

# 32.768kHz SMD LOW PROFILE CRYSTAL

ABS05

1.6 x 1.0 x 0.5mm

ABS05



RoHS/RoHS II compliant

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

## FEATURES:

- 0.5mm height ideal for high density circuit boards
- Ceramic package offers excellent environmental & heat resistance
- Extended temperature -40°C to +85°C for industrial applications

## APPLICATIONS:

- Smart Display Credit Cards
- Wide range in communication & measuring equipment
- Commercial & Industrial applications
- Wireless communications
- PDA and Palm Pilots

Parameters	Minimum	Typical	Maximum	Units	Notes
Frequency	32.768			kHz	
Operation Mode	Flexural Mode (Tuning Fork)				
Operating Temperature	-40		+85	°C	
Storage Temperature	-55		+125	°C	
Frequency Tolerance @+25°C	-20		+20	ppm	Standard (See options if other than STD)
Temperature Coefficient:	-0.04	-0.03	-0.02	ppm/T <sup>2</sup>	
Turn-over temperature:	+20	+25	+30	°C	
Equivalent series resistance (ESR)			90	kΩ	
Shunt capacitance (C0)		1.3		pF	
Load capacitance	12.5			pF	Standard (See options if other than STD)
Drive Level			0.5	μW	
Aging @ +25°C±3°C	-3		+3	ppm	First Year
Insulation Resistance	500			MΩ	@ 100Vdc ± 15V

## OPTIONS AND PART IDENTIFICATION:

(Left blank if standard)

ABS05 – 32.768 kHz - [ ] - [ ] - [ ]

Load Capacitance
Blank: 12.5pF
9: 9pF
7: 7pF
6: 6pF
Contact Abracon for non-standard capacitance

Frequency Tolerance
Blank: ±20ppm
1: ±10ppm*
4: ±30ppm
*Contact Abracon for availability

Packaging
Blank: Bulk
T: Tape & Reel (3000pcs/reel)
T5: Tape & Reel (5000pcs/reel)

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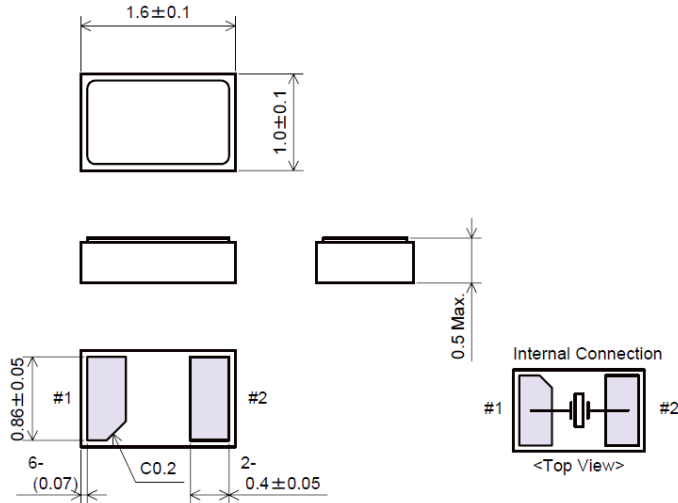


RoHS/RoHS II compliant

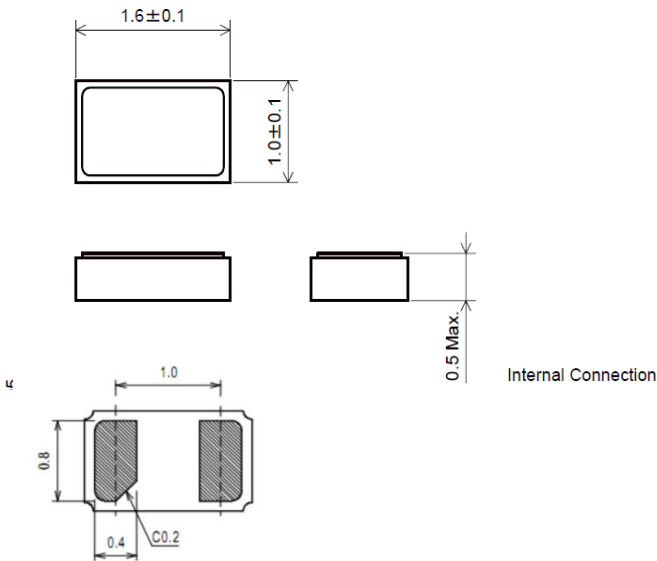
## OUTLINE DRAWING:

## TAPE & REEL:

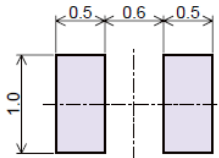
### Mechanical Dimensions



### Alternative Mechanical Dimensions #1

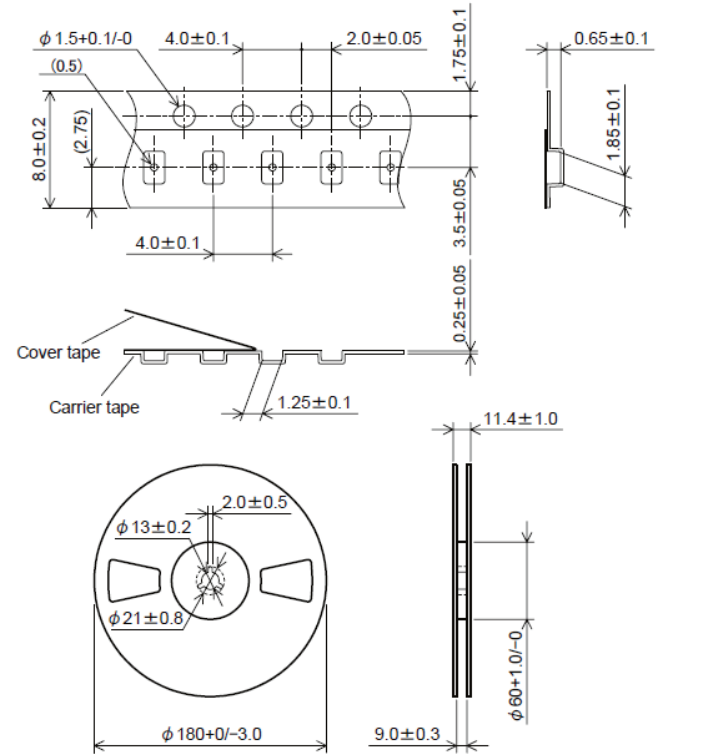


### Recommended land pattern



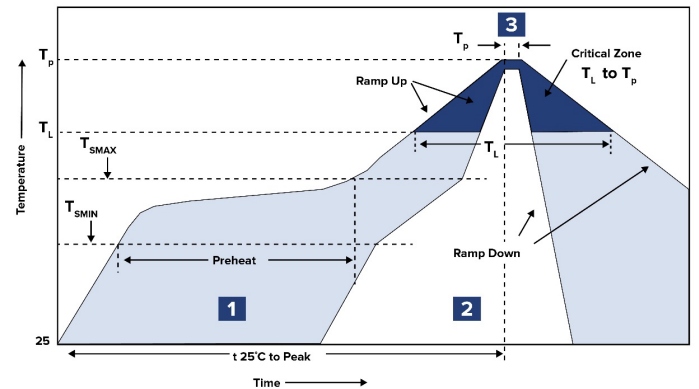
Dimensions: mm

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



Dimensions: mm

## REFLOW PROFILE:



Zone	Description	Temperature	Time
1	Preheat	$T_{SMIN} \sim T_{SMAX}$ 150°C ~ 180°C	60 ~ 120 sec.
2	Reflow	$T_L$ 230°C	30 ~ 40 sec.
3	Peak heat	$T_p$ 260°C±5°C	10 sec. MAX

**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



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