

32.768kHz CERAMIC SMD CRYSTAL OSCILLATOR

ASHK SERIES



RoHS Compliant



4.0 x 2.5 x 0.9 mm

FEATURES:

- Ultra low uA current consumption with CMOS output
- Miniature ceramic package (4.0 x 2.5 x 0.9mm)
- Operating Temp -40°C to +85°C
- Start up time less than 1 sec with supply voltage 1.5 to 5.5V
- Tri-state function
- Pb-free reflow capable

APPLICATIONS:

- General purpose clock generator for digital systems
- Clock drivers for Real Time Clocks
- Timekeeping in network servers and computers
- Electricity, gas and water metering
- Portable field communication
- Mobile phone
- Clock & Data recovery
- CCD clock for VTR camera
- Computers and peripherals
- Portable MP3 players & games

STANDARD SPECIFICATIONS:

PARAMETERS	
ABRACON P/N	ASHK Series
Frequency range:	32.768kHz
Operating temperature:	-20° C to + 70° C (see options)
Storage temperature:	- 55° C to + 125° C
Frequency tolerance:	+5 ± 20ppm @ +25° C Vdd=3.3V; referenced to 32.768kHz
Overall frequency stability:	-120 to +10 ppm over -20 to +70° C; referenced to frequency measured @ 25 °C
Supply voltage (Vdd):	3.3 V ± 5% (see options. 1.5 to 5.5V)
Supply current:	Please see Table 1
Symmetry:	40/60 % @ 1/2Vdd
Rise and fall time (Tr/Tf):	200ns max. (10% to 90%Vdd, CL=15pF)
Startup time:	1 sec max. for Vdd=3.3V @ +25° C
Output load:	CMOS (15 pF max.)
Output voltage (CL=15pF @ +25 °C):	VOH = Vdd-0.4V min. VOL = 0.4V max.
Tri-state function:	"1" (VIH >= 0.9*Vdd) (Pin must be set "1" to oscillate) "0" (VIL < 0.1*Vdd) : Hi Z
Stand-by current:	250nA max. @ +25° C
Aging (first year) 25°C ± 3°C:	± 5ppm max.
Aging (10 years) 25°C ± 3°C:	± 10ppm max.

TABLE 1

Vdd (V)	Supply Current (µA typ.)	Supply Current (µA max.)
3.3 (STD)	1.4	1.5
5.5	2.2	2.4
2.8	1.2	1.4
1.8	1.0	1.2
1.5	0.8	1.0

OPTIONS & PART IDENTIFICATION:

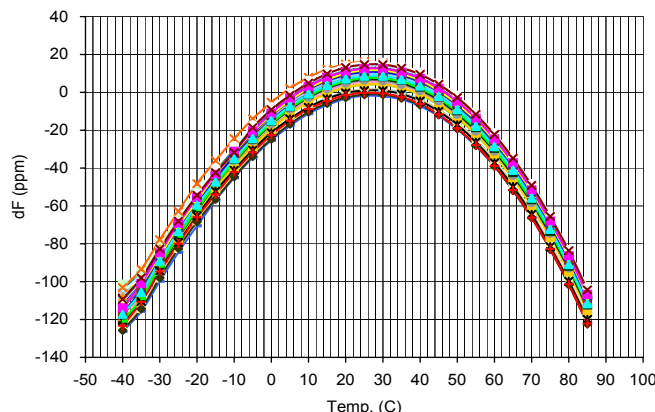
(Left blank if standard)

ASHK□ - 32.768kHz - □ - □

Supply Voltage		Frequency Temp Characteristics		Packaging	
Blank	3.3V	Blank	-20°C to +70°C / -90 to +10 ppm	Blank	Bulk
2	5.5V	L	-40°C to +85°C / -140 to +10 ppm	T	Tape and Reel
3	2.8V				
4	1.8V				
5	1.5V				

Please contact ABRACON for more information.

TYPICAL TEMP CHARACTERISTICS



ABRACON IS
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ASHK

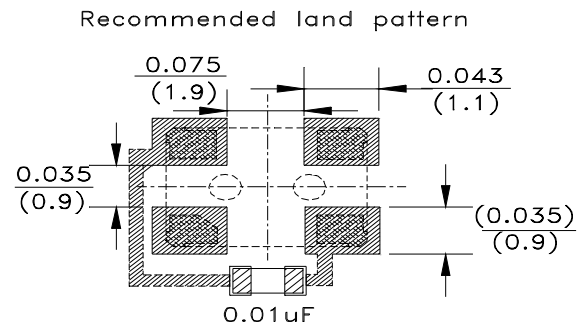
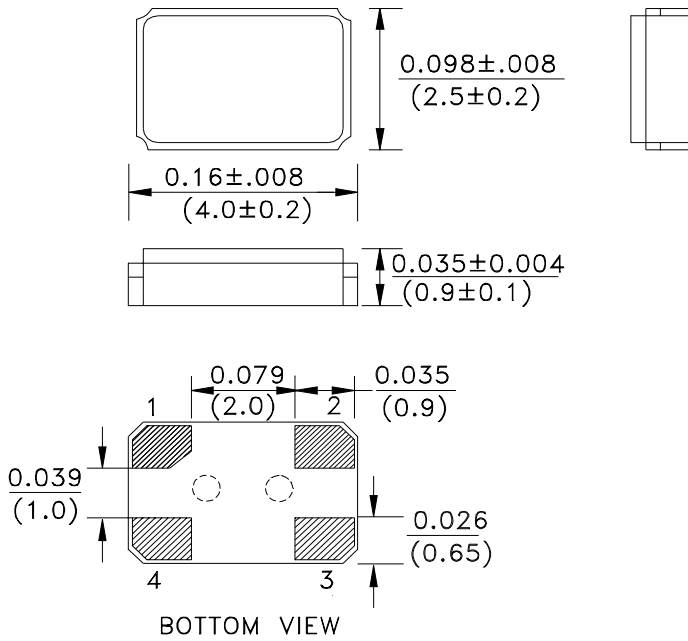
4.0 x 2.5 x 0.9 mm



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OUTLINE DRAWING:

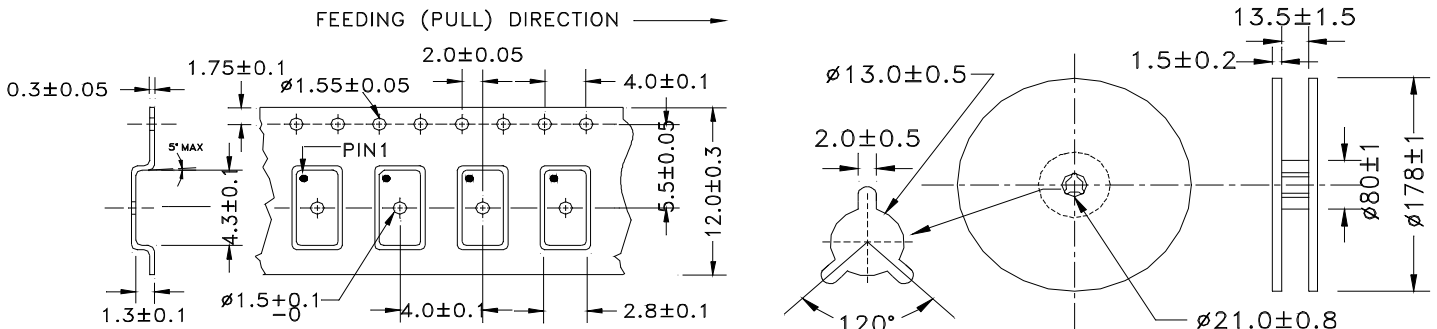


Note: Recommend using an approximately 0.01 μF bypass capacitor between PIN 2 and 4.

PIN	FUNCTION
1	Tristate
2	GND/Case
3	Output
4	Vdd

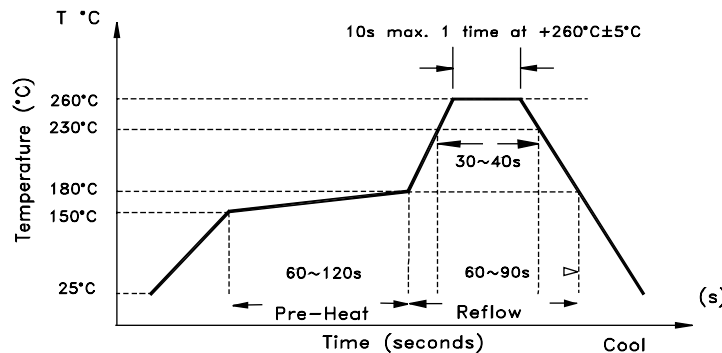
Please remain pin 1 "High" if you do not use the Tri-state function.

TAPE & REEL: Tape and reel 1,000pcs/reel



Dimensions: mm

REFLOW PROFILE



NOTE: Abracon manufactured products are intended for general commercial and industrial use. For applications requiring high reliability and/or presenting extreme operating environment, written consent & authorization from Abracon is required.

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