

# COMMERCIAL GRADE 6.9 x 1.4 x 1.3mm LOW FREQUENCY SMD CRYSTAL



6.9 x 1.4 x 1.3 mm

AKC13M

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

**RoHS**  
Compliant

## FEATURES:

- Low frequency 32.768kHz
- Plastic package with embedded heat resistant crystal in cylinder package
- Extended temperature -40°C to +85°C
- Suitable for RoHS reflow profile

## APPLICATIONS:

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

## STANDARD SPECIFICATIONS:

PARAMETERS	
ABRACON P/N	AKC13M Series
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	1µW max.
Aging (first year) 25°C ± 3°C	± 3 ppm max.
Insulation Resistance	500MΩ with 100 Vdc ±15V

## OPTIONS AND PART IDENTIFICATION:

(Left blank if standard)

AKC13M - 32.768kHz -  -  -

Load Capacitance
Blank: 12.5pF
9: 9pF
7: 7pF

Freq. Tolerance
Blank: ± 20 ppm
1: ± 10 ppm
5: ± 15 ppm
3: ± 25 ppm
4: ± 30 ppm

Packaging
Blank: Bulk
T: Tape & Reel



# COMMERCIAL GRADE 6.9 x 1.4 x 1.3mm LOW FREQUENCY SMD CRYSTAL



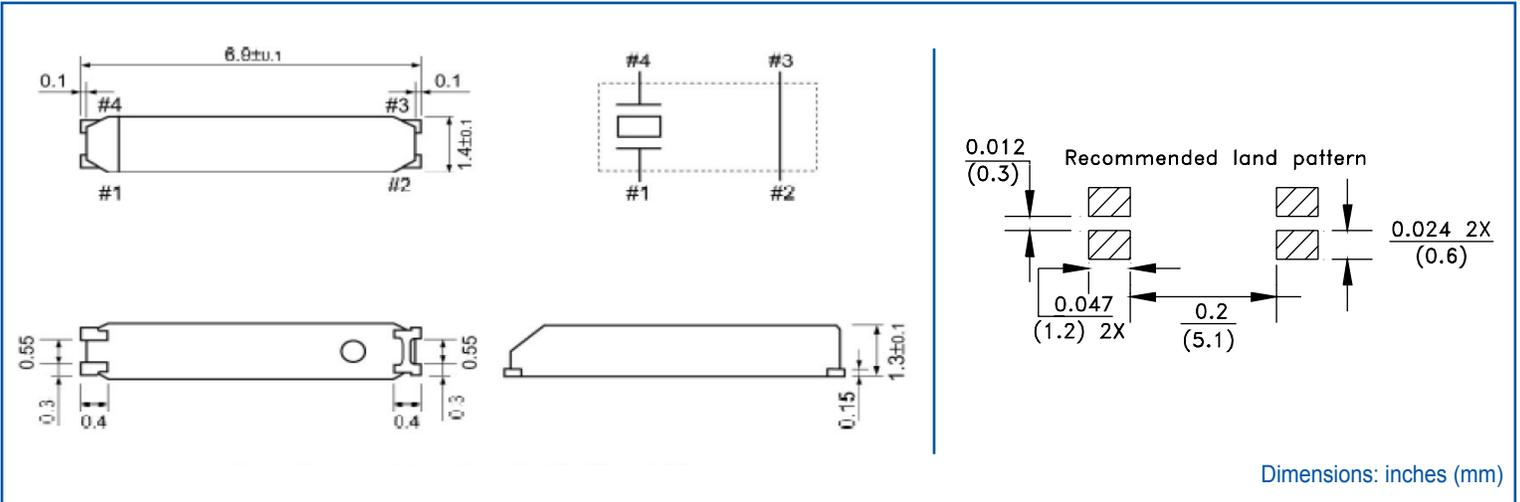
6.9 x 1.4 x 1.3 mm

AKC13M

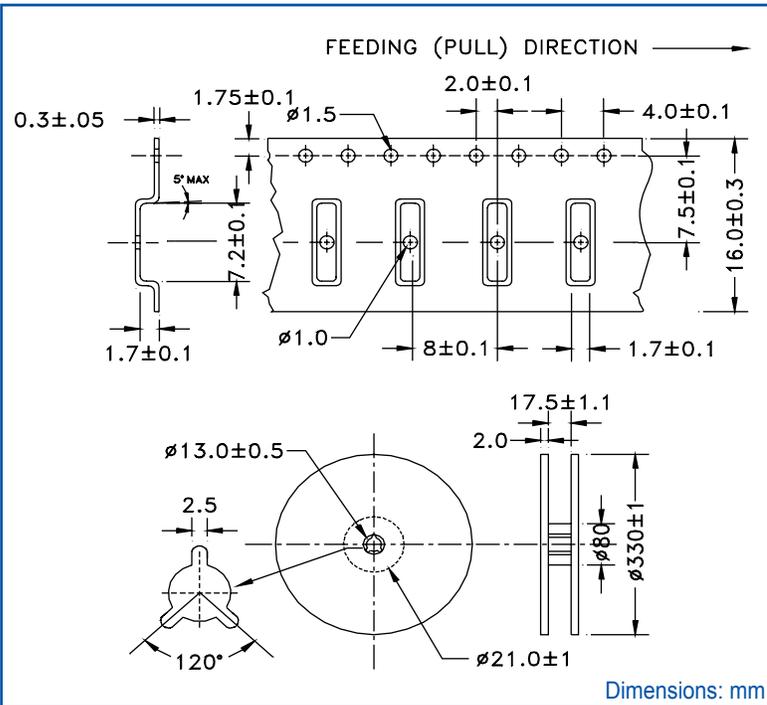
Pb in High Temperature Solder  
(exempt per RoHS 2002/95/EC Annex (7))

**RoHS  
Compliant**

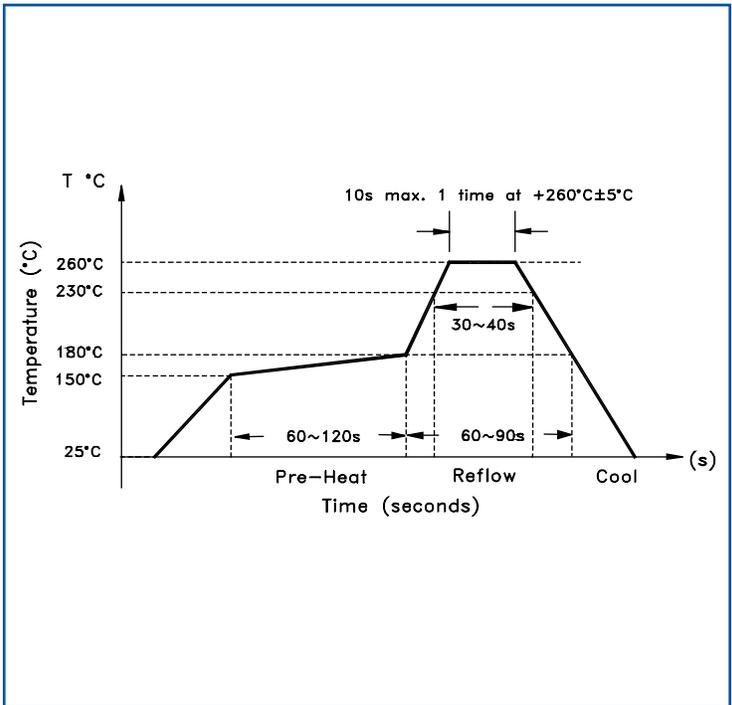
## OUTLINE DRAWING:



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



## REFLOW PROFILE



**ATTENTION:** Abracon Corporation'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-dependant 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 Corporation is required. Please contact Abracon Corporation for more information.

ABRACON IS  
ISO9001:2008  
CERTIFIED



Visit [www.abracon.com](http://www.abracon.com) for Terms & Conditions of Sale **Revised: 07.19.10**  
30332 Esperanza, Rancho Santa Margarita, California 92688  
tel 949-546-8000 | fax 949-546-8001 | [www.abracon.com](http://www.abracon.com)