

# LOW FREQUENCY SMD CRYSTAL

ABS25

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

**RoHS**  
Compliant



## FEATURES:

- Low frequency in small size SMD
- 2.5mm 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:

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

## STANDARD SPECIFICATIONS:

### PARAMETERS

|                                   |  |
|-----------------------------------|--|
| ABRACON P/N                       | ABS25  |
| Nominal Frequency                 | 32.768 kHz   |
| Frequency Range                   | 30kHz to 165kHz  |
| 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. (for 32.768kHz)<br>±30 ppm max. for other frequencies (see options) |
| Capacitance Ratio                 | 450 typ. (32.768kHz)<br>425 to 800 typ. (others)                                 |
| Frequency Coefficient ( $\beta$ ) | - 0.034±0.006 ppm/T <sup>2</sup>   |
| Equivalent Series Resistance      | 50 kohms max. (32.768kHz)<br>30 kohms to 50 kohms max. (others)                  |
| Load Capacitance CL               | 12.5 pF (see option)   |
| Shunt Capacitance C0              | 1.35 pF typ. (32.768kHz)<br>0.8 pF to 1.7 pF typ. (others)                       |
| Motional Capacitance C1           | 0.0023 pF typ.   |
| Drive Level                       | 1.0 $\mu$ W max.   |
| Aging (first year) 25°C ± 3°C     | ± 3 ppm max. (32.768kHz)<br>± 5 ppm max. (others)                                |
| Insulation Resistance             | 500 M $\Omega$ with 100 Vdc ±15V   |

## OPTIONS AND PART IDENTIFICATION:

(Left blank if standard)

ABS25- Frequency-  -  -

| CL Option                                   |
|---|
| Please specify load cap.<br>in pF (ex. 6pF) |

| Freq. Tolerance |          |
|-----------------|----------|
| 1               | ± 10 ppm |
| 5               | ± 15 ppm |
| 2               | ± 20 ppm |
| 3               | ± 25 ppm |
| 4               | ± 30 ppm |

| Packaging |               |
|-----------|---------------|
| Blank     | Bulk          |
| T         | Tape and Reel |



# LOW FREQUENCY SMD CRYSTAL

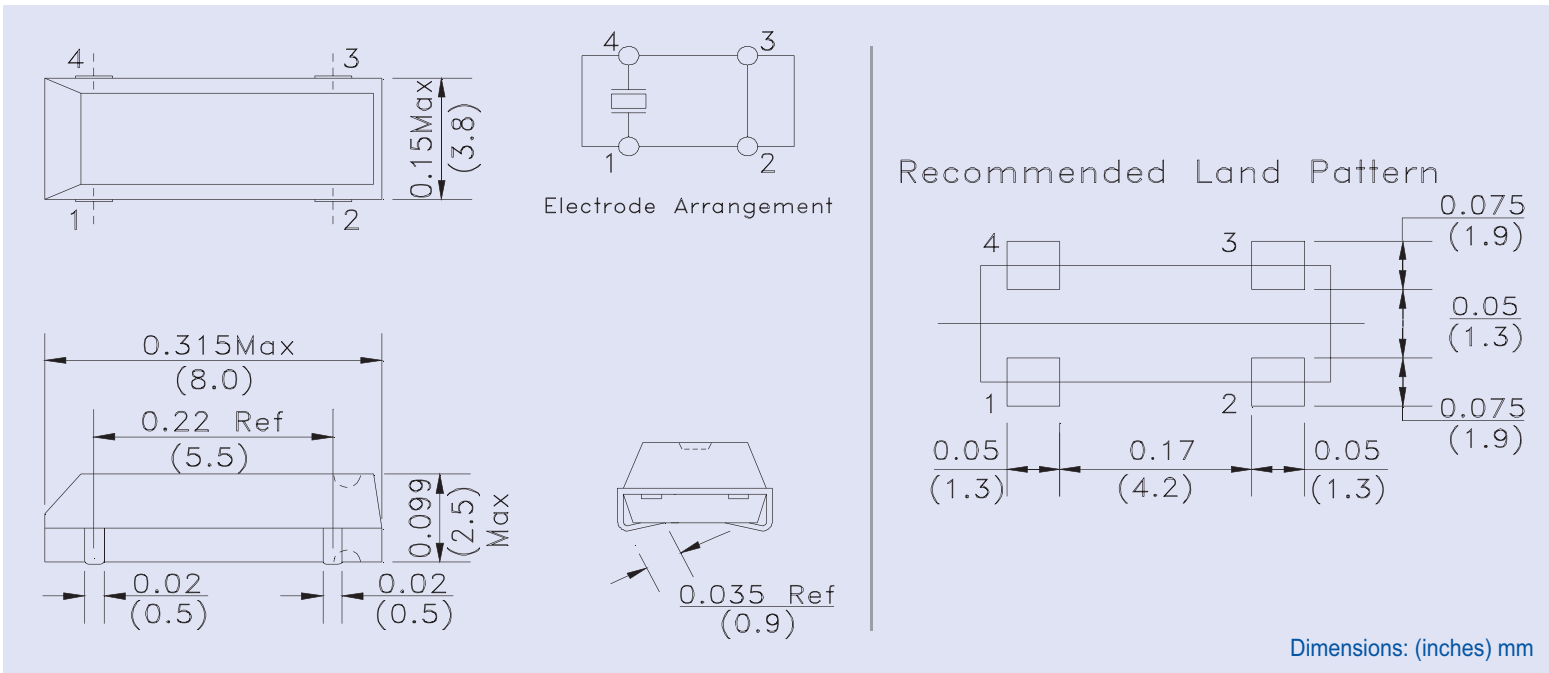
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## OUTLINE DRAWING:



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

