

32.768kHz CERAMIC SMD CRYSTAL OSCILLATOR

ASHK SERIES



RoHS
Compliant



4.0 x 2.5 x 0.9 mm

FEATURES:

- 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
- Ultra low current consumption with CMOS output
- Tri-state function
- Pb-free reflow capable

APPLICATIONS:

- Clock and Data recovery
- CCD clock for VTR camera
- Computers and peripherals
- Portable MP3 players and games

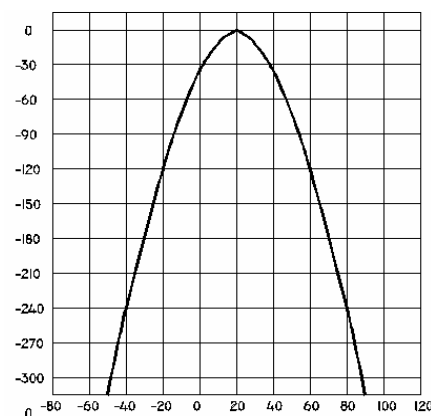
STANDARD SPECIFICATIONS:

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.
Tristate function :	"1" (VIH >= 0.9*Vdd) or open: Oscillation "0" (VIL < 0.1*Vdd) : Hi Z
Stand-by current:	250nA max. @ +25° C

TABLE 1

Vdd (V)	Supply Current (uA max.)
1.5V ~3.3V	1.5
5.5V	2.0

TUNING FORK CRYSTAL TEMPERATURE CURVE



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.

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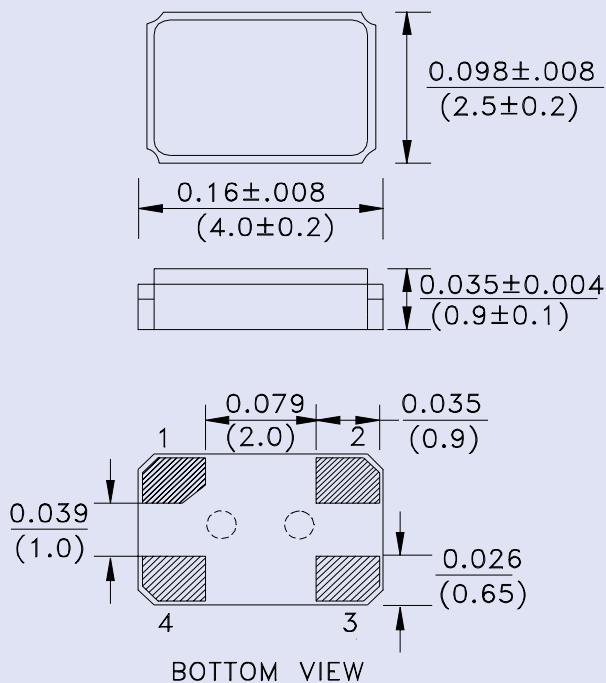


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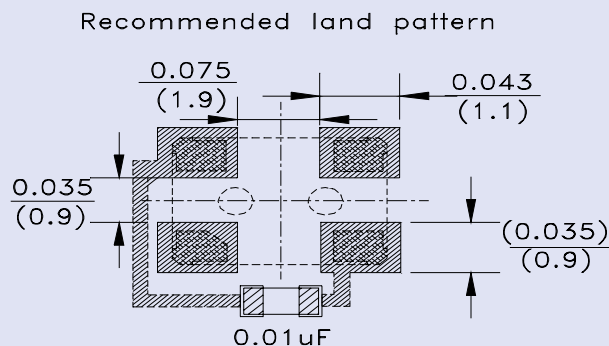
4.0 x 2.5 x 0.9 mm

OUTLINE DRAWING:



Dimensions: Inches (mm)

Sealing Method: Seam Sealing

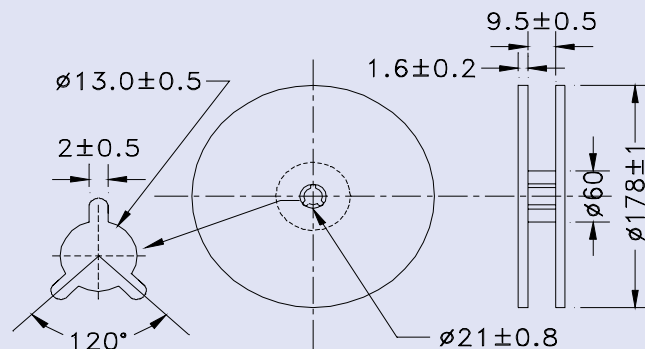
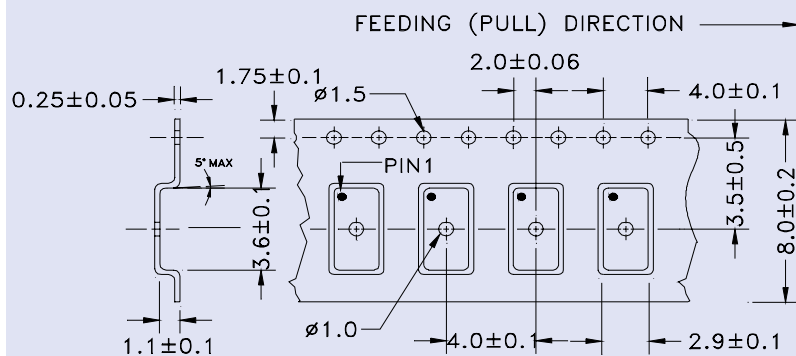


Note: Recommend using an approximately 0.01uF bypass capacitor between PIN 2 and 4.

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