

32.768kHz CERAMIC SMD LVCMOS CRYSTAL OSCILLATOR

ASAK

2.0 x 1.6 x 0.7mm

ASAK**ESD Sensitive****RoHS/RoHS II Compliant**

Moisture Sensitivity Level (MSL) – This product is Hermetically Sealed and not Moisture Sensitive - MSL = N/A: Not Applicable

FEATURES:

- 32.768kHz in 2.0 x 1.6 x 0.7mm package
- Seam sealed package assures high reliability performance
- Low current consumption 240 μ A max.
- Suitable for RoHS compliant reflow

APPLICATIONS:

- Laptop
- Digital camera
- Wireless LAN
- Bluetooth and mobile communication
- LCD
- PDA and MP3 player
- Electricity, gas and water metering

STANDARD SPECIFICATIONS:

Parameters		Minimum	Typical	Maximum	Units	Notes
Frequency Range		32.768			kHz	
Operating Temperature		-10		+60	°C	See options
Storage Temperature		-55		+125	°C	
Overall Frequency Stability*		-100		+100	ppm	See options
Supply Voltage (Vdd)		2.97	3.3	3.63	V	Standard
		2.375	2.5	2.625		Option 1
		1.71	1.8	1.89		Option 2
Supply Current (I _{dd})			120	240	μ A	
Output Load				15	pF	LVCMOS
Output Voltage	V _{OH}	0.9*Vdd			V	
	V _{OL}			0.1*Vdd		
Tri-state Function		“1” (V _{IH} $\geq$ 0.7*Vdd) : Oscillation “0” (V _{IL} $\leq$ 0.3*Vdd) : Hi Z				
Aging		-3		+3	ppm	@+25°C First year
Symmetry @1/2Vdd		40	50	60	%	Standard
		45	50	55		Option S
Start-up Time				5	ms	
Rise/Fall Time (Tr/Tf)				60	ns	
Disable Current				10	μ A	

OPTIONS AND PART IDENTIFICATION: (Left blank if standard)

ASAK - 32.768kHz - -

Supply Voltage
Blank: 3.3V $\pm$ 10%
1: 2.5 V $\pm$ 5%
2: 1.8 V $\pm$ 5%

Operating Temp.*
Blank: -10°C ~ +60°C
E: -20°C ~ +70°C
F: -30°C ~ +70°C
N: -30°C ~ +85°C
L: -40°C ~ +85°C

Overall Freq. Stability
Blank: $\pm$ 100ppm
J: $\pm$ 20ppm (**)
R: $\pm$ 25ppm
K: $\pm$ 30 ppm
C: $\pm$ 50 ppm

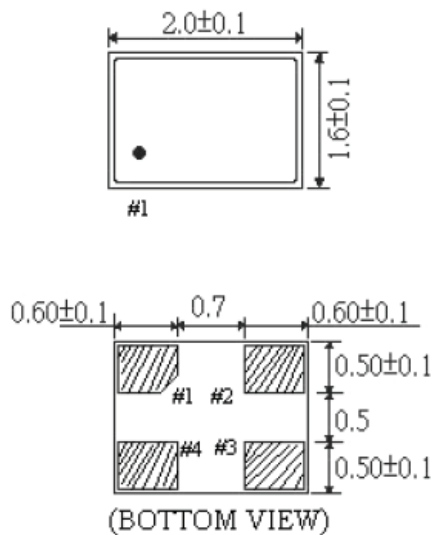
Symmetry
Blank: 40/60%
S: 45/55%

Packaging
Blank: Bulk
T: Tape & Reel

*Contact ABRACON for extended temperature range

** For standard temp. range -10° C to + 60° C only

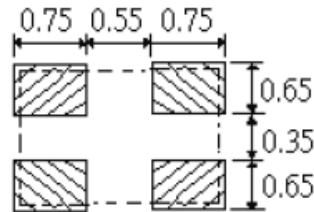
➤ OUTLINE DIMENSIONS:



Dimensions: mm



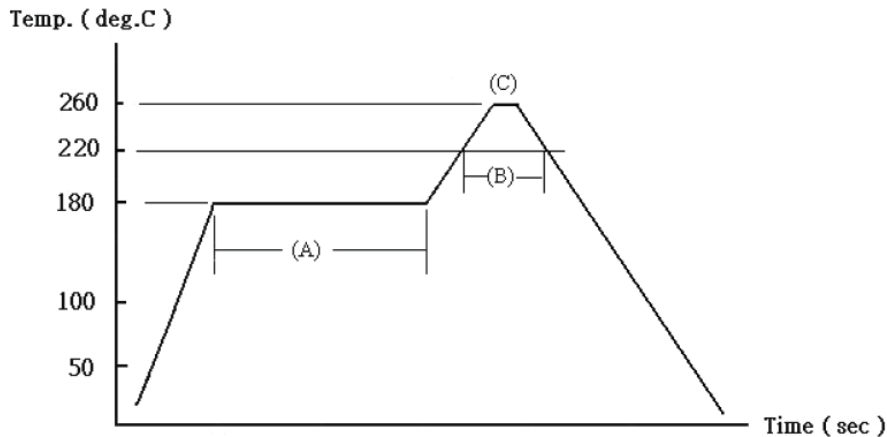
Recommended Land Pattern



Note: Recommend using an approximately 0.01uF bypass capacitor between PIN 2 and 4.

PIN #	Function
1	Enable/Disable
2	GND
3	Output
4	Vdd

➤ REFLOW PROFILE:



(A) Preheating Area	180±10°C, 90±30 seconds
(B) Heating Area	220±10°C, 30 seconds max.
(C) Peak Temperature	260°C, 10 seconds max.
Ramp Rate	3°C/second max.

32.768kHz CERAMIC SMD LVCMOS CRYSTAL OSCILLATOR

ASAK



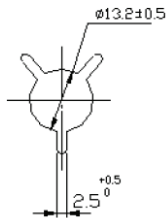
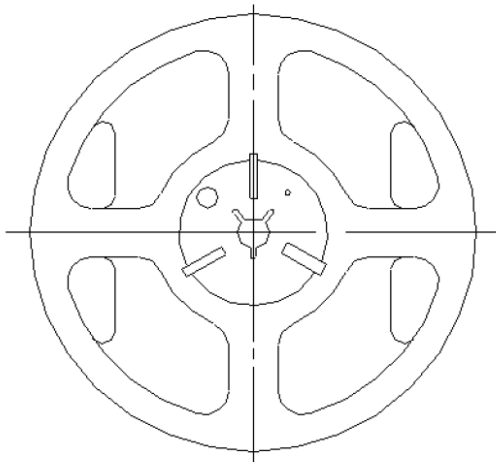
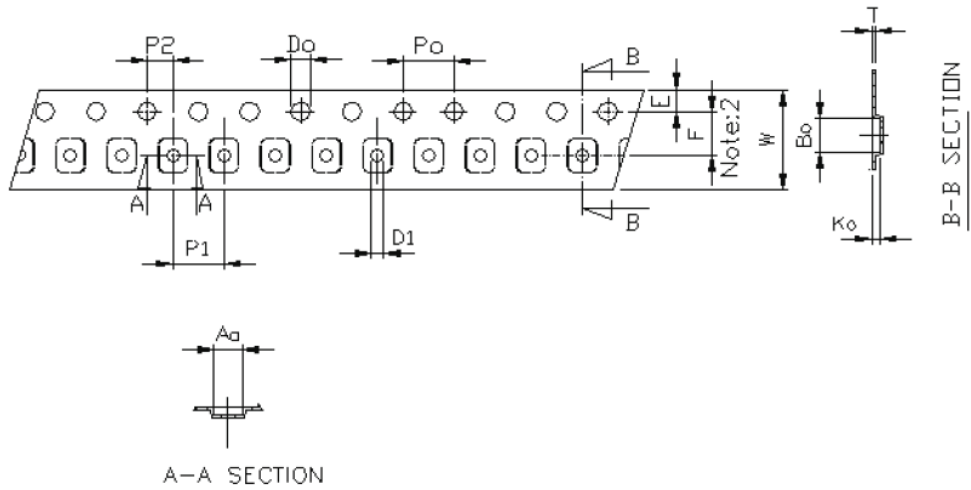
RoHS/RoHS II Compliant



2.0 x 1.6 x 0.7mm

TAPE & REEL:

T= Tape and reel (1,000pcs/reel)



Dimensions: mm

Symbol	Dimensions (mm)	Symbol	Dimensions (mm)
A0	1.85 ± 0.10	D0	1.50 ± 0.05
B0	2.25 ± 0.10	D1	1.05 ± 0.05
K0	0.95 ± 0.10	E	1.75 ± 0.10
P0	4.0 ± 0.10	F	3.50 ± 0.05
P1	4.0 ± 0.10	W	8.0 ± 0.20
P2	2.0 ± 0.05	T	0.25 ± 0.05

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
ISO 9001: 2008
CERTIFIED



2 Faraday, Suite# B | Irvine | CA 92618 **Revised: 11.09.15**
Ph. 949.546.8000 | Fax. 949.546.8001
Visit www.abracon.com for Terms and Conditions of Sale