32.768kHz SMD CRYSTAL

ABS13

6.9 x 1.4 x 1.4 mm

RoHS/RoHS II compliant.
Pb in high temperature solder
(exempt 7(a) per 2015/863/EU Annex)

Moisture Sensitivity Level: Level 1

FEATURES:

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

APPLICATIONS:

- Commercial & Industrial applications
- Wireless communications
- PDA and Palm Pilots

STANDARD SPECIFICATIONS:

Parameters	Minimum	Typical	Maximum	Units	Notes
Nominal Frequency	-----	32.768	-----	kHz	
Operating Temperature	-40	-----	+85	ºC	
Turnover Temperature	+20	+25	+30	ºC	
Storage Temperature	-55	-----	+125	ºC	
Frequency Tolerance @+25ºC	-20	-----	+20	ppm	See options
Frequency Coefficient (ß)		-0.035±0.01		ppm/ºC^2	
Equivalent series resistance (R1)	-----	-----	65	kΩ	
Load capacitance (CL)	-----	12.5	-----	pF	See options
Drive Level	-----	-----	1	µW	
Aging	-3	-----	+3	ppm	@25ºC±3ºC First year
Insulation Resistance	500	-----	-----	MΩ	@ 100Vdc ± 15V

OPTIONS AND PART IDENTIFICATION:

(Left blank if standard)

ABS13 -32.768kHz-□-□-□

Load Capacitance (pF)
Blank: 12.5pF
7: 7pF

Freq. Tolerance (ppm)
Blank: ±20ppm
4: ±30ppm

Packaging
Blank: Bulk
T: Tape & Reel

ABRACON LLC

5101 Hidden Creek Lane Spicewood TX 78669
Phone: 512-371-6159 | Fax: 512-351-8858
For terms and conditions of sale please visit:
www.abracon.com

REVISED: 09.30.2019

ABRACON IS ISO9001-2015 CERTIFIED

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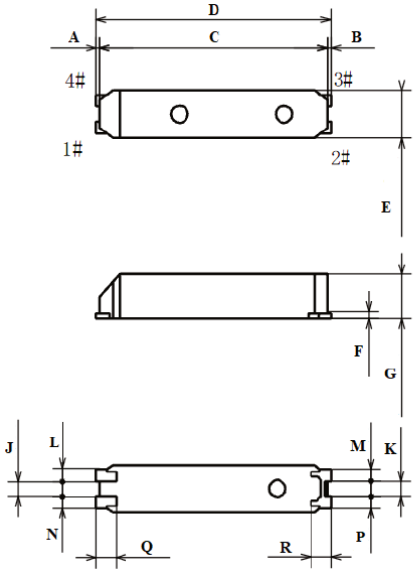
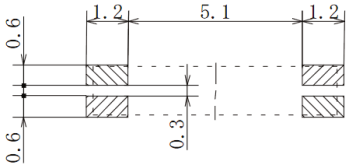
OUTLINE DRAWING:



Dimension Table	
A	0.10
B	0.10
C	6.70
D	6.9 ± 0.1
E	1.4 ± 0.1
F	0.15 ± 0.03
G	1.4 ± 0.1
J	0.55
K	0.65 ± 0.1
L	0.3 ± 0.1
M	0.3 ± 0.1
N	0.3 ± 0.1
P	0.3 ± 0.1
Q	0.55 ± 0.15
R	0.55 ± 0.15

Do not connect to external with #2 and #3.

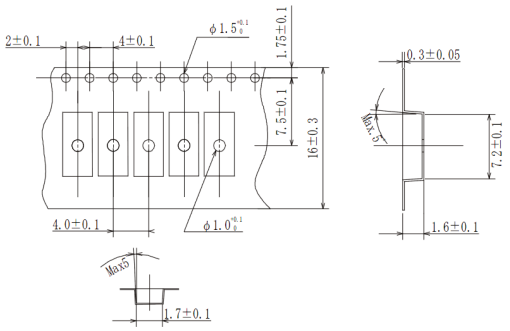
Recommended Land Pattern

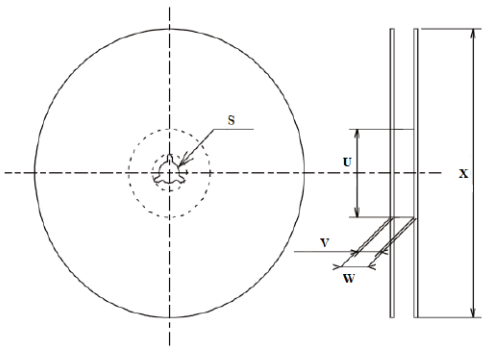


Note 1:
The part of the cylinder inside the resin mold may sometimes be exposed on the top or bottom of this crystal unit.
This aspect is purely cosmetic and does not have any effect on the quality, reliability, or electrical performance of the crystal unit.

Dimensions: mm

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

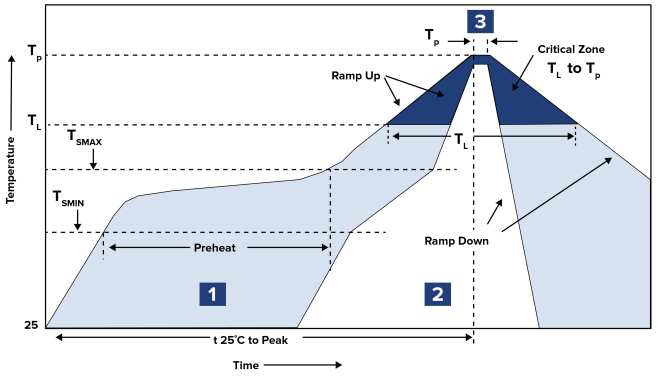




Dimension Table	
S	13.2 ± 0.5
U	60 ± 1.0
V	16.4 ± 1.5
W	18.8 ± 0.2
X	178 ± 2.0

Dimensions: mm

REFLOW PROFILE



Zone	Description	Temperature	Times
1	Preheat	T_{SMIN} ~ T_{SMAX} 170℃ ~ 190℃	60 ~ 120 sec.
2	Reflow	T_L 230℃	55 sec. MAX
3	Peak Heat	T_P 260℃	10 sec. MAX

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