

ECN/PCN No.: 4621

For Manufacturer			
Product Description: AUTOMOTIVE & INDUSTRIAL GRADE 32.768KHZ SMD CRYSTAL	Abracón Part Number / Part Series: ABS07AIG	<input type="checkbox"/> Documentation only <input checked="" type="checkbox"/> ECN <input type="checkbox"/> EOL	<input checked="" type="checkbox"/> Series <input type="checkbox"/> Part Number
Affected Revision: I	New Revision: J	Application: <input type="checkbox"/> Safety <input checked="" type="checkbox"/> Non-Safety	
Prior to Change: Electrical Specifications: 1. Equivalent series resistance (ESR) over operating temperature range -40°C to +85°C= 60kohm MAX 2. Shunt capacitance (CO)= 4.7fF TYPICAL			
After Change: Electrical Specifications: 1. Equivalent series resistance (ESR) over operating temperature range -40°C to +85°C= 70kohm MAX 2. Shunt capacitance (CO)= 3.0~6.0fF TYPICAL			
Cause/Reason for Change: Revised electrical specifications to align with the product design.			
Change Plan			
Effective Date: 5/18/2023	Additional Remarks: N/A		
Change Declaration: Revision of the typical electrical specifications to align with a new production line processes, needed to address production capacity and flexibility of delivery.			
Issued Date: 5/18/2023	Issued By: <i>Brooke Cushman</i>	Issued Department: Engineering	
Approval: <i>Thomas Culhane</i> Engineering Director	Approval: <i>Reuben Quintanilla</i> Quality Director	Approval: <i>Ying Huang</i> 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 <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:			

AUTOMOTIVE & INDUSTRIAL GRADE 32.768kHz SMD CRYSTAL

ABS07AIG

Request Samples



Check Inventory



3.2 x 1.5 x 0.9 mm

RoHS/RoHS II Compliant

MSL Level = N/A



Features

- AEC-Q200 Qualified
- Automotive Grade 1: -40°C to +125°C
- TS16949 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

Key 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	-20		+20	ppm	Option "blank"; See options
Temperature Coefficient	-0.040	-0.036		ppm/T ²	
Turn-over Temperature	+20	+25	+30	°C	
Equivalent series resistance (ESR)			70	kΩ	Over -40°C to +85°C
			70		Over -40°C to +105°C
			80		Over -40°C to +125°C
Shunt capacitance (C0)		<1.4		pF	
Motional capacitance (C1)		3.0 ~ 6.0		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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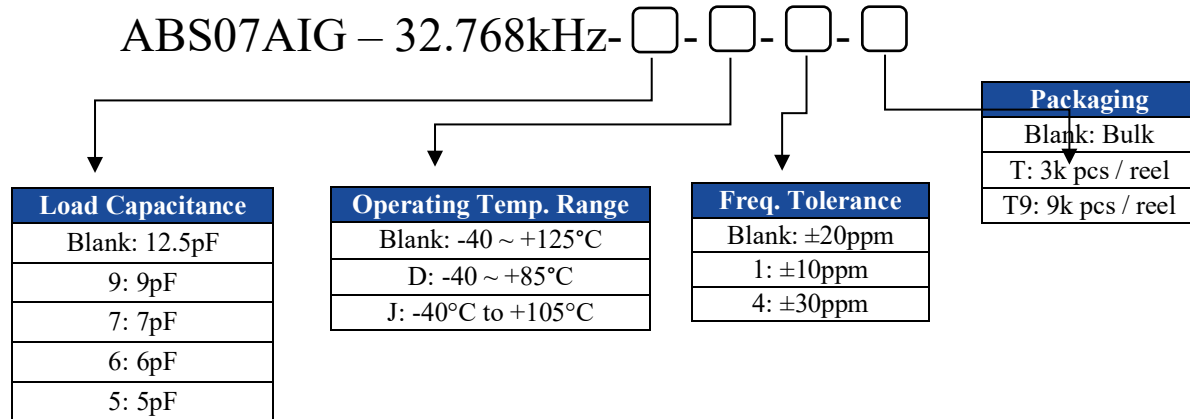
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3.2 x 1.5 x 0.9 mm
RoHS/RoHS II Compliant
 MSL Level = N/A



Options and Part Identification (left blank if standard)



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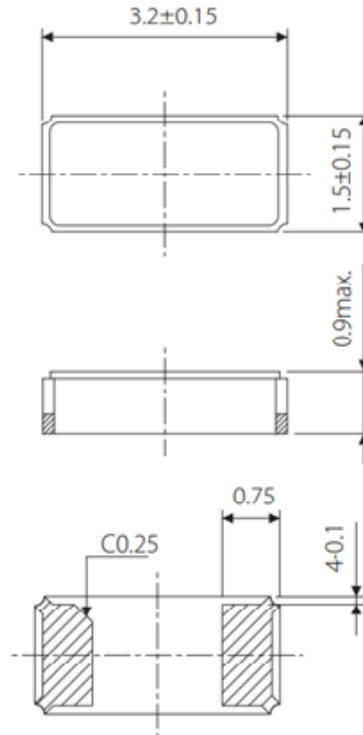


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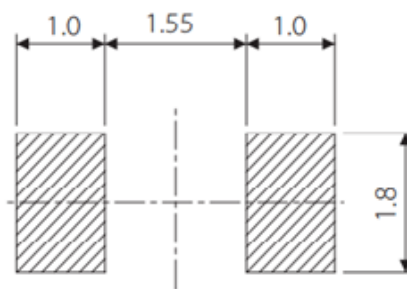


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Mechanical Dimensions



Recommended Land Pattern



Dimensions: mm

Sealing Method = Seam Sealing



5101 Hidden Creek Ln Spicewood TX 78669
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REVISED: 05-18-23

Revision #: J

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Reflow Profile [JEDEC J-STD-020]

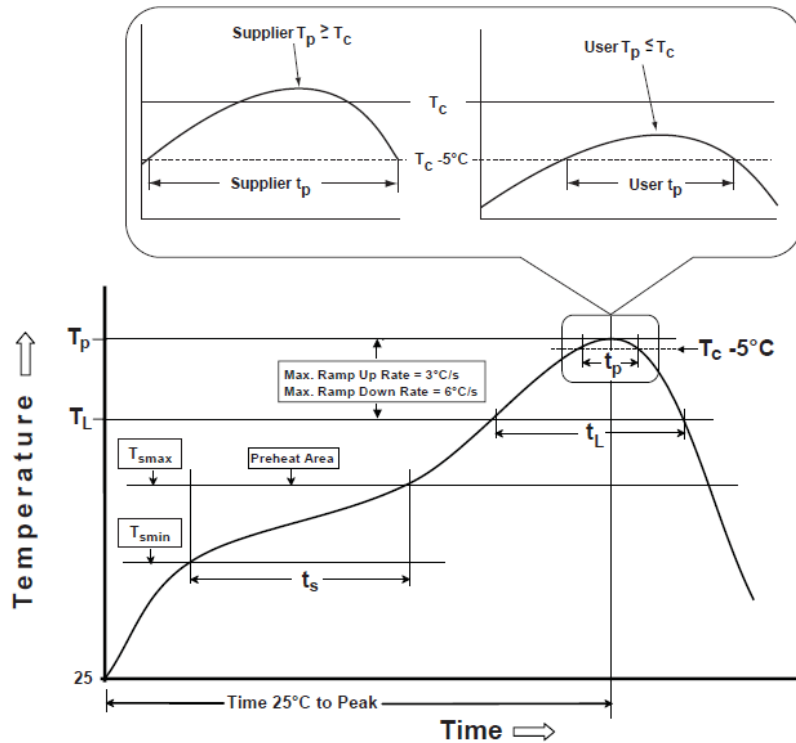


Table 1

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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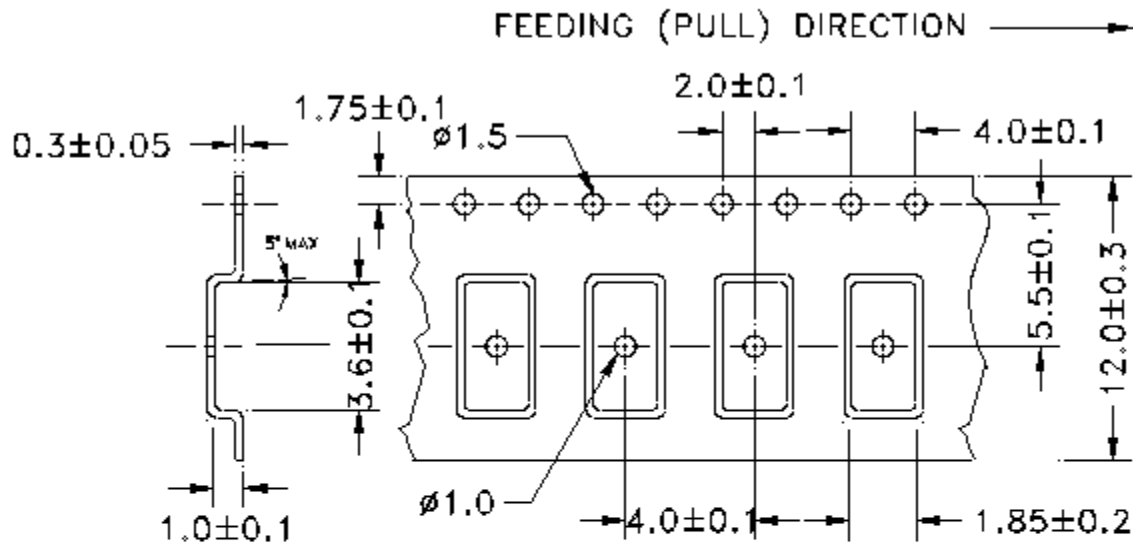
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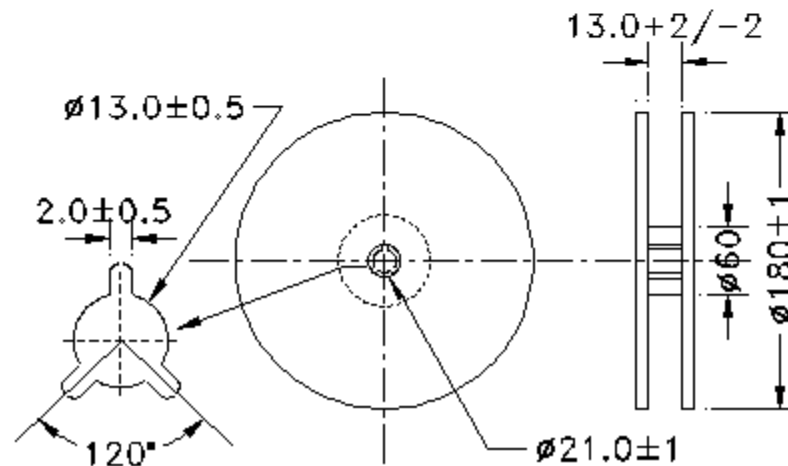
Packaging

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

T9=Tape and reel (9,000pcs/reel)



Reel=3,000pcs



Dimensions: mm



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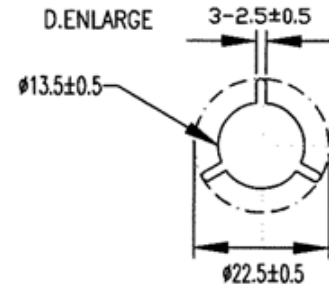
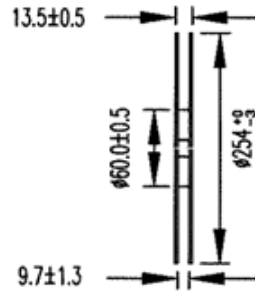
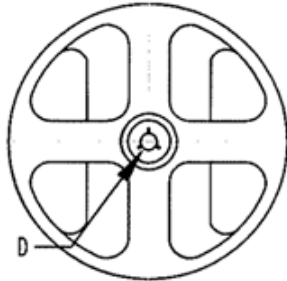
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RoHS/RoHS II Compliant
MSL Level = N/A



Reel=9,000pcs



Dimensions: mm

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