

# 2.5V CMOS Compatible SMD Crystal Oscillator

ASE2

3.2 x 2.5 x 1.2mm

## ASE2 SERIES



ESD Sensitive



RoHS / RoHS II Compliant

Moisture Sensitivity Level (MSL) -1

### FEATURES:

- Compact and low in height at 1.2mm
- Low current consumption  
2mA typ. for 19.2MHz
- Tri state function
- Suitable for RoHS reflow
- Tight stability option  $\pm 20$ ppm for -40 to +85°C
- Seam sealed package assures high reliability

### APPLICATIONS:

- CCD clock for VTR camera
- Equipment connected to PC or PC cards
- Wireless communication

### STANDARD SPECIFICATIONS:

| Parameters                  | Minimum                                                                       | Typical | Maximum  | Units | Notes              |
|-----------------------------|-------------------------------------------------------------------------------|---------|----------|-------|--------------------|
| Frequency Range             | 0.625                                                                         |         | 156.25   | MHz   |                    |
| Operating Temperature       | -10                                                                           |         | +70      | °C    | STD (See options)  |
| Storage Temperature         | -55                                                                           |         | +125     | °C    |                    |
| Overall Frequency Stability | -100                                                                          |         | +100     | ppm   | See options        |
| Supply Voltage (Vdd)        | +2.375                                                                        | 2.5     | +2.625   | V     |                    |
| Supply Current (Idd)        |                                                                               | 2       | 8        | mA    | 0.625 ~ 19.99 MHz  |
|                             |                                                                               | 3       | 8        |       | 20.00 ~ 31.99 MHz  |
|                             |                                                                               | 5       | 15       |       | 32.00 ~ 59.99 MHz  |
|                             |                                                                               | 12      | 25       |       | 60.00 ~ 125.00 MHz |
|                             |                                                                               | 15      | 25       |       | 125.01 ~ 156.25MHz |
| Symmetry @ 1/2Vdd           | 45                                                                            |         | 55       | %     | 0.625 ~ 89.999 MHz |
|                             | 40                                                                            |         | 60       |       | 90.00 ~ 156.25 MHz |
| Rise and Fall Time (Tr/Tf)  |                                                                               | 3       | 5        | ns    | 0.625 ~ 19.99 MHz  |
|                             |                                                                               | 3       | 5        |       | 20.00 ~ 31.99 MHz  |
|                             |                                                                               | 3       | 5        |       | 32.00 ~ 59.99 MHz  |
|                             |                                                                               | 3       | 5        |       | 60.00 ~ 125.00 MHz |
|                             |                                                                               | 3       | 5        |       | 125.01 ~ 156.25MHz |
| Output Load                 |                                                                               |         | 15       | pF    | CMOS               |
| Output Voltage (VOH)        | 0.9* Vdd                                                                      |         |          | V     |                    |
| Output Voltage (VOL)        |                                                                               |         | 0.1* Vdd | V     |                    |
| Start-up Time               |                                                                               | 0.6     | 3        | ms    | 0.625 ~ 19.99 MHz  |
|                             |                                                                               | 0.6     | 3        |       | 20.00 ~ 31.99 MHz  |
|                             |                                                                               | 0.6     | 3        |       | 32.00 ~ 59.99 MHz  |
|                             |                                                                               | 1.3     | 2        |       | 60.00 ~ 125.00 MHz |
|                             |                                                                               | 1.3     | 2        |       | 125.01 ~ 156.25MHz |
| Tri-state function          | "1" (VIH $\geq$ 0.7*Vdd) or Open: Oscillation;<br>"0" (VIL $<$ 0.3*Vdd): Hi Z |         |          |       |                    |
| RMS Jitter:                 |                                                                               | 2       | 5        | ps    |                    |
| Aging at 25°C (first year)  | -5                                                                            |         | +5       | ppm   |                    |
| Stand-by Current:           |                                                                               |         | 10       | μA    |                    |

### OPTIONS & PART IDENTIFICATION: (Left blank if standard)

ASE2 -  MHz -  -  -

| Frequency in MHz |
|------------------|
| e.g. 0.625MHz    |
| 24.576MHz        |
| 14.31818MHz      |
| 26.000MHz        |
| 156.25MHz        |

| Operating Temp.  |
|------------------|
| I: 0°C ~ +50°C   |
| D: -10°C ~ +60°C |
| E: -20°C ~ +70°C |
| F: -30°C ~ +70°C |
| N: -30°C ~ +85°C |
| L: -40°C ~ +85°C |

Contact ABRACON for wider temperature range.

| Overall Freq. Stability |
|-------------------------|
| J(*): $\pm 20$ ppm      |
| R: $\pm 25$ ppm         |
| K: $\pm 30$ ppm         |
| H: $\pm 35$ ppm         |
| B: $\pm 40$ ppm         |
| C: $\pm 50$ ppm         |

\*: Temp options I, D, E, and -10°C to + 70°C only

| Packaging       |
|-----------------|
| Blank: Bulk     |
| T: 1000pcs/Reel |

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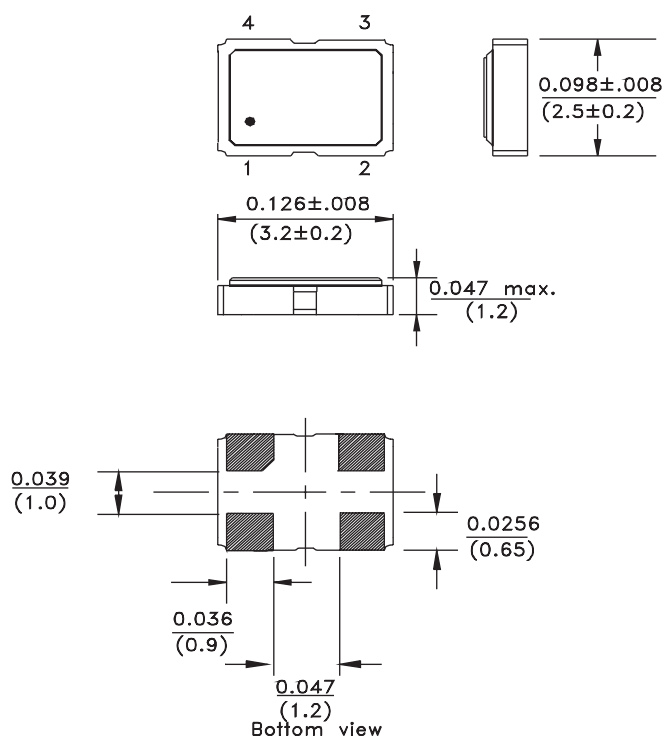
ASE2 SERIES

 RoHS / RoHS II Compliant

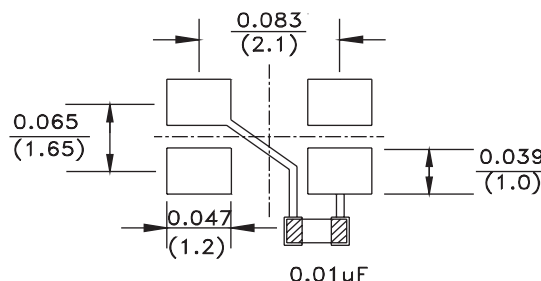


3.2 x 2.5 x 1.2mm

## OUTLINE DRAWING:



Recommended land pattern



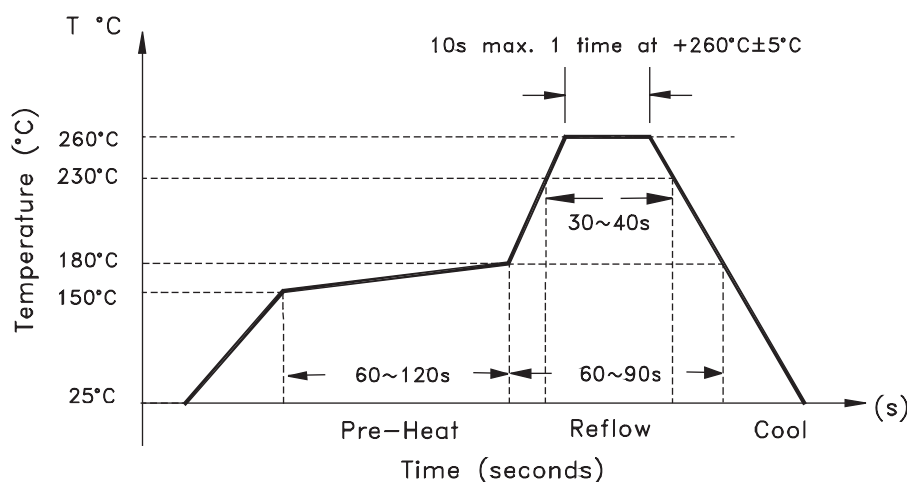
Note:

1. The outline package configuration varies with frequency range. Electrical properties, pin configuration, and land pattern are the same.
2. Recommend using an approximately  $0.01\mu F$  bypass capacitor between Pin 2 and Pin 4.

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

Dimensions: Inches (mm)

## REFLOW PROFILE



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RoHS / RoHS II Compliant

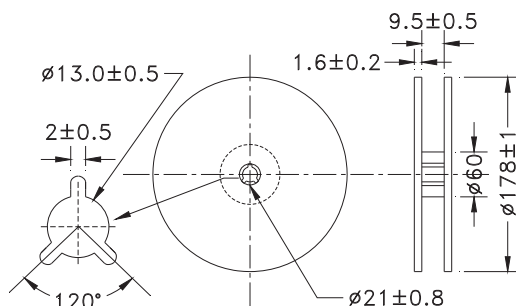
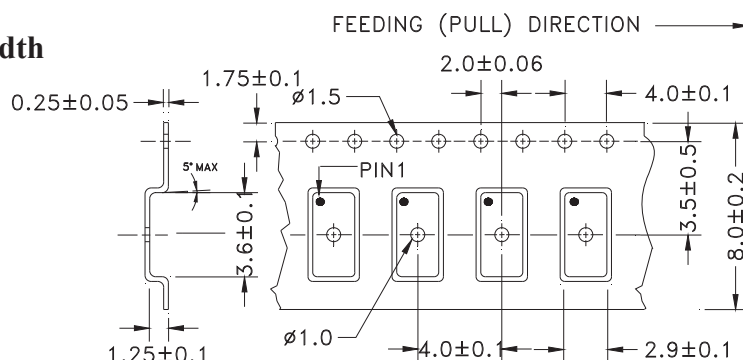


3.2 x 2.5 x 1.2mm

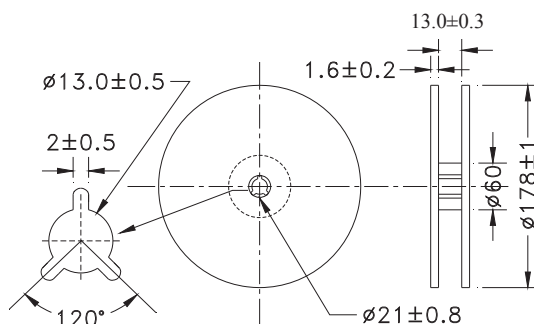
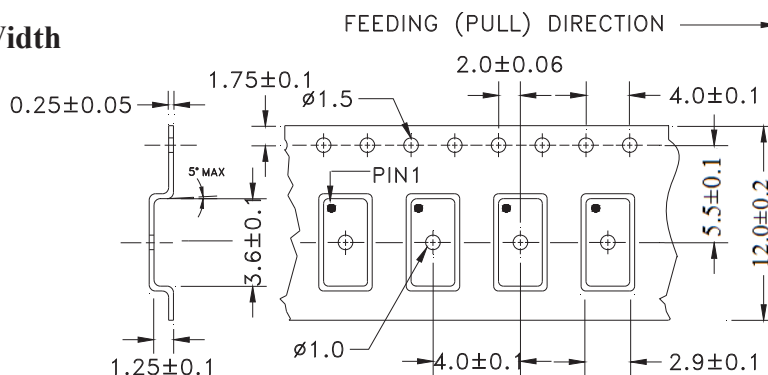
## TAPE & REEL:

T: 1000pcs/reel

8mm Tape Width



12mm Tape Width



Dimensions: mm



Need a test socket for the ASE2 Series? To view compatible **PRECISION TEST & BURN-IN SOCKETS** or these parts, [click here](#).

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