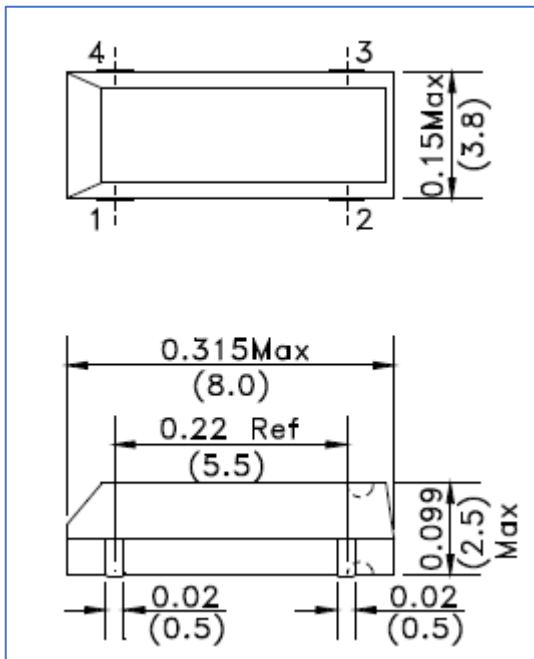


ECN/PCN No.: 3455

For Manufacturer		
Product Description: Low Frequency SMD Crystal		Abracon Part Number / Part Series: ABS25
Affected Revision: U	New Revision: V	Application
		<input checked="" type="checkbox"/> Series
		<input type="checkbox"/> Part Number
		<input type="checkbox"/> Safety
		<input checked="" type="checkbox"/> Non-Safety

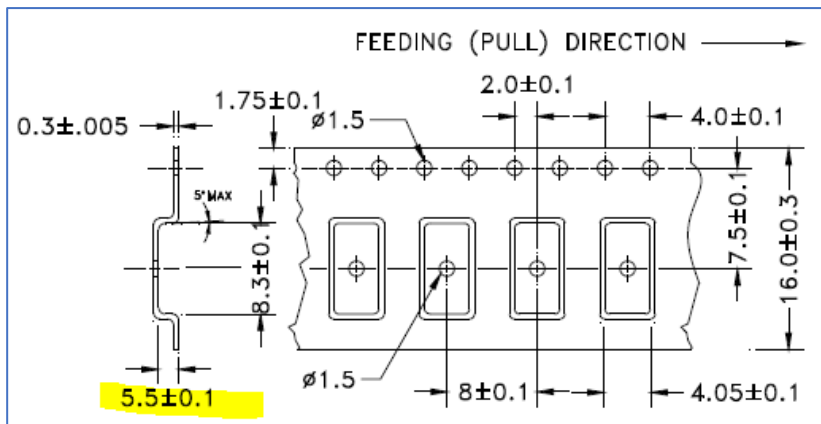
Prior to Change:

1. ROHS Statement
 - a. Pb in High Temperature Solder (exempt per RoHS 2002/95/EC Annex (7))
2. Electrical performance
 - a. Frequency Coefficient (β):
 - i. Min = -0.040 ppm/T²
 - ii. Typ = -0.034 ppm/T²
 - iii. Max = -0.028 ppm/T²
3. Mechanical Dimensions (millimeters)
 - a. Top view; width dimension = 3.8 mm MAX
 - b. Top view; length dimension = 8.0 MAX
 - c. Side view; height dimension = 2.5 MAX



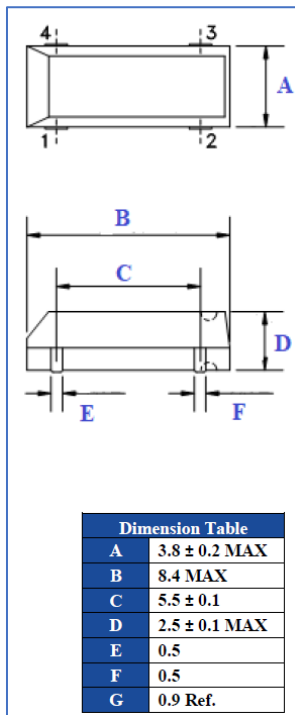
d.

4. Tape Packaging Dimension (millimeters)
 - a. Depth of part-insert dimension = 5.5 ± 0.1

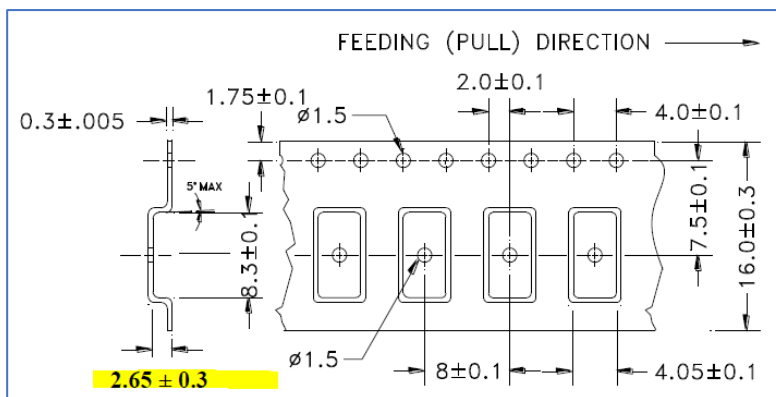


After Change:

1. ROHS Statement
 - a. Pb in high temperature solder (exempt 7(a) per 2015/863/EU Annex)
2. Electrical performance
 - a. Frequency Coefficient (β):
 - i. Typ = -0.035 ± 0.01 ppm/ $^{\circ}\text{C}^2$
3. Mechanical Dimensions (millimeters)
 - a. Top view; width dimension = 3.8 ± 0.2 MAX (increase)
 - b. Top view; length dimension = 8.4 MAX (increase)
 - c. Side view; height dimension = 2.5 ± 0.1 MAX (increase)



4. Reel Packaging Dimension (millimeters)
 - a. Depth of part-insert dimension = 2.65 ± 0.3 (original dimension on the datasheet was a typing error)



Cause/Reason for Change:

1. Standard review and upgrade of product series.
2. ROHS compliance statement updated.
3. Due to raw material availability, part size/dimension adjustments were implemented.
4. Typing error fixed for one tape-packaging dimension.

Change Plan	Effective Date: 9/23/2019	Additional Remarks: N/A
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Change Declaration:

These changes do not negatively impact electrical performance of this series. The mechanical dimension changes of the part slightly increased.

Engineering/Process Change Notice

Issued Date: 9/23/2019	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: <input type="checkbox"/> Approved <input type="checkbox"/> 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:		

32.768 kHz LOW FREQUENCY SMD CRYSTAL



8.0 x 3.8 x 2.5 mm

ABS25

Pb in High Temperature Solder
(exempt 7(a) per 2015/863/EU Annex)

**RoHS
Compliant**

FEATURES:

- Plastic molded SMD
- 2.5mm height ideal for high density circuit boards
- Suitable for RoHS compliant reflow
- Extended temperature -40°C to +85°C for industrial applications

APPLICATIONS:

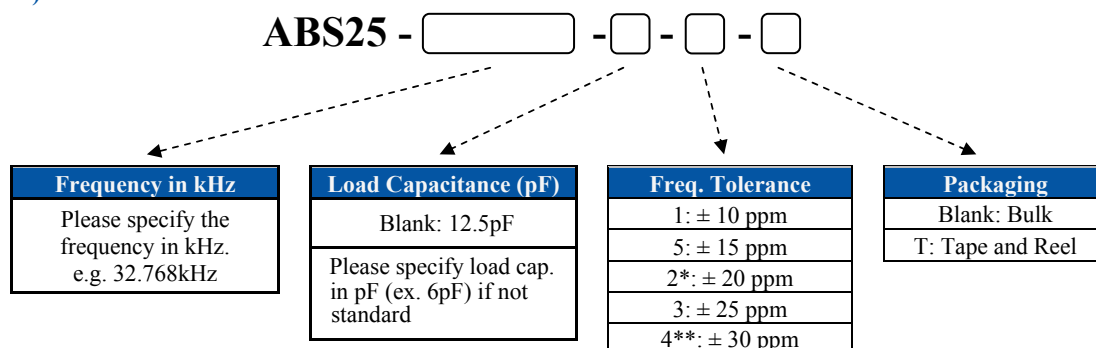
- Wide range in communication & measuring equipment
- Commercial & Industrial applications
- Computer clock

STANDARD SPECIFICATIONS:

Parameters	Minimum	Typical	Maximum	Units	Notes
Nominal Frequency	----	32.768	----	kHz	
Frequency Range	30	----	100	kHz	Other frequencies
Operating Temperature	-40	----	+85	°C	
Turnover Temperature	+20	+25	+30	°C	
Storage Temperature	-55	----	+125	°C	
Frequency Tolerance @+25°C	-20	----	+20	ppm	32.768kHz
	-30	----	+30		Other frequencies
Capacitance Ratio (C0/C1)	----	450	----		32.768kHz
	----	425 to 800	----		Other frequencies
Frequency Coefficient (B)		-0.035±0.01		ppm/°C ²	
Equivalent series resistance (R1)	----	----	50	kΩ	
Shunt capacitance (C0)	----	1.35	----	pF	32.768kHz
		0.8 to 1.7			Other frequencies
Load capacitance (CL)		12.5		pF	See options
Drive Level	----	----	1	μW	
Aging @ 25°C±3°C (First year)	-3	----	+3	ppm	32.768kHz
	-5	----	+5		Other frequencies
Insulation Resistance	500	----	----	MΩ	@ 100Vdc ± 15V

OPTIONS AND PART IDENTIFICATION:

(Left blank if standard)



*STD for 32.768kHz. Please leave this blank if F is 32.768kHz.

**STD for other frequencies. Please leave this blank if F is not 32.768kHz.

32.768 kHz LOW FREQUENCY SMD CRYSTAL

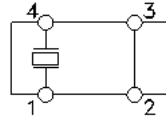
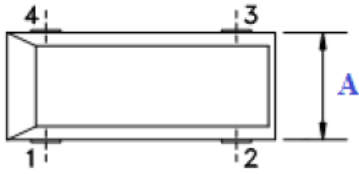


ABS25

Pb in High Temperature Solder
(exempt 7(a) per 2015/863/EU Annex)

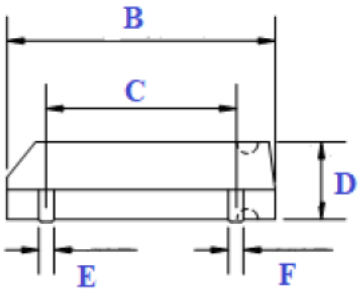
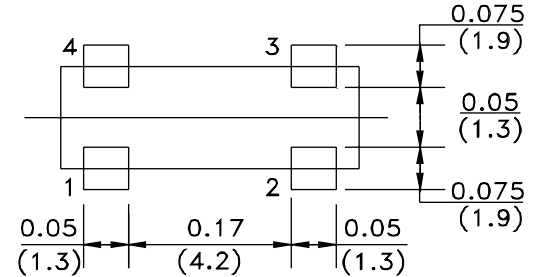
RoHS
Compliant

OUTLINE DRAWING:



Electrode Arrangement
Pin 2 and 3 are not connected to the GND (Floating)

Recommended Land Pattern



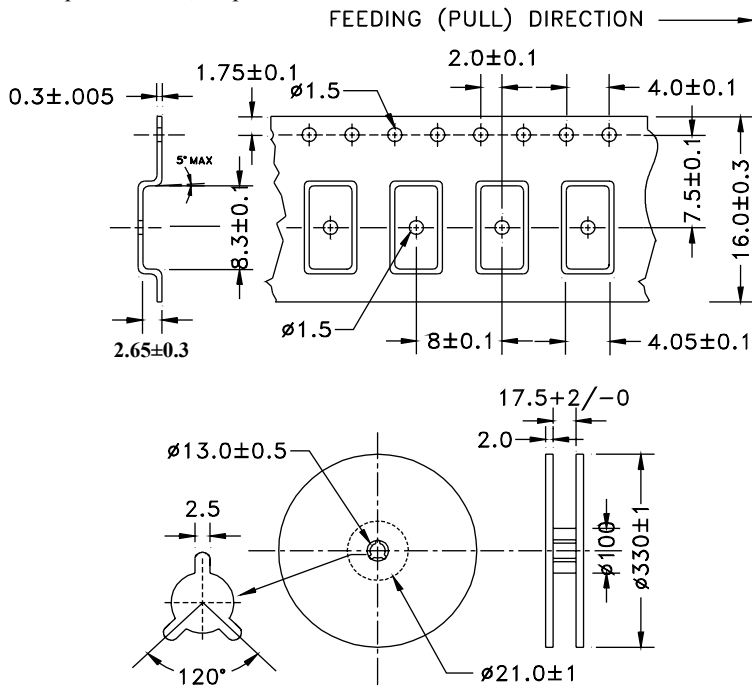
Dimension Table	
A	3.8 ± 0.2 MAX
B	8.4 MAX
C	5.5 ± 0.1
D	2.5 ± 0.1 MAX
E	0.5
F	0.5
G	0.9 Ref.



Dimensions: (inches) mm

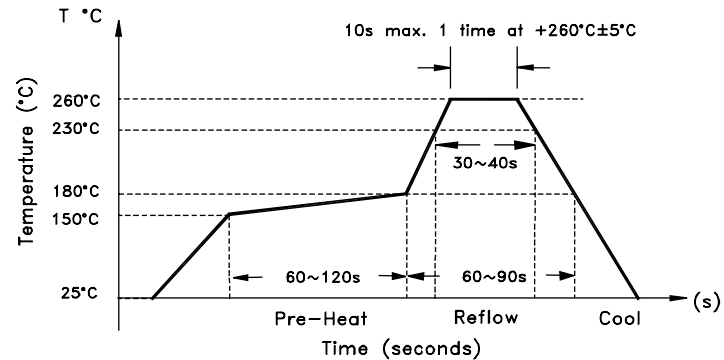
TAPE & REEL:

T = Tape and reel 3,000pcs/reel



Dimensions: mm

REFLOW PROFILE



ATTENTION: Abracon LLC's products are COTS – Commercial-Off-The-Shelf products; suitable for Commercial, Industrial and, where designated, Automotive Applications. Abracon's products are not specifically designed for Military, Aviation, Aerospace, Life-dependent Medical applications or any application requiring high reliability where component failure could result in loss of life and/or property. For applications requiring high reliability and/or presenting an extreme operating environment, written consent and authorization from Abracon LLC is required. Please contact Abracon LLC for more information.

AFFECTED MPN

ABS25-32.768KHZ-T
ABS25-32.768KHZ-6-T
ABS25-32.768KHZ-1-T
ABS25-32.768KHZ-TR
ABS25-32.768KHZ-6-1-T
ABS25-32.768KHZ-4-T
ABS25-32.768KHZ-6
ABS25-32.768KHZ
ABS25-32.768KHZ-1
ABS25-32.768KHZ-10
ABS25-32.768KHZ-6-D3-T
ABS25-32.768KHZ-6-4
ABS25-32.768KHZ-6-1-TR
ABS25-32.768KHZ-6DT
ABS25-32.768KHZ-6-2-T
ABS25-32.768KHZ-D-T
ABS25-32.768KHZ-2
ABS25-32.768KHZ-6-TR
ABS25-32.768KHZ-6D
ABS25-32.768KHZ-6-1
ABS25-32.768KHZ-2-TR
ABS25-32.768KHZ-2T
ABS25-32.768KHZ-7TR
ABS25-32.768KHZ-6DT
ABS25-32.768KHZ-7-T
ABS25-32.768KHZ-D-2-T
ABS25-32.768KHZ-1-TR
ABS25-32.768KHZ-5
ABS25-32.768KHZ-9-1
ABS25-32.768KHZ-7-1
ABS25-32.768KHZ-3
ABS25-32.768MHZ-16