

3.2 x 2.5 x 1.2 mm 32.768kHz CERAMIC SURFACE MOUNT CRYSTAL OSCILLATOR

ASEK Series



RoHS
Compliant



3.2 x 2.5 x 1.2 mm

FEATURES:

- 32.768kHz in 3.2 x 2.5 package
- Seam sealed assure high reliability performance
- Low current consumption
- IR-Reflow capable
- Extend temperature range available

APPLICATIONS:

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

STANDARD SPECIFICATIONS:

PARAMETERS

ABRACON P/N	ASEK Series
Frequency	32.768kHz
Operating Temperature	0°C to + 70°C (see options)
Storage Temperature	- 55°C to + 125°C
Overall frequency stability:	±100 ppm max. (see options)
Supply voltage (Vdd):	3.3 Vdc ± 10% (see options)
Supply current:	0.8mA typical, 1.5mA max.(Vdd= 1.8V±5%) 1.2mA typical, 2.5mA max.(Vdd= 2.5V±5%) 1.7mA typical, 3.5mA max.(Vdd= 3.3V±10%)
Symmetry:	40/60 % max.@ 1/2Vdd (see options)
Rise and fall time (Tr/Tf):	40ns typical, 50 ns max
Output load:	15pF
Output voltage:	VOH = 0.9 * Vdd min. VOL = 0.1 * Vdd max
Start-up time:	24ms typical, 28ms max
Tri-state function :	Logic "1" or open: Oscillation Logic "0" (VIL < 0.8 Vdc) : Hi z
Aging at 25°C :	± 3ppm/year

OPTIONS AND PART IDENTIFICATION (Left blank if standard)

ASEK-□ - 32.768kHz - □ - □ - □ - □

Supply Voltage	
Blank	3.3V±10%
1	2.5V±5%
2	1.8V±5%

Operating Temp.	
E	-20°C to +70°C
F	-30°C to +70°C
N	-30°C to +85°C
L	-40°C to +85°C

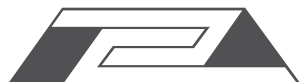
*Contact ABRACON for extended temperature range.

Freq. Stability	
J	±20ppm(*)
R	±25ppm
K	±30ppm
C	±50ppm

* For E, F, N and 0° C to + 70° C only

Packaging	
T	Tape and Reel

Symmetry	
S	45/55% max at 1/2Vdd



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Technical drawings of a 1.20 inch square package showing top, side, and bottom views with dimensions in inches.

Top View: A square package with a central circular feature. Dimensions include a top width of 0.126 ± 0.004 (3.20 ± 0.10), a right height of 0.098 ± 0.004 (2.5 ± 0.10), and corner radii of 4 and 3.

Side View: Shows the package profile with a maximum height of 0.047 max (1.20 max).

Bottom View: Shows the package with four shaded rectangular features. Dimensions include a top width of 0.0472 ± 0.004 (1.20 ± 0.10), a left height of 0.0256 Ref. (0.65 Ref.), a bottom width of 0.0354 Ref. (0.9 Ref.), and a right height of 0.039 ± 0.004 (1.0 ± 0.10). Corner radii of 1, 2, 3, and 4 are indicated.

Figure 10.10 shows four diagrams illustrating different types of boundary conditions for a rectangular domain. Each diagram consists of a rectangle with arrows indicating the boundary conditions on its four sides. The diagrams are labeled (a) through (d).

- (a) Fixed support on the left, free on the right. The left side has a vertical arrow pointing down and a horizontal arrow pointing left. The right side has a vertical arrow pointing up and a horizontal arrow pointing right.
- (b) Free on the left, fixed support on the right. The left side has a vertical arrow pointing down and a horizontal arrow pointing left. The right side has a vertical arrow pointing up and a horizontal arrow pointing right.
- (c) Fixed support on the bottom, free on the top. The bottom side has a vertical arrow pointing down and a horizontal arrow pointing left. The top side has a vertical arrow pointing up and a horizontal arrow pointing right.
- (d) Free on the bottom, fixed support on the top. The bottom side has a vertical arrow pointing down and a horizontal arrow pointing left. The top side has a vertical arrow pointing up and a horizontal arrow pointing right.

PIN	FUNCTION
1	Tri-state
2	GND
3	Output
4	Vdd

Dimensions: inches (mm)

Technical drawing of a mechanical part, showing a side view and a top view. The side view includes dimensions: 0.25 ± 0.05 , 1.75 ± 0.1 , $\phi 1.0 \pm 0.1 / -0.0$, 4.0 ± 0.1 , 3.4 ± 0.1 , 3.5 ± 0.05 , 8.0 ± 0.2 , 1.4 ± 0.1 , 4.0 ± 0.1 , 2.7 ± 0.1 , and $\phi 1.0 \pm 0.1 / -0.0$. The top view includes dimensions: $\phi 13.0 \pm 0.5$, $2.5 \pm 0.5 / -0$, 11 ± 0.5 , 120° , $8 \pm 1 / -0$, 11.5 ± 0.2 , $\phi 60.2 \pm 0.5$, and $\phi 178 \pm 1$. An arrow indicates the FEEDING (PULL) DIRECTION.

The graph illustrates the temperature profile of a reflow soldering process. The y-axis represents Temperature in degrees Celsius (°C), with marked values at 25°C, 150°C, 180°C, 230°C, and 260°C. The x-axis represents Time in seconds (s), divided into three main phases: Pre-Heat, Reflow, and Cool. The temperature starts at 25°C, rises to 150°C during the Pre-Heat phase (60~120s), then continues to rise to 260°C during the Reflow phase (30~40s). The temperature remains at 260°C for a maximum of 10 seconds (10s max. 1 time at +260°C±5°C). After the Reflow phase, the temperature decreases during the Cool phase (60~90s).