

32.768kHz SMD CRYSTAL

ABS13

ABS13

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

6.9 x 1.4 x 1.4 mm

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:

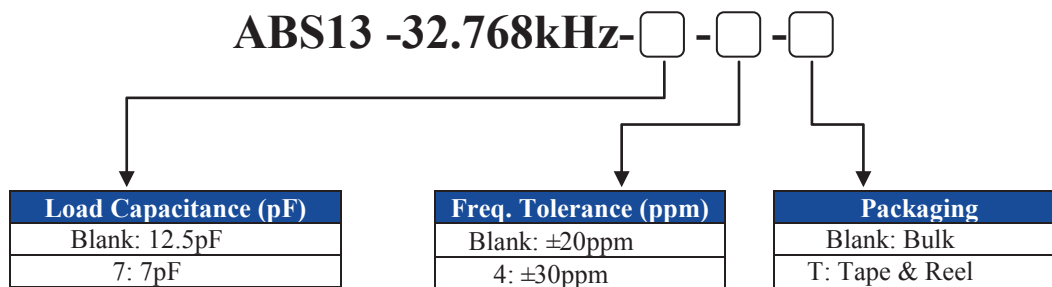
- Commercial & Industrial applications
- Wireless communications
- PDA and Palm Pilots

STANDARD SPECIFICATIONS:

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

OPTIONS AND PART IDENTIFICATION:

(Left blank if standard)



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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

Recommended Land Pattern

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

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

REFLOW PROFILE

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

Zone	Description	Temperature	Times
1	Preheat	$T_{SMIN} \sim T_{SMAX}$ 170°C ~ 190°C	60 ~ 120 sec.
2	Reflow	T_L 230°C	55 sec. MAX
3	Peak Heat	T_p 260°C	10 sec. MAX

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