

# 32.768kHz SMD LOW PROFILE CRYSTAL

ABS09



RoHS  
Compliant

ABS09



4.1 x 1.5 x 0.9 mm

## FEATURES:

- Low frequency in small size SMD
- 0.9mm 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:

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

## STANDARD SPECIFICATIONS:

### PARAMETERS

|                                     |                                  |
|-------------------------------------|----------------------------------|
| ABRACON P/N                         | ABS09                            |
| 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.                     |
| Temperature Coefficient ( $\beta$ ) | - 0.034±0.006 ppm/T <sup>2</sup> |
| Equivalent Series Resistance        | 70 kohms max.                    |
| Load Capacitance CL                 | 12.5 pF (see option)             |
| Drive Level                         | 1.0 $\mu$ W max.                 |
| Aging (first year) 25°C             | ± 5 ppm max.                     |
| Insulation Resistance               | 500 M $\Omega$ with 100 Vdc ±15V |
| Shunt capacitance Co                | 1.0pF typ.                       |
| Motional capacitance C1             | 2.0fF typ.                       |

## OPTIONS AND PART IDENTIFICATION:

(Left blank if standard)

ABS09-32.768kHz-□ - □ - □

| Load Capacitance |        | Freq. Tolerance |          | Packaging |               |
|------------------|--------|-----------------|----------|-----------|---------------|
| Blank            | 12.5pF | 1               | ± 10 ppm | Blank     | Bulk          |
| 9                | 9pF    |                 |          | T         | Tape and Reel |
| 7                | 7pF    |                 |          |           |               |

\*Contact ABRACON for  
non-standard load capacitance



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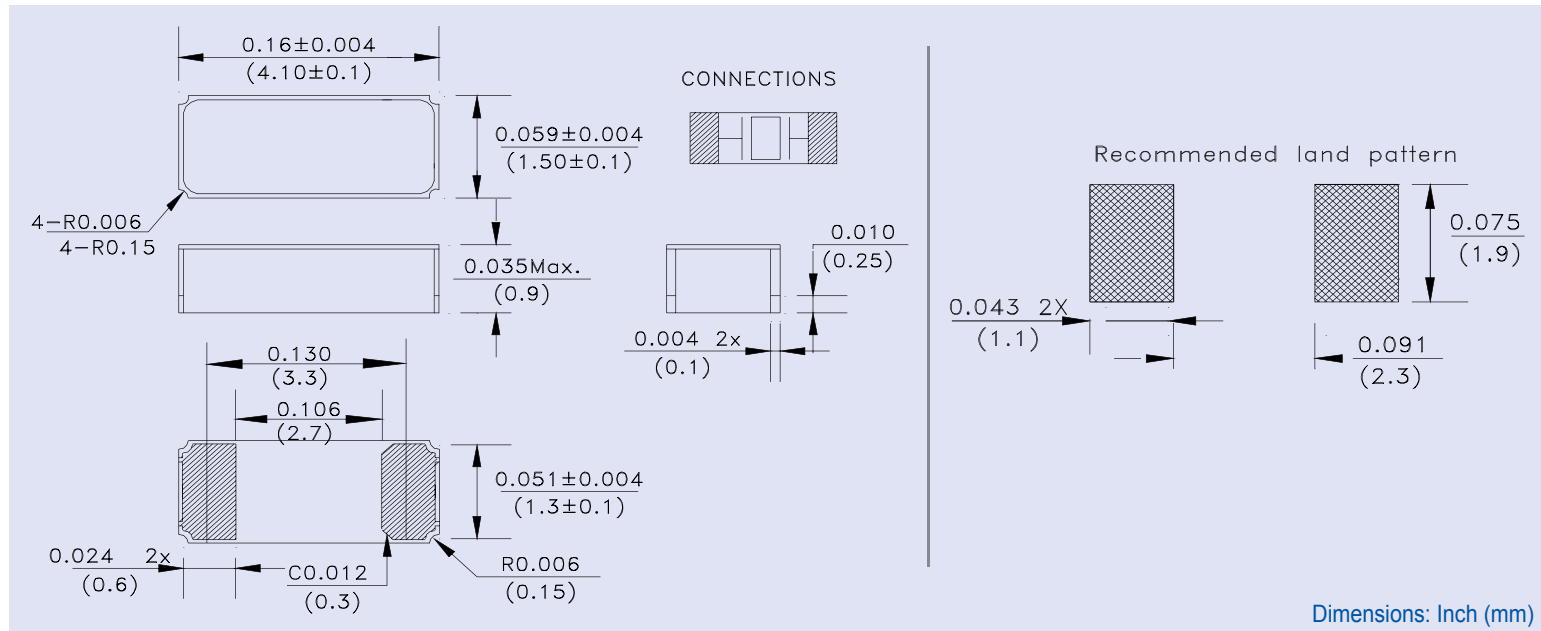
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## OUTLINE DRAWING:



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

