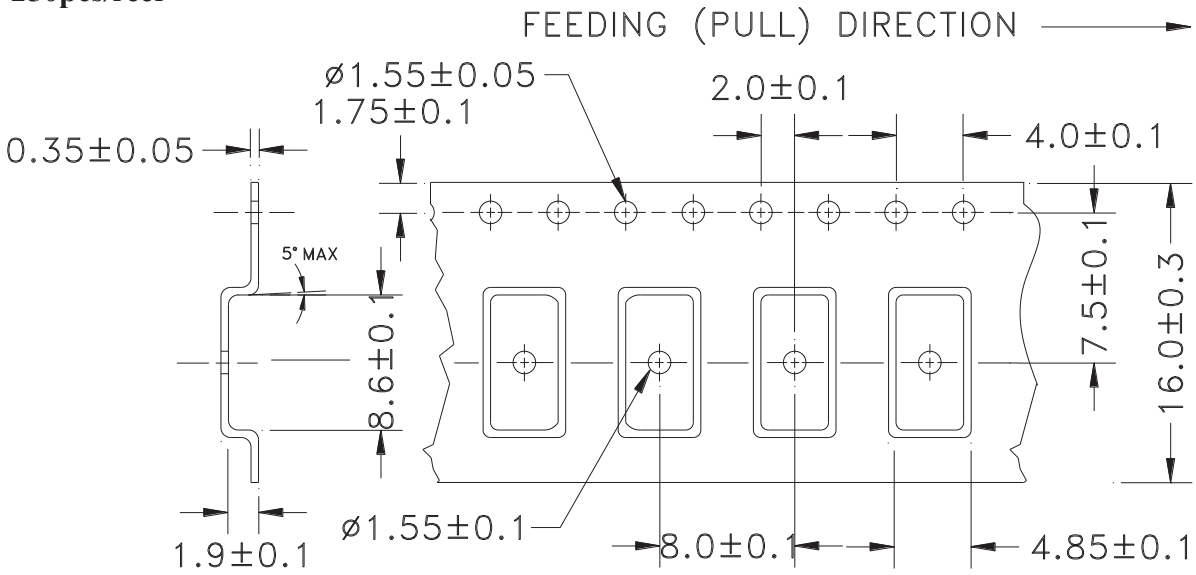
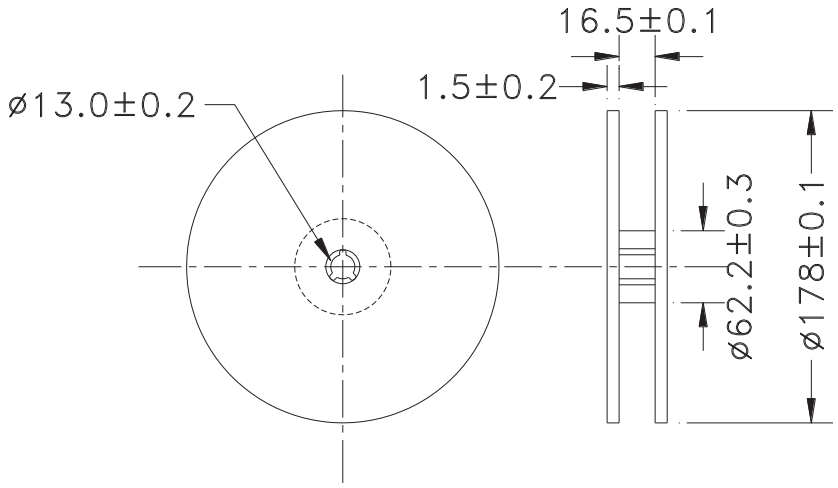
TAPE & REEL:

T: 1000pcs/reel
T2: 250pcs/reel





Dimensions: mm

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