

32.768kHz CERAMIC SMD LVC MOS CRYSTAL OSCILLATOR



ASAK



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

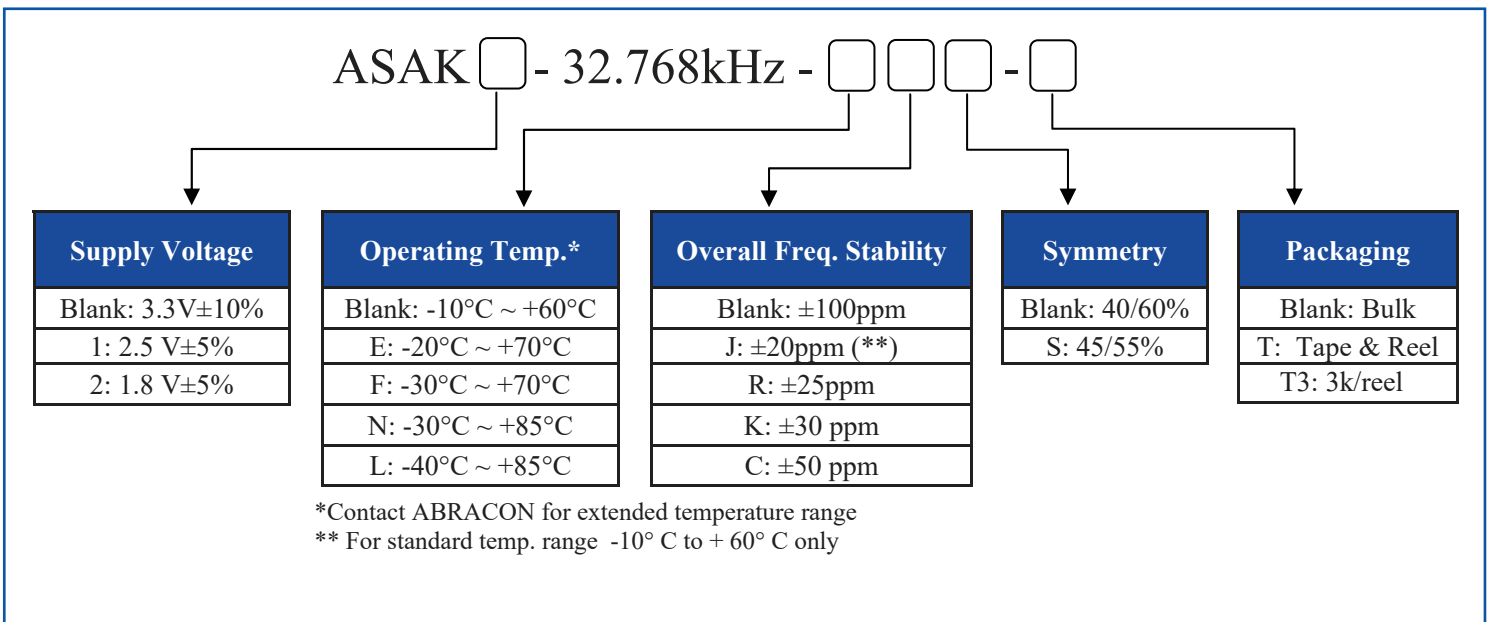
APPLICATIONS:

- 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 | $^{\circ}$ C | See options |
| Storage Temperature | -55 | | +125 | $^{\circ}$ 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 | LVC MOS |
| 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 $^{\circ}$ 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)



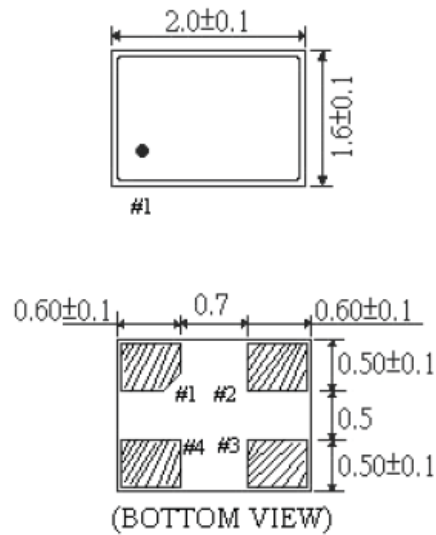


2.0 x 1.6 x 0.7mm

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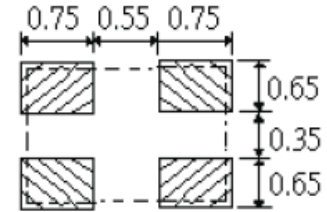
RoHS/RoHS II Compliant

OUTLINE DIMENSIONS:



Dimensions: mm

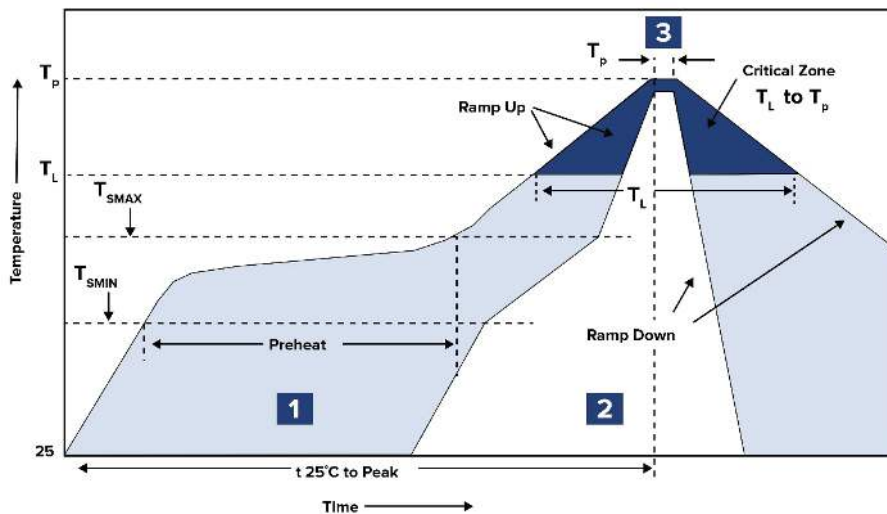
Recommended Land Pattern



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:



| Zone | Description | Temperature | Time |
|------|-------------|---|---------------|
| 1 | Preheat | $T_{SMIN} \sim T_{SMAX}$ 170°C ~ 190°C | 60 ~ 120 sec. |
| 2 | Reflow | T_L 220°C±10°C | 30 sec. MAX |
| 3 | Peak heat | T_P 260°C | 10 sec. MAX |



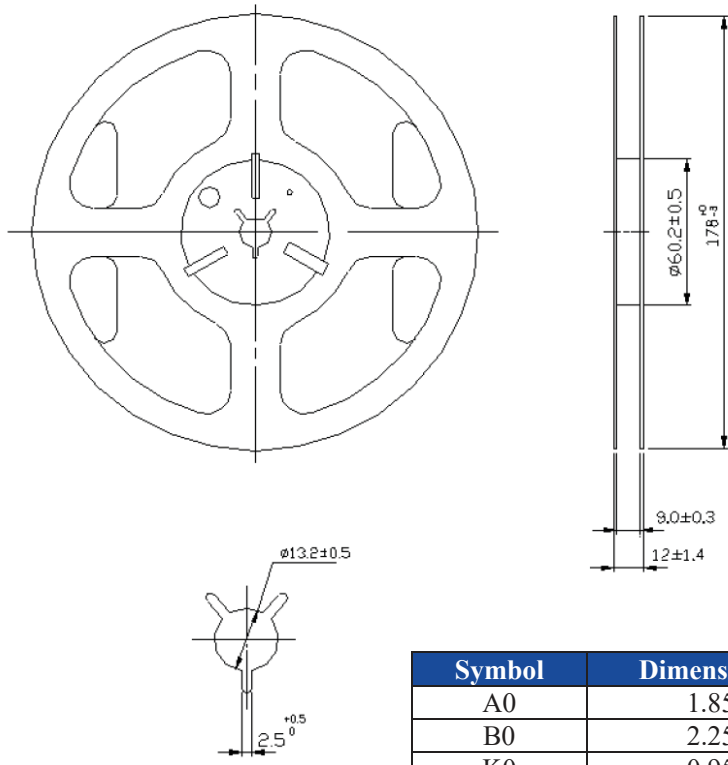
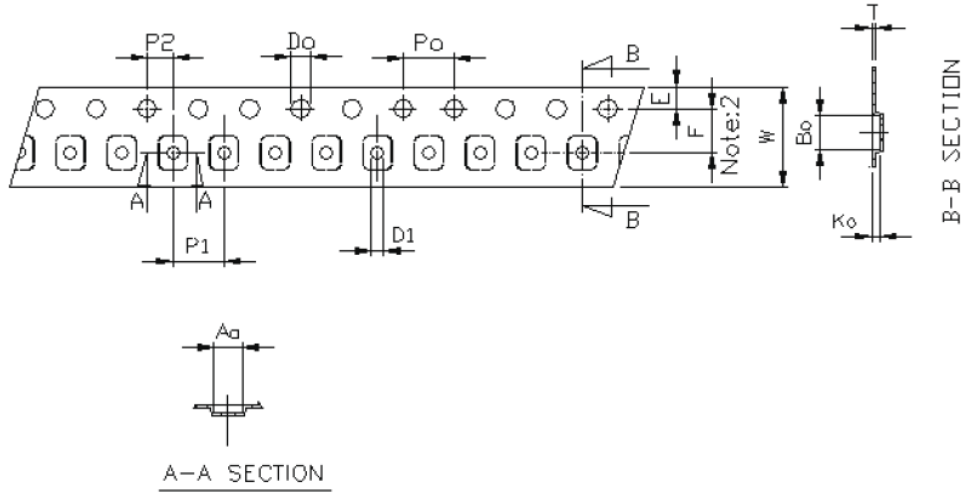
2.0 x 1.6 x 0.7mm

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Pb RoHS/RoHS II Compliant

TAPE & REEL:

T= Tape and reel (1,000pcs/reel)
T3= Tape and reel (3,000pcs/reel)



| 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 |

Dimensions: mm

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