# 3.3V CMOS SMD Crystal Oscillator

## ASE SERIES

Pb RoHS/RoHS II compliant

**Moisture Sensitivity Level (MSL) –1**

3.2 x 2.5 x 1.2mm

## FEATURES:

• Low height 1.2mm max
• Tri-state function
• Low current consumption
  30mA max for 200MHz
• Low RMS jitter 5ps max
• Suitable for RoHS reflow
• Available for tight stability option

## APPLICATIONS:

• CCD clock for VTR camera
• Equipment connected to PC or PC cards
• PDA, wireless communication.
• Laptop, SSD (Solid State Drive)

## STANDARD SPECIFICATIONS:

| Parameters | Minimum | Typical | Maximum | Units | Notes |
|---|---|---|---|---|---|
| Frequency Range | 0.625 | | 200 | 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) | +3.135 | 3.3 | +3.465 | V | |
| Supply Current (Idd) | | 2.5 | 7 | mA | 0.5 ~ 20 MHz |
| | | 4.4 | 13 | | 20.1 ~ 40.0 MHz |
| | | 6.5 | 19 | | 40.01 ~ 60.0 MHz |
| | | 12.7 | 24 | | 60.01 ~ 75.0 MHz |
| | | 7.4 | 20 | | 75.01 ~ 80.0 MHz |
| | | 7.4 | 25 | | 80.01 ~ 133.0MHz |
| | | 11.7 | 30 | | 133.01 ~ 200.0 MHz |
| Symmetry @ 1/2Vdd | 45 | 50 | 55 | % | 0.5 ~ 80.0MHz |
| | 40 | 50 | 60 | | 80.01 ~ 200.0MHz |
| Rise and Fall Time (Tr/Tf) | | 2.5 | 4.0 | ns | 0.5 ~ 20 MHz |
| | | 2.4 | 4.0 | | 20.1 ~ 40.0 MHz |
| | | 2.4 | 4.0 | | 40.01 ~ 60.0 MHz |
| | | 2.3 | 4.0 | | 60.01 ~ 75.0 MHz |
| | | 1.5 | 4.0 | | 75.01 ~ 133.0 MHz |
| | | 1.9 | 4.0 | | 133.01 ~ 200.0 MHz |
| Output Load | | | 15 | pF | CMOS |
| Output Voltage (VOH) | 0.9* Vdd | | | V | |
| Output Voltage (VOL) | | | 0.1* Vdd | V | |
| Start-up Time | | 1 | 2.0 | ms | 0.5 ~ 20 MHz |
| | | 1 | 2.0 | | 20.1 ~ 40.0 MHz |
| | | 1 | 2.0 | | 40.01 ~ 60.0 MHz |
| | | 1 | 2.0 | | 60.01 ~ 75.0 MHz |
| | | 1.2 | 2.0 | | 75.01 ~ 133.0 MHz |
| | | 1.5 | 2.0 | | 133.01 ~ 200.0 MHz |
| Tri-state function (Stand-by) | "1" (VIH≥0.7*Vdd) or Open: Oscillation; "0" (VIL<0.3*Vdd) : No oscillation/Hi Z | | | | |
| Peak to Peak Jitter | | 28 | | ps | Reference only. Contact ABRACON for the Jitter |
| RMS Jitter: | | 3.2 | 5 | ps | 0.5 ~ 20 MHz |
| | | 3.2 | 5 | | 20.1 ~ 40.0 MHz |
| | | 3.2 | 5 | | 40.01 ~ 60.0 MHz |
| | | 3.2 | 5 | | 60.01 ~ 75.0 MHz |
| | | 2.2 | 5 | | 75.01 ~ 133.0 MHz |
| | | 2.2 | 5 | | 133.01 ~ 200.0 MHz |
| Aging at 25°C (first year) | -3 | | +3 | ppm | |
| Stand-by Current: | | | 10 | µA | |

ABRACON CORPORATION

# 3.3V CMOS SMD Crystal Oscillator

## ASE SERIES

**Pb** | RoHS/RoHS II compliant

ASE

3.2 x 2.5 x 1.2mm

➢ **OPTIONS & PART IDENTIFICATION:** (Left blank if standard)

ASE - ☐ MHz - ☐ - ☐ - ☐

| Frequency in MHz |
|---|
| e.g. 0.625MHz |
| 24.576MHz |
| 14.31818MHz |
| 26.000MHz |
| 200.000MHz |

| 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(*): ±20ppm |
| R: ±25ppm |
| K: ±30ppm |
| H: ±35ppm |
| B: ±40ppm |
| C: ±50ppm |

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

| Packaging |
|---|
| Blank: Bulk |
| T: 1000pcs/Reel |
| T2: 250pcs/Reel |
| T3: 3000pcs/Reel |

➢ **OUTLINE DIMENSIONS:**



0.098±.008
(2.5±0.2)

0.126±.008
(3.2±0.2)

0.047max
(1.2)

0.039
(1.0)

0.0256
(0.65)

0.036
(0.9)

0.047
(1.2)
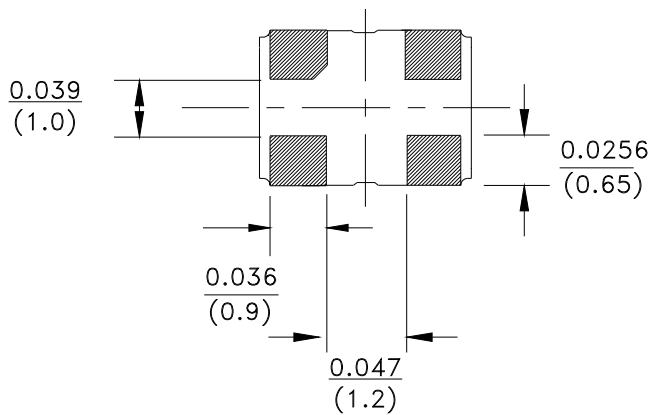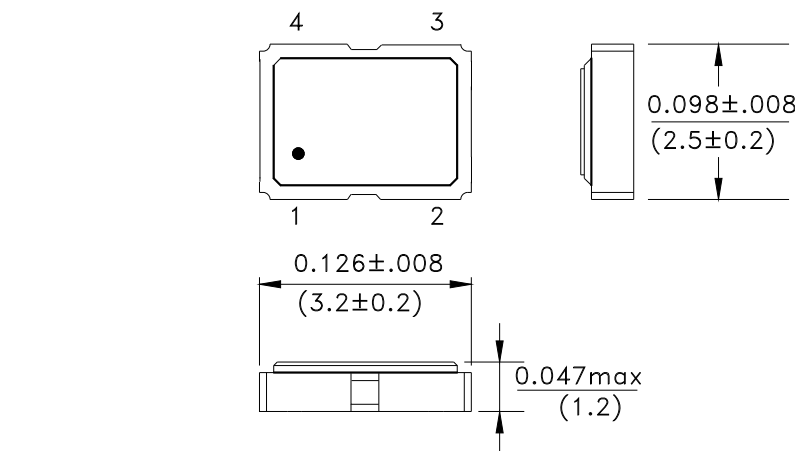
Bottom view

Recommended land pattern

0.083
(2.10)

0.065
(1.65)

0.051
(1.3)

0.043
(1.1)
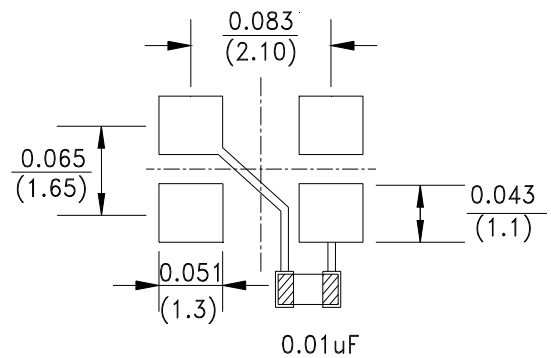
0.01uF

| Pin | Function |
|---|---|
| 1 | Tri-State (STBY) |
| 2 | GND/Case |
| 3 | Output |
| 4 | Vdd |

Note1: Recommend using an approximately 0.01uF
bypass capacitor between PIN 2 and 4.

Note2: The outline package configuration varies with
frequency range. Electrical properties, pin
configuration, and land pattern are the same.

**Dimensions: inches (mm)**

➢ **REFLOW PROFILE:**



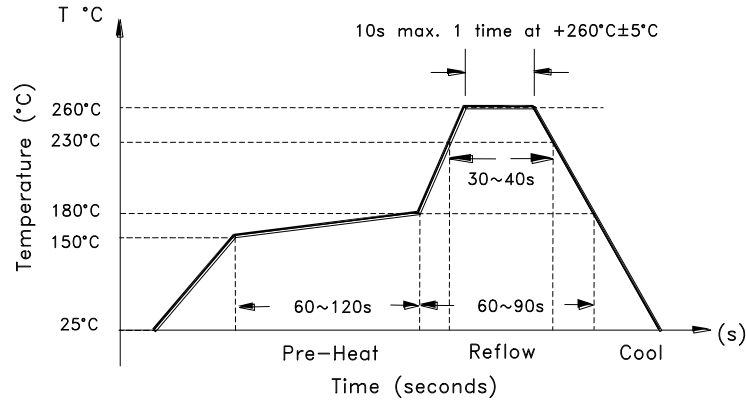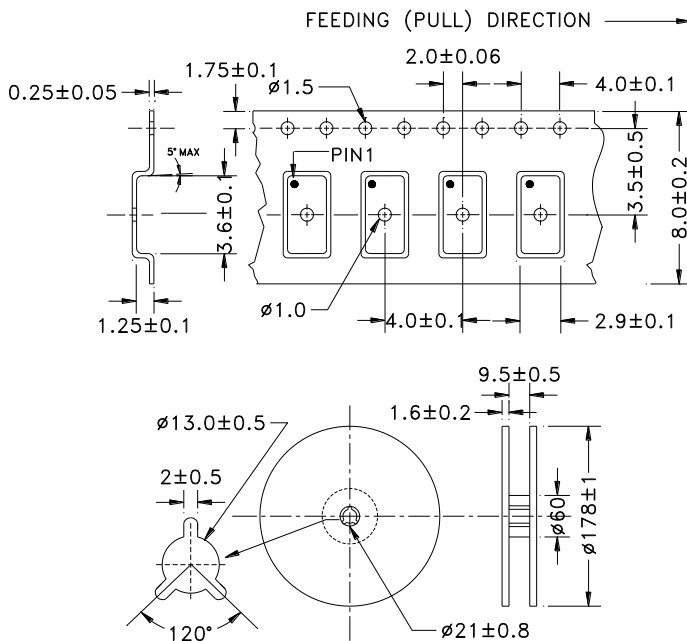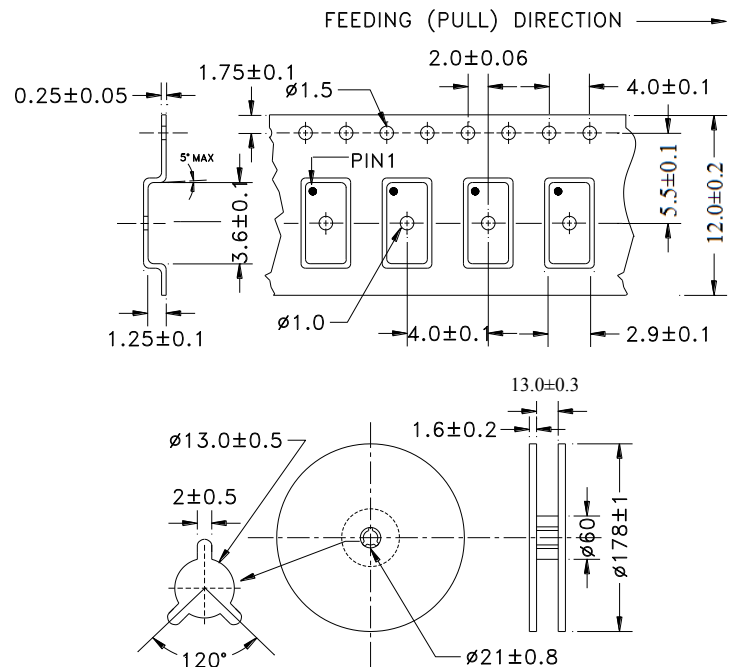➢ **TAPE & REEL:**

**T: 1000pcs/reel**
**T2: 250pcs/reel**
**T3: 3000pcs/reel**

### 8mm Tape Width



### 12mm Tape Width



**Dimensions: mm**

Need a test socket for the ASE Series? To view compatible **PRECISION TEST & BURN-IN SOCKETS** for these parts, **click here.**

# Mouser Electronics

Authorized Distributor

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ABRACON:

  ASE-48.000MHZ-ET   ASE-32.000MHZ-ET   ASE-1.8432MHz-ET   ASE-80.000MHz-ET   ASE-22.000MHZ-ET   ASE-10.000MHz-ET   ASE-11.0592MHz-ET   ASE-13.500MHZ-ET   ASE-66.000MHz-ET   ASE-33.000MHZ-ET   ASE-75.000MHz-ET   ASE-33.333MHZ-ET   ASE-24.576MHZ-ET   ASE-24.000MHZ-ET   ASE-66.666MHZ-ET   ASE-50.000MHZ-ET   ASE-7.3728MHz-ET   ASE-8.000MHz-ET   ASE-40.000MHZ-ET   ASE-20.000MHz-ET   ASE-27.000MHZ-ET   ASE-3.6864MHz-ET   ASE-4.000MHz-ET   ASE-60.000MHZ-ET   ASE-25.000MHz-ET   ASE2-44.000MHz-ET   ASE-12.500MHZ-ET   ASE-30.000MHZ-ET   ASE-12.000MHZ-ET   ASE-1.544MHZ-LR-T   ASE-1.8432MHZ-LR-T   ASE-10.000MHZ-LR-T   ASE-11.0592MHZ-LR-T   ASE-12.000MHZ-LR-T   ASE-14.31818MHZ-LR-T   ASE-14.7456MHZ-LR-T   ASE-18.432MHZ-LR-T   ASE-19.200MHZ-LR-T   ASE-20.000MHZ-LR-T   ASE-24.000MHZ-LR-T   ASE-24.576MHZ-LR-T   ASE-25.000MHZ-LR-T   ASE-26.000MHZ-LR-T   ASE-27.000MHZ-LR-T   ASE-29.4912MHZ-LR-T   ASE-3.6864MHZ-LR-T   ASE-30.000MHZ-LR-T   ASE-32.000MHZ-LR-T   ASE-33.000MHZ-LR-T   ASE-33.333MHZ-LR-T   ASE-4.000MHZ-LR-T   ASE-44.000MHZ-LR-T   ASE-48.000MHZ-LR-T   ASE-50.000MHZ-LR-T   ASE-60.000MHZ-LR-T   ASE-7.3728MHZ-LR-T   ASE-75.000MHZ-LR-T   ASE-8.000MHZ-LR-T   ASE-80.000MHZ-LR-T   ASE-25.000MHZ-LC-T   ASE-48.000MHZ-LC-T   ASE-32.000MHZ-LC-T   ASE-4.000MHZ-LC-T   ASE-8.000MHZ-LC-T   ASE-44.000MHZ-LC-T   ASE-30.000MHZ-LC-T   ASE-7.3728MHZ-LC-T   ASE-33.333MHZ-LC-T   ASE-33.000MHZ-LC-T   ASE-14.31818MHZ-LC-T   ASE-29.4912MHZ-LC-T   ASE-14.7456MHZ-LC-T   ASE-11.0592MHZ-LC-T   ASE-60.000MHZ-LC-T   ASE-24.576MHZ-LC-T   ASE-1.8432MHZ-LC-T   ASE-10.000MHZ-LC-T   ASE-24.000MHZ-LC-T   ASE-50.000MHZ-LC-T   ASE-18.432MHZ-LC-T   ASE-27.000MHZ-LC-T   ASE-20.000MHZ-LC-T   ASE-12.000MHZ-LC-T   ASE-40.000MHZ-LC-T   ASE-12.500MHZ-LC-T   ASE-13.500MHz-LC-T   ASE-22.000MHZ-LC-T   ASE-14.31818MHz-C-T3   ASE-30.000MHz-C-T3   ASE-1.8432MHz-C-T3   ASE-19.200MHz-C-T3   ASE-24.576MHz-C-T3   ASE-25.000MHz-C-T3   ASE-38.400MHz-C-T3   ASE-12.000MHz-C-T3   ASE-26.000MHz-C-T3   ASE-48.000MHz-C-T3   ASE-33.333MHz-E-T   ASE-1.8432MHZ-L-R-T   ASE-29.4912MHZ-L-C-T