

ECN/PCN No.: 3611

For Manufacturer					
Product Description: Automotive&Industrial Grade 32.768kHz SMD Crystal	Abracon Part Number / Part Series: ABS07AIG			<input checked="" type="checkbox"/> Series <input type="checkbox"/> Part Number	
Affected Revision: C	New Revision: D		Application: <input type="checkbox"/> Safety <input checked="" type="checkbox"/> Non-Safety		
Prior to Change:					
<u>Electrical Specifications:</u>					
1. Parameter "Shift through standard RoHS reflow, (2) reflow cycles maximum":					
Shift through standard RoHS reflow, (2) reflow cycles maximum	-2		+2	ppm	260°C peak maximum reflow temperature, relative to stand-alone set-tolerance frequency
2. Parameter "Shunt capacitance (C0)":					
Shunt capacitance (C0)		1.1		pF	
<u>Reliability Test Conditions:</u>					
1. Test item & condition "Mechanical Shock":					
Mechanical Shock	3000 Gs, Halfsine, 0.3ms in each direction (X, Y, Z)				
2. Test item & condition "Sinusoidal Vibration":					
Sinusoidal Vibration	20Gs Peak, 10-55Hz & 55-2000Hz, 1.5mm Amplitude, 4 hours each axis (X, Y, Z)				
After Change:					
<u>Electrical Specifications:</u>					
1. Parameter "Shift through standard RoHS reflow, (2) reflow cycles maximum": PARAMETER REMOVED					
2. Parameter "Shunt capacitance (C0)": PARAMETER REVISED					
Shunt capacitance (C0)		<1.4		pF	
<u>Reliability Test Conditions:</u>					
1. Test item & condition "Mechanical Shock": PARAMETER REMOVED					
2. Test item & condition "Sinusoidal Vibration": PARAMETER REMOVED					
Cause/Reason for Change:					
Abracon introduced additional manufacturing sources to ensure product availability and to be in a better position to meet long term customer demand. Updated electrical specifications to reflect the product produced by all manufacturing sources.					
Change Plan					
Effective Date: 12/04/2020			Additional Remarks: N/A		
Change Declaration: This statement addresses both the electrical changes and the addition of additional manufacturing lines.					
Issued Date: 12/04/2020		Issued By: Brooke Cushman – Product Engineer		Issued Department: Engineering	
Approval: Thomas Culhane Engineering Director		Approval: Reuben Quintanilla Quality Director		Approval: Ying Huang Purchasing Director	

For Abracon EOL only		
Last Time Buy (if applicable): N/A	Alternate Part Number / Part Series:	
Additional Approval:	Additional Approval:	Additional Approval:
Customer Approval (If Applicable)		
Qualification Status: <div style="text-align: center;"> <input type="checkbox"/> Approved <input type="checkbox"/> Not accepted </div> <i>Note: It is considered approved if there is no feedback from the customer 1 month after ECN/PCN is released.</i>		
Customer Part Number:	Customer Project:	
Company Name:	Company Representative:	Representative Signature:
Customer Remarks:		

AFFECTED PART NUMBERS:

ABS07AIG-32.768KHZ
 ABS07AIG-32.768KHZ-1
 ABS07AIG-32.768kHz-1-T
 ABS07AIG-32.768KHZ-6
 ABS07AIG-32.768kHz-6-1-T
 ABS07AIG-32.768kHz-6-D-T
 ABS07AIG-32.768kHz-6-T
 ABS07AIG-32.768KHZ-7
 ABS07AIG-32.768KHZ-7-1
 ABS07AIG-32.768kHz-7-1-T
 ABS07AIG-32.768KHZ-7-D
 ABS07AIG-32.768kHz-7-D-T
 ABS07AIG-32.768kHz-7-T
 ABS07AIG-32.768KHZ-9
 ABS07AIG-32.768KHZ-9-1
 ABS07AIG-32.768kHz-9-1-T
 ABS07AIG-32.768KHZ-9-4
 ABS07AIG-32.768KHZ-9-D
 ABS07AIG-32.768kHz-9-D-T
 ABS07AIG-32.768kHz-9-T
 ABS07AIG-32.768kHz-D-T
 ABS07AIG-32.768kHz-T

Automotive & Industrial Grade 32.768kHz Ceramic Base SMD Crystal

ABS07AIG



ABS07AIG



3.2 x 1.5 x 0.9 mm
RoHS/RoHS II Compliant
MSL = N/A: Not Applicable

Features

- AEC-Q200 Qualified
- Automotive Grade 1: -40°C to +125°C
- IATF 16949 Production Line Certified
- PPAP Available Upon Request
- Hermetically Seam-sealed Ceramic Package
- RoHS/RoHS II Compliant and Pb free

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

Electrical Specifications

Parameters	Min.	Typ.	Max.	Units	Notes
Frequency	32.768			kHz	
Operation Mode	Flexural Mode (Tuning Fork)				
Operating Temperature	-40		+125	°C	Option "blank"; See options
Storage Temperature	-55		+125	°C	
Frequency Tolerance @ +25°C	-10		+10	ppm	Option "1"; See options
	-20		+20		Option "blank"; See options
Temperature Coefficient	-0.040	-0.036		ppm/T ²	
Turn-over Temperature	+20	+25	+30	°C	
Frequency stability over operating temperature, relative to in-circuit measured frequency post-reflow	-160		-100	ppm	Over -40°C to +85°C
	-250		-100		Over -40°C to +105°C
	-450		-100		Over -40°C to +125°C
Equivalent series resistance (R1)			45	kΩ	@ +25±3°C
			50		Over -40°C to +85°C
			60		Over -40°C to +105°C
			70		Over -40°C to +125°C
Shunt capacitance (C0)		<1.4		pF	
Motional capacitance (C1)		4.7		fF	
Load capacitance (CL)		12.5		pF	Option "blank"; See options
Drive Level		0.1	0.5	μW	
Q value	10000	30000			
Aging	-3		+3	ppm	@25°C± 3°C First year
Insulation Resistance	500			MΩ	@100 Vdc

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Options and Part Identification (left blank if standard)

ABS07AIG-32.768 kHz - ○ - ○ - ○ - ○

Load Capacitance
Blank: 12.5pF
9: 9pF
7: 7pF
6: 6pF
5: 5pF

Operating Temp.Range
Blank: -40 ~ +125°C
D: -40 ~ +85°C
J: -40°C to +105°C

Freq. Tolerance
Blank: ±20ppm
1: ±10ppm
4: ±30ppm

Packaging
Blank: Bulk
T: 3k pcs / reel

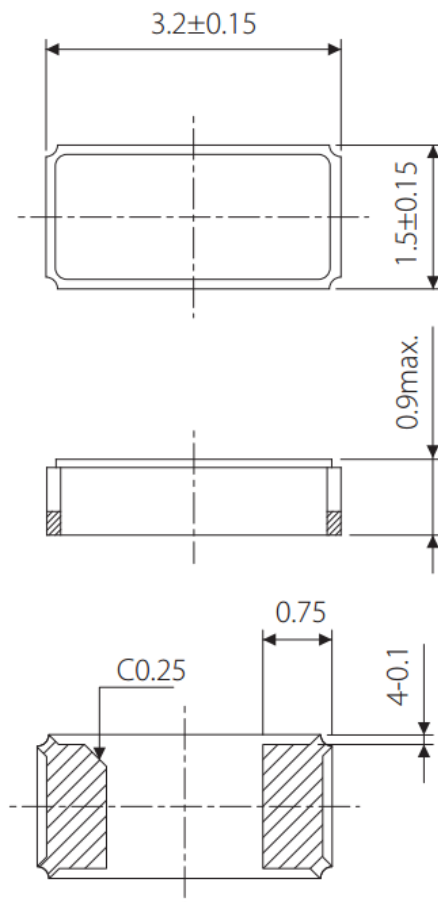


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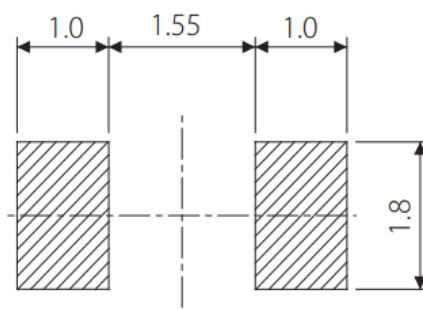


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Mechanical Dimensions



Recommended Land Pattern



Dimensions: mm

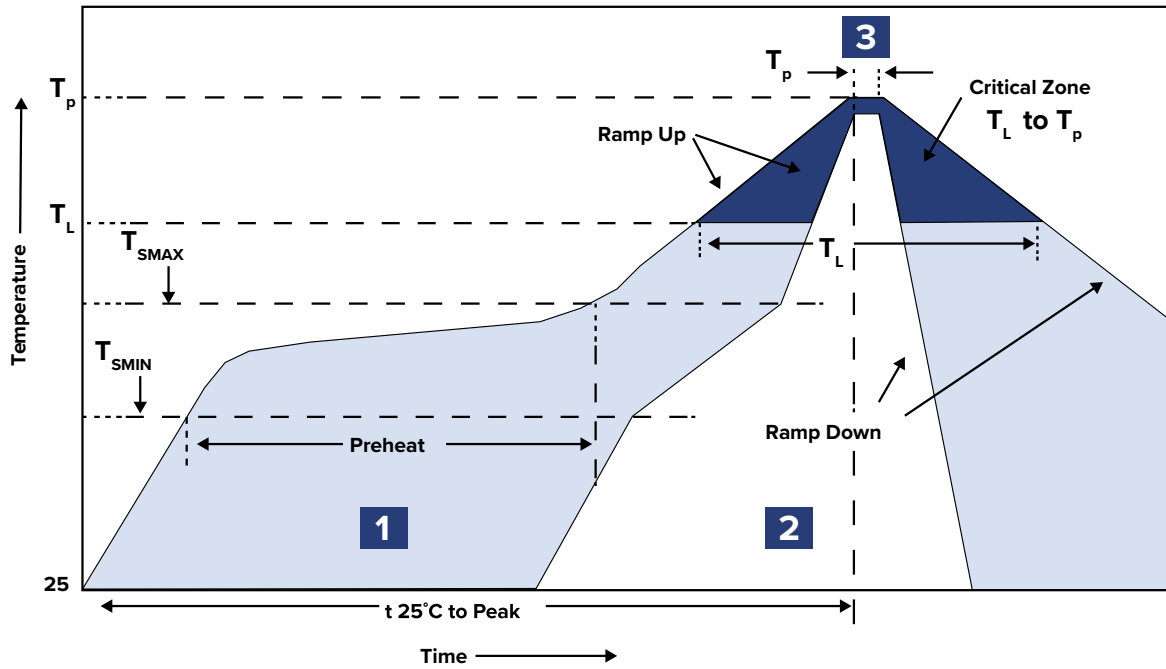


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Reflow Profile



Zone	Description	Temperature	Time
1	Preheat / Soak	$T_{SMIN} \sim T_{SMAX}$ 170°C ~ 190°C	60 - 120 sec.
2	Reflow	T_L 230°C	55 sec. MAX
3	Peak heat	T_P 260°C	10 sec. MAX



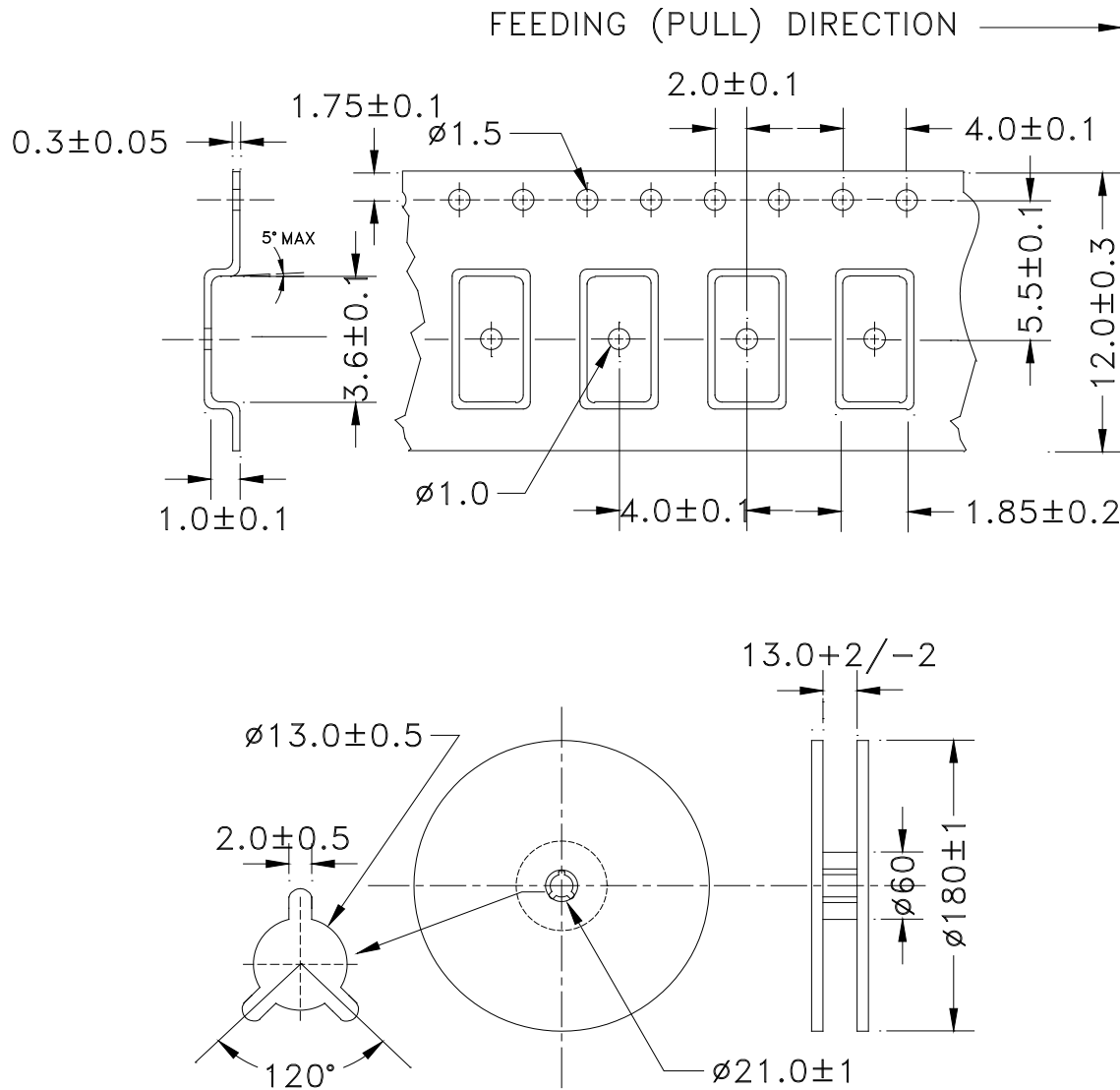
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Packaging

T=Tape and reel (3,000pcs/reel)



Dimensions: mm

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