

CONTINUOUS VOLTAGE SMD CRYSTAL OSCILLATOR

ASEDV

Request Samples



Check Inventory



ESD Sensitive

3.2 x 2.5 x 1.2mm

RoHS/RoHS II Compliant

MSL Level = N/A

Features

- Continuous Vdd operation from 1.6 V ~ 3.6 V
- Optimized for low current consumption
- Output Enable/Start & Disable/Stop function
- Output waveform CMOS/HCMOS/LVCMOS compatible
- Hermetically seam-sealed ceramic package

Applications

- Portable & wearable electronics
- Internet of Things (IoT)
- Consumer electronics
- Industrial control & automation
- Mobile communication

Electrical Specifications

| Parameters | Min. | Typ. | Max. | Units | Notes |
|--|---|---------|---------|-------|-------------------------|
| Frequency Range | 1 | | 160 | MHz | |
| Operating Temperature Range | -40 | | +85 | °C | See options |
| Storage Temperature Range | -55 | | +125 | °C | |
| Overall Frequency Stability ^[Note 1] | -25 | | +25 | ppm | See options |
| Supply Voltage (Vdd) | 1.6 | | 3.6 | V | |
| Tri-state function | “1” (VIH≥0.7*Vdd) or Open: Oscillation; “0” (VIL<0.3*Vdd): No Oscillation/Hi Z | | | V | |
| Output Load | | | 15 | pF | CMOS |
| Output Voltage | V _{OH} | 0.9*Vdd | | V | |
| | V _{OL} | | 0.1*Vdd | | |
| Aging 1 year @25°C± 3°C | -3.0 | | +3.0 | ppm | |
| Aging 5 years @25°C± 3°C | -5.0 | | +5.0 | ppm | |
| Symmetry @ ½ Vdd | 45 | 50 | 55 | % | |
| Start-up Time | | | 10.0 | ms | |
| Rise and Fall Time (Tr/Tf) @10%Vdd-90%Vdd, 15pF load | Vdd = 1.8V to 3.6V | | 8.0 | ns | 1MHz ≤ F ≤ 19.999MHz |
| | | | 6.0 | | 20MHz ≤ F ≤ 39.999MHz |
| | | | 5.0 | | 40MHz ≤ F ≤ 69.999MHz |
| | | | 5.0 | | 70MHz ≤ F ≤ 99.999MHz |
| | | | 4.0 | | 100MHz ≤ F ≤ 129.999MHz |
| | | | 3.0 | | 130MHz ≤ F ≤ 160MHz |
| | Vdd = 1.6V | | 10.0 | | 1MHz ≤ F ≤ 19.999MHz |
| | | | 8.0 | | 20MHz ≤ F ≤ 39.999MHz |
| | | | 6.0 | | 40MHz ≤ F ≤ 69.999MHz |
| | | | 6.0 | | 70MHz ≤ F ≤ 99.999MHz |
| | | | 5.0 | | 100MHz ≤ F ≤ 129.999MHz |
| | | | 5.0 | | 130MHz ≤ F ≤ 160MHz |
| | | | 5.0 | | |
| | | | 5.0 | | |
| RMS Period Jitter @25°C± 3°C | Vdd = 3.0V to 3.6V | | 5.0 | ps | |
| | Vdd = 1.6V to 2.5V | | 7.0 | | |
| RMS Phase Jitter @25°C± 3°C (10 - 39MHz: 12kHz to 5MHz) (>39MHz: 12kHz to 20MHz) | | | < 1.0 | ps | |
| Disable Current | | | 10.0 | µA | |

*Note 1: Overall frequency stability includes initial frequency tolerance @25°C± 3°C and stability over the operating temperature range.



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MSL Level = N/A

Electrical Specifications *continued*

| Parameters | Min. | Typ. | Max. | Units | Notes |
|--|------|------|-------------------------|-------|-------------------------|
| Supply Current (I _{dd}) into 15pF Load @25°C± 3°C @ V _{dd} =3.3V | | | 2.0 | mA | 1MHz ≤ F < 5.999MHz |
| | | | 2.0 | | 6MHz ≤ F < 9.999MHz |
| | | | 3.0 | | 10MHz ≤ F < 19.999MHz |
| | | | 4.0 | | 20MHz ≤ F < 29.999MHz |
| | | | 5.0 | | 30MHz ≤ F < 39.999MHz |
| | | | 5.0 | | 40MHz ≤ F < 45.999MHz |
| | | | 5.0 | | 46MHz ≤ F < 48.999MHz |
| | | | 6.0 | | 49MHz ≤ F < 50.999MHz |
| | | | 8.0 | | 51MHz ≤ F < 54.999MHz |
| | | | 8.0 | | 55MHz ≤ F < 60.999MHz |
| | | | 12.5 | | 61MHz ≤ F < 75.999MHz |
| | | | 14.5 | | 76MHz ≤ F < 80.999MHz |
| | | | 14.5 | | 81MHz ≤ F < 105.999MHz |
| | | | 15.5 | | 106MHz ≤ F < 119.999MHz |
| | | | 15.5 | | 120MHz ≤ F < 130.999MHz |
| | | 18.0 | 131MHz ≤ F < 139.999MHz | | |
| | | 18.0 | 140MHz ≤ F < 149.999MHz | | |
| | | 18.0 | 150MHz ≤ F < 156.999MHz | | |
| | | 19.0 | 157MHz ≤ F < 160MHz | | |
| Supply Current (I _{dd}) into 15pF Load @25°C± 3°C @ V _{dd} =2.5V | | | 1.3 | mA | 1MHz ≤ F < 5.999MHz |
| | | | 1.3 | | 6MHz ≤ F < 9.999MHz |
| | | | 2.0 | | 10MHz ≤ F < 19.999MHz |
| | | | 3.0 | | 20MHz ≤ F < 29.999MHz |
| | | | 3.5 | | 30MHz ≤ F < 39.999MHz |
| | | | 4.5 | | 40MHz ≤ F < 45.999MHz |
| | | | 4.5 | | 46MHz ≤ F < 48.999MHz |
| | | | 5.0 | | 49MHz ≤ F < 50.999MHz |
| | | | 6.5 | | 51MHz ≤ F < 54.999MHz |
| | | | 7.0 | | 55MHz ≤ F < 60.999MHz |
| | | | 10.0 | | 61MHz ≤ F < 75.999MHz |
| | | | 11.5 | | 76MHz ≤ F < 80.999MHz |
| | | | 11.5 | | 81MHz ≤ F < 105.999MHz |
| | | | 12.5 | | 106MHz ≤ F < 119.999MHz |
| | | | 12.5 | | 120MHz ≤ F < 130.999MHz |
| | | 14.0 | 131MHz ≤ F < 139.999MHz | | |
| | | 14.0 | 140MHz ≤ F < 149.999MHz | | |
| | | 14.0 | 150MHz ≤ F < 156.999MHz | | |
| | | 15.0 | 157MHz ≤ F < 160MHz | | |
| Supply Current (I _{dd}) into 15pF Load @25°C± 3°C @ V _{dd} =1.8V | | | 1.0 | mA | 1MHz ≤ F < 5.999MHz |
| | | | 1.0 | | 6MHz ≤ F < 9.999MHz |
| | | | 1.6 | | 10MHz ≤ F < 19.999MHz |
| | | | 2.2 | | 20MHz ≤ F < 29.999MHz |
| | | | 2.5 | | 30MHz ≤ F < 39.999MHz |
| | | | 3.0 | | 40MHz ≤ F < 45.999MHz |
| | | | 3.5 | | 46MHz ≤ F < 48.999MHz |
| | | | 3.5 | | 49MHz ≤ F < 50.999MHz |
| | | | 3.5 | | 51MHz ≤ F < 54.999MHz |
| | | | 4.0 | | 55MHz ≤ F < 60.999MHz |
| | | | 9.0 | | 61MHz ≤ F < 75.999MHz |
| | | | 9.0 | | 76MHz ≤ F < 80.999MHz |
| | | | 10.0 | | 81MHz ≤ F < 105.999MHz |
| | | | 10.0 | | 106MHz ≤ F < 119.999MHz |
| | | | 10.5 | | 120MHz ≤ F < 130.999MHz |
| | | 10.5 | 131MHz ≤ F < 139.999MHz | | |
| | | 11.5 | 140MHz ≤ F < 149.999MHz | | |
| | | 11.5 | 150MHz ≤ F < 156.999MHz | | |
| | | 11.5 | 157MHz ≤ F < 160MHz | | |



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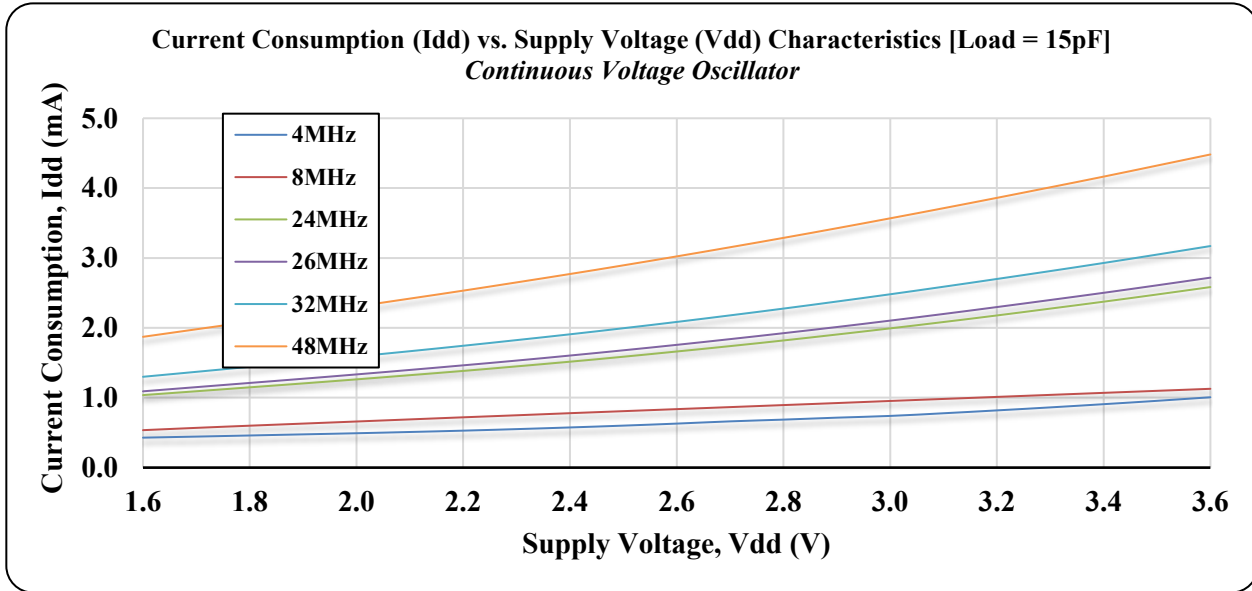
Check Inventory



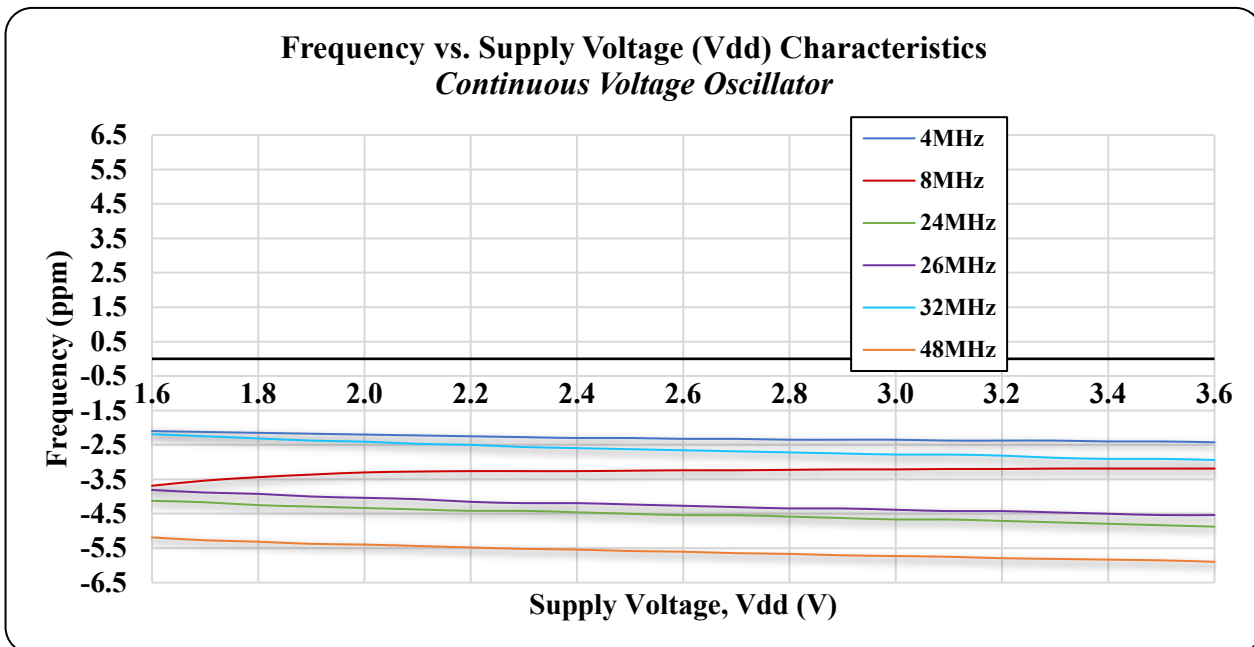
ESD Sensitive

3.2 x 2.5 x 1.2mm
RoHS/RoHS II Compliant
MSL Level = N/A

Typical Current Consumption (I_{dd}) vs. Supply Voltage (V_{dd}) Characteristics @25°C±3°C [Load = 15pF]



Typical Frequency vs. Supply Voltage (V_{dd}) Characteristics @ 25°C±3°C



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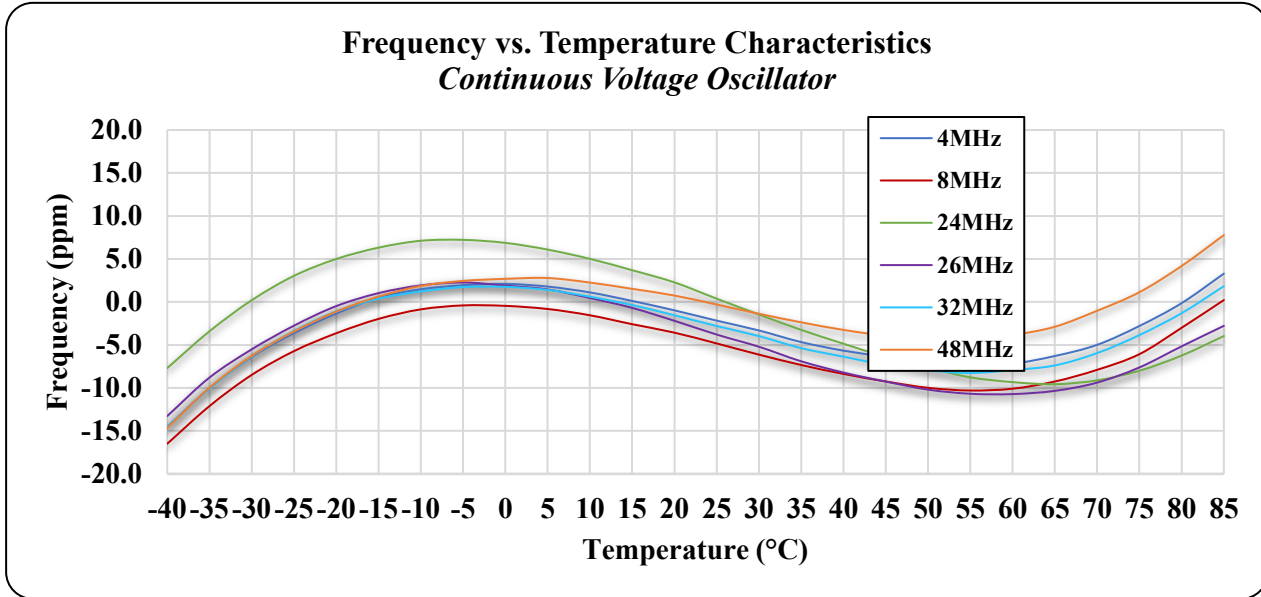
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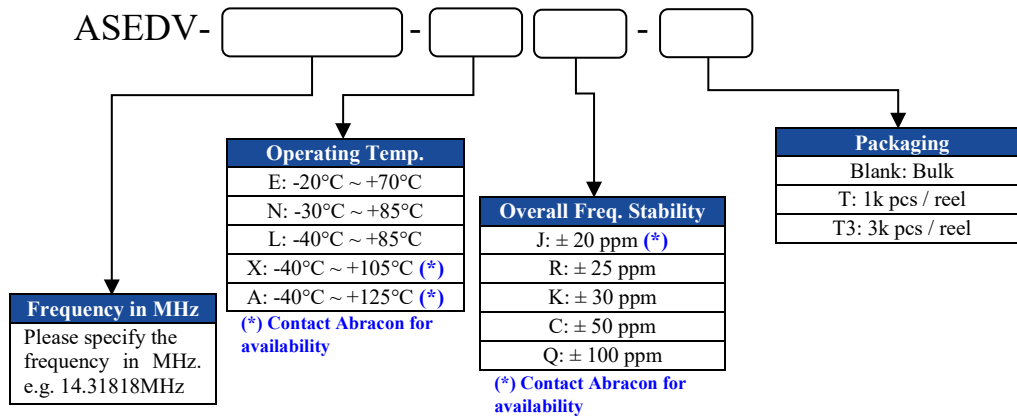
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Typical Frequency vs. Temperature Characteristics



Part Identification



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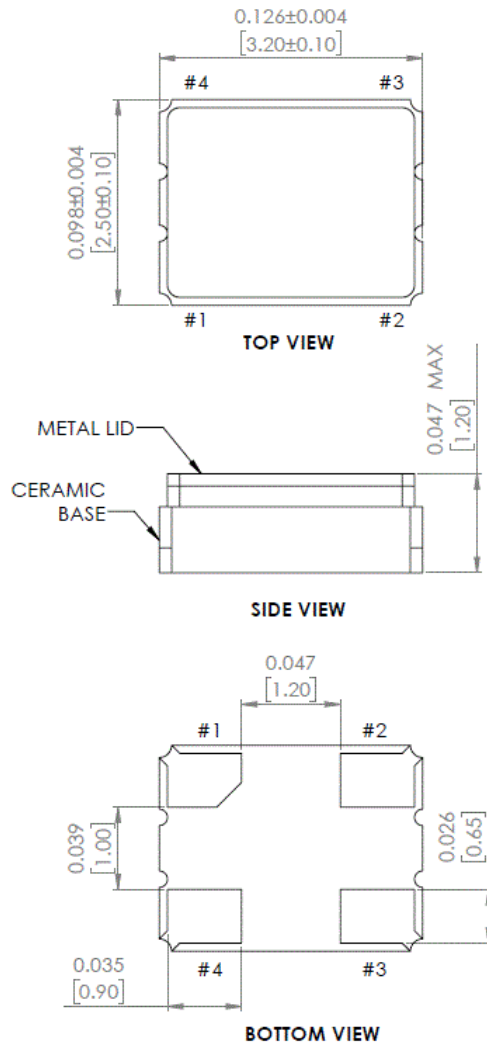
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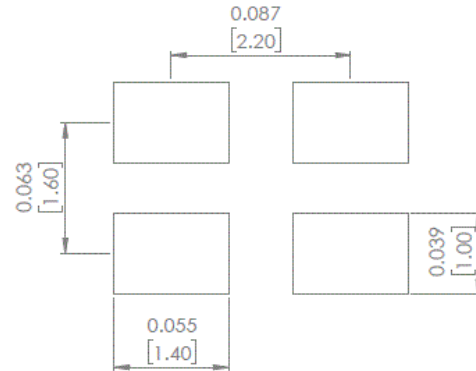
ESD Sensitive

3.2 x 2.5 x 1.2mm
RoHS/RoHS II Compliant
 MSL Level = N/A

Mechanical Dimensions



Recommended Land Pattern



| Pin # | Function |
|-------|-----------|
| 1 | Tri-State |
| 2 | GND |
| 3 | Output |
| 4 | Vdd |

Note: Recommended to use approximately 0.01µF bypass capacitor between PIN 2 and PIN 4

Dimensions: inches (mm)




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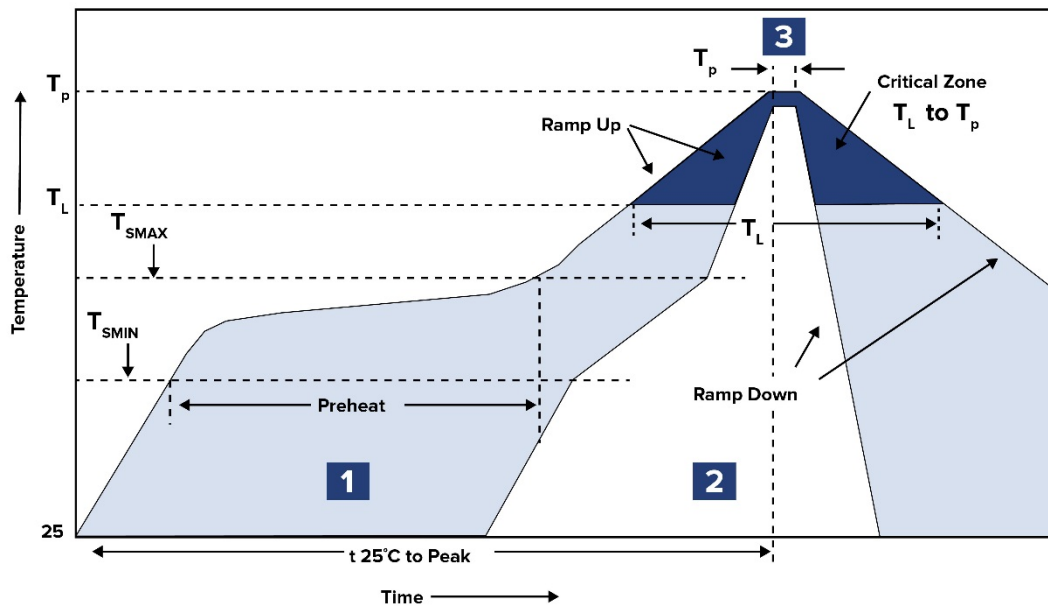
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Reflow Profile



| Zone | Description | Temperature | Time |
|------|-------------|---|---------------|
| 1 | Preheat | $T_{SMIN} \sim T_{SMAX}$ 150°C ~ 200°C | 60 ~ 120 sec. |
| 2 | Reflow | T_L 217°C | 60 ~ 150 sec. |
| 3 | Peak heat | T_P 250°C ~ 260°C | 30 sec. MAX |

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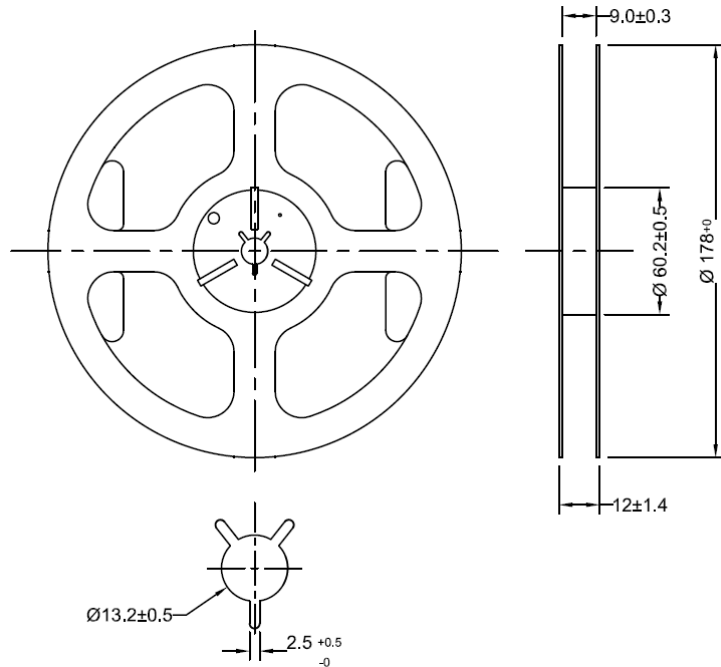
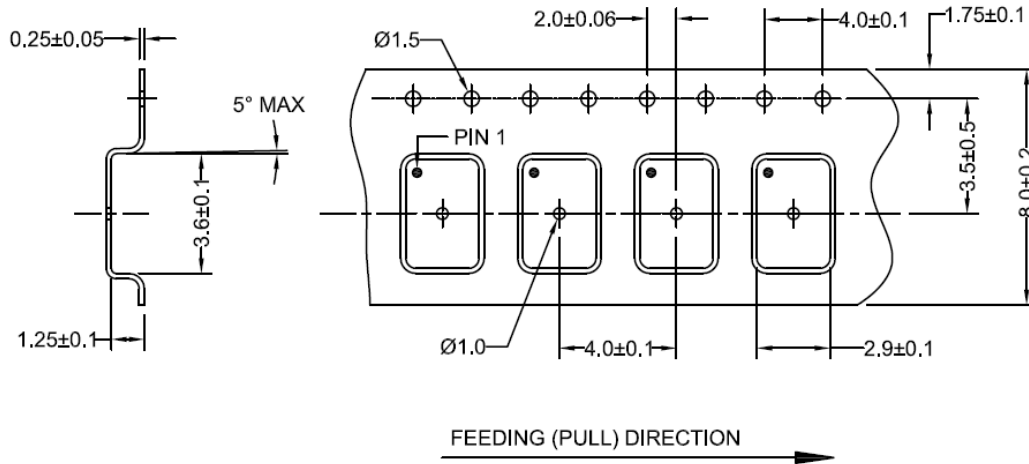
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3.2 x 2.5 x 1.2mm
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MSL Level = N/A

Packaging

T: 1,000pcs/reel

T3: 3,000pcs/reel



Dimensions: inches (mm)

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