

# 32.768kHz SMD LOW PROFILE CRYSTAL

ABS13



6.9 x 1.4 x 1.3 mm

ABS13

Pb in High Temperature Solder  
(exempt per RoHS 2002/95/EC Annex (7))

**RoHS**  
Compliant

## FEATURES:

- Low frequency
- Plastic package with embedded heat resistant crystal in cylinder package
- Extended temperature -40°C to +85°C for industrial applications
- IR reflow capable

## APPLICATIONS:

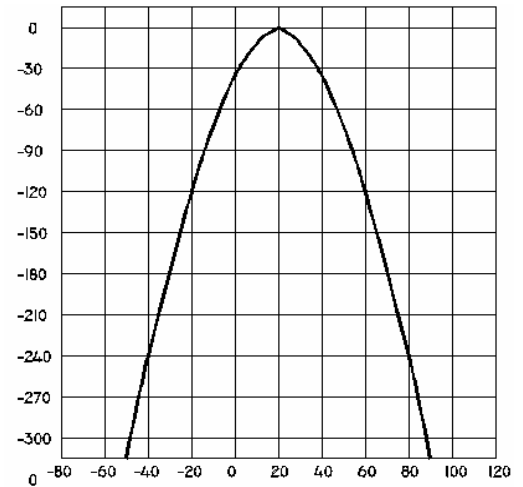
- Wide range in communication & measuring equipment
- Commercial & Industrial applications
- Automotive electronics applications
- Wireless communications
- PDA and Palm Pilots

## STANDARD SPECIFICATIONS:

### PARAMETERS

ABRACON P/N	ABS13
Nominal Frequency	32.768 kHz
Operating Temperature	-40°C to + 85°C
Turn-over Temperature	+25°C to ±5°C
Storage Temperature	-55°C to +125°C
Frequency Tolerance	±20 ppm max.
Frequency Coefficient ( $\beta$ )	- 0.034±0.006 ppm/T <sup>2</sup>
Equivalent Series Resistance	65 kohms max.
Load Capacitance CL	12.5 pF (see option)
Shunt Capacitance C0	1.2 pF typ.
Motional Capacitance C1	0.0023 pF typ.
Drive Level	1.0 $\mu$ W max.
Aging (first year) 25°C ± 3°C	± 3 ppm max.
Insulation Resistance	500 Mohms with 100 Vdc ±15V

### TUNING FORK CRYSTAL TEMPERATURE CURVE



## OPTIONS AND PART IDENTIFICATION:

(Left blank if standard)

ABS13-32.768kHz-□ - □

CL Option
7 or 9 (7pF or 9pF)

Packaging	
Blank	Bulk
T	Tape and Reel

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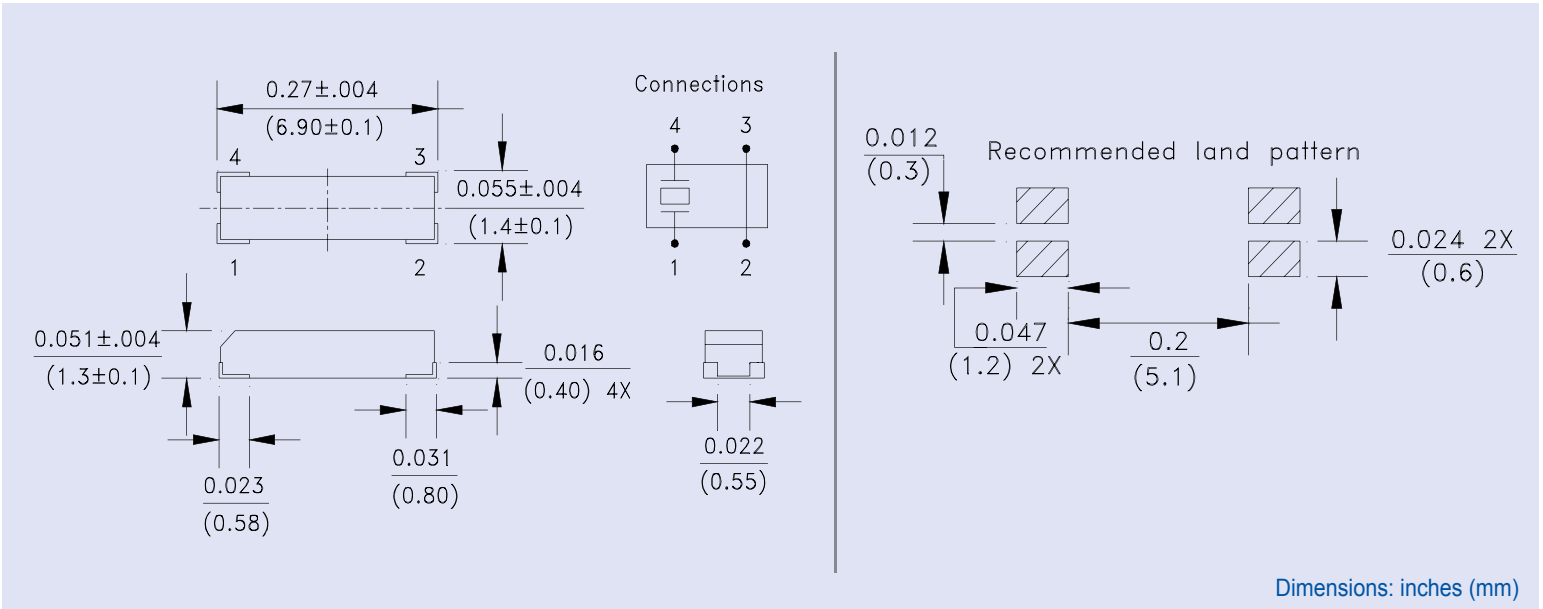
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## OUTLINE DRAWING:



## TAPE & REEL: T = Tape and reel 3,000pcs/reel

