

3.3Vdc HCMOS SMD Crystal Clock Oscillator



7.0 x 5.08 x 1.8 mm

ASV SERIES

ESD Sensitive

RoHS/RoHS II compliant

Moisture Sensitivity Level (MSL) – This product is Hermetically Sealed and not Moisture Sensitive - MSL = N/A: Not Applicable

FEATURES:

- HCMOS, 3.3Vdc, 2.5Vdc, & 1.8Vdc options
- Suitable for RoHS reflow
- Seam sealed package assures high reliability
- High output drive capability (up to 50pF)

APPLICATIONS:

- Clock signaling for μ Processors, PC Motherboards & Graphic Cards

STANDARD SPECIFICATIONS:

| Parameters | Minimum | Typical | Maximum | Units | Notes |
|-----------------------------|-----------------|-----------|---------|-------|------------------|
| Frequency Range | 0.312 | | 200 | MHz | |
| Operating Temperature | -10 | | +70 | °C | See options |
| Storage Temperature | -55 | | +125 | °C | |
| Overall Frequency Stability | -100 | | +100 | ppm | See options |
| Supply Voltage (Vdd) | +2.97 | 3.3 | +3.63 | V | See options |
| Supply Current (Idd) | | 2.0 | 10.0 | mA | 0.312 ~ 14.9 MHz |
| | | 3.6 | 15.0 | | 15.0 ~ 29.9 MHz |
| | | 5.6 | 20.0 | | 30.0 ~ 39.9 MHz |
| | | 7.2 | 25.0 | | 40.0 ~ 49.9 MHz |
| | | 13.3 | 30.0 | | 50.0 ~ 59.9 MHz |
| | | 19.0 | 35.0 | | 60.0 ~ 79.9MHz |
| | | 20.2 | 45.0 | | 80.0 ~ 99.9 MHz |
| | | 23.7 | 50.0 | | 100.0 ~ 125.0MHz |
| | | 27.2 | 65.0 | | 125.1 ~ 165 MHz |
| Symmetry @ 1/2Vdd | 40 | 50 | 60 | % | See options |
| Rise and Fall Time (Tr/Tf) | | 3.0 | 5.0 | ns | 0.312 ~ 14.9 MHz |
| | | 2.8 | 4.0 | | 15.0 ~ 29.9 MHz |
| | | 2.6 | 4.0 | | 30.0 ~ 39.9 MHz |
| | | 2.4 | 4.0 | | 40.0 ~ 49.9 MHz |
| | | 2.2 | 4.0 | | 50.0 ~ 59.9 MHz |
| | | 2.2 | 4.0 | | 60.0 ~ 79.9MHz |
| | | 2.0 | 4.0 | | 80.0 ~ 99.9 MHz |
| | | 1.8 | 4.0 | | 100.0 ~ 125.0MHz |
| | | 1.5 | 4.0 | | 125.1 ~ 165 MHz |
| Output Load | | | 15 | pF | See options |
| Output Voltage | V _{OH} | 0.9 x Vdd | | V | |
| | V _{OL} | | 0.4 | V | |

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(Continued)

| Parameters | Minimum | Typical | Maximum | Units | Notes |
|--------------------------------|--|---------|---------|-------|------------------|
| Start-up Time | | 0.4 | 4.0 | ms | 0.312 ~ 14.9 MHz |
| | | 0.4 | 4.0 | | 15.0 ~ 29.9 MHz |
| | | 2.0 | 4.0 | | 30.0 ~ 39.9 MHz |
| | | 1.5 | 4.0 | | 40.0 ~ 49.9 MHz |
| | | 2.9 | 5.0 | | 50.0 ~ 59.9 MHz |
| | | 1.5 | 5.0 | | 60.0 ~ 79.9MHz |
| | | 1.3 | 5.0 | | 80.0 ~ 99.9 MHz |
| | | 1.8 | 5.0 | | 100.0 ~ 125.0MHz |
| | | 2.7 | 5.0 | | 125.1 ~ 165 MHz |
| Tri-state function | "1" ($V_{IH} \geq 0.7 \cdot V_{DD}$) or Open: Oscillation "0" ($V_{IL} < 0.3 \cdot V_{DD}$): Hi Z | | | | |
| Period Jitter One Sigma (RMS): | | 2.5 | | ps | 0.312 ~ 14.9 MHz |
| | | 3.2 | | | 15.0 ~ 29.9 MHz |
| | | 3.2 | | | 30.0 ~ 39.9 MHz |
| | | 3.2 | | | 40.0 ~ 49.9 MHz |
| | | 3.2 | | | 50.0 ~ 59.9 MHz |
| | | 3.2 | | | 60.0 ~ 79.9MHz |
| | | 3.0 | | | 80.0 ~ 99.9 MHz |
| | | 2.9 | | | 100.0 ~ 125.0MHz |
| | | 2.9 | | | 125.1 ~ 165 MHz |
| Aging at 25°C (first year) | -5 | | +5 | ppm | |
| Disable Current | | | 10 | uA | |
| Enable Time | | 3.5 | 5 | ms | |
| Disable Time | | | 100 | ns | |

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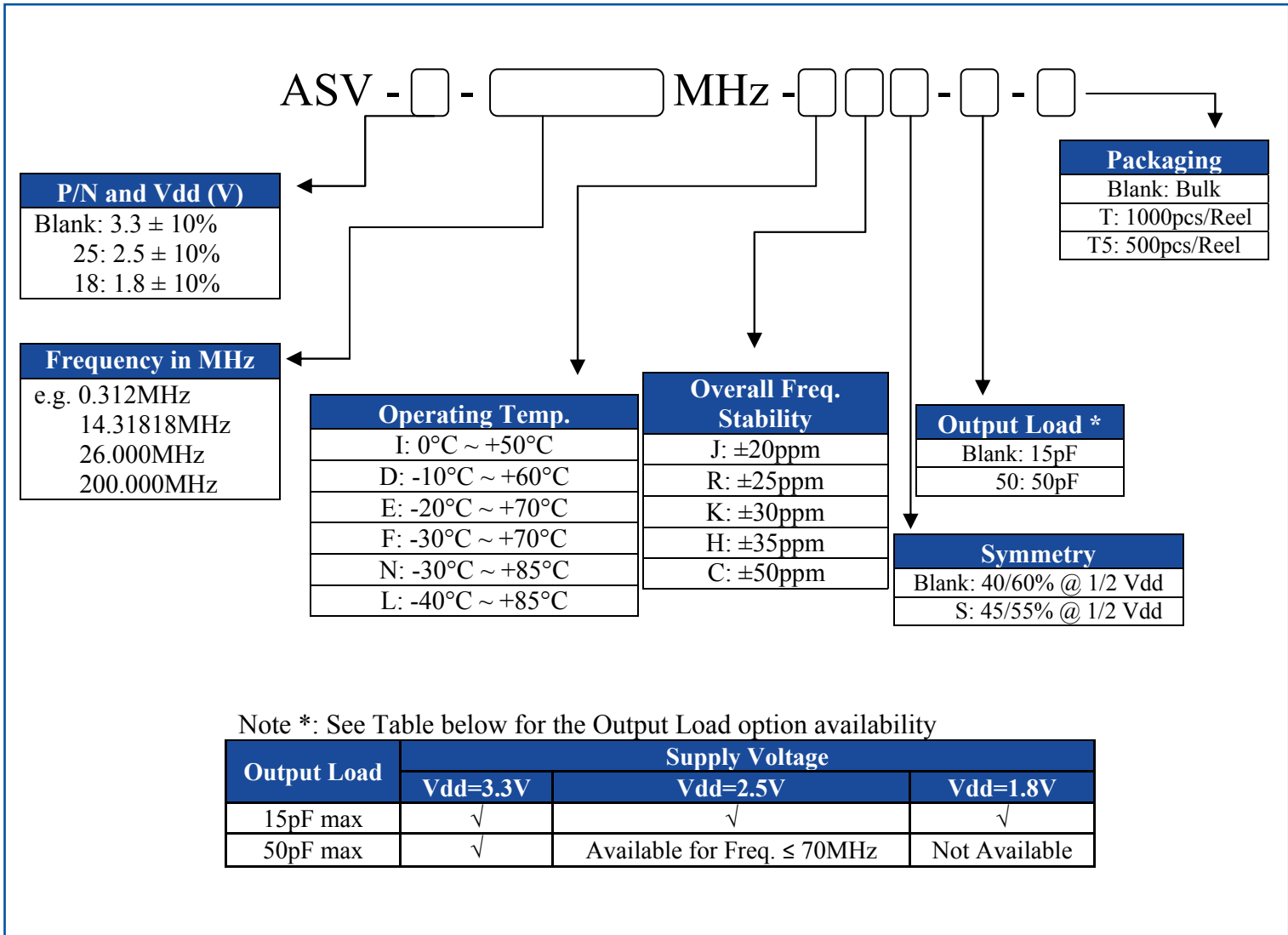
7.0 x 5.08 x 1.8 mm

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



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OUTLINE DIMENSION:

Top view shows pins 1, 2, 3, and 4. Dimensions include a width of $0.275 \pm .008$ (7.0+0.2) and a height of $0.2 \pm .008$ (5.08±0.2).

Side view shows a thickness of 0.071 max. (1.8max.).

Bottom view shows a width of $0.2 \pm .008$ (5.08±0.2) and a distance from the center to the edge of 0.055 (1.4) and 0.024 (0.6). A distance of 0.043 (1.1) is also indicated.

Recommended land pattern shows a square pad with a side length of 0.20 (5.08). The distance from the center to the pad edge is 0.157 (4.0). The pad thickness is 0.079 (2.0). A $0.01 \mu\text{F}$ capacitor is shown connected to the output pin.

| Pin | Function |
|-----|--------------------------|
| 1 | Tri-State Enable/Disable |
| 2 | GND/Case |
| 3 | Output |
| 4 | Vdd |

Dimension: Inches (mm)

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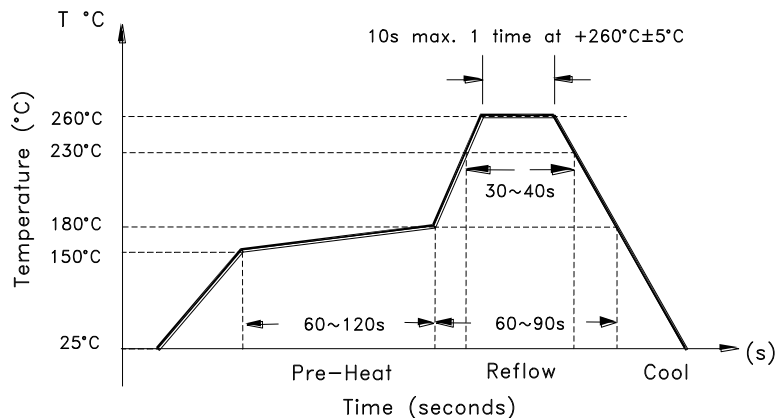
7.0 x 5.08 x 1.8 mm

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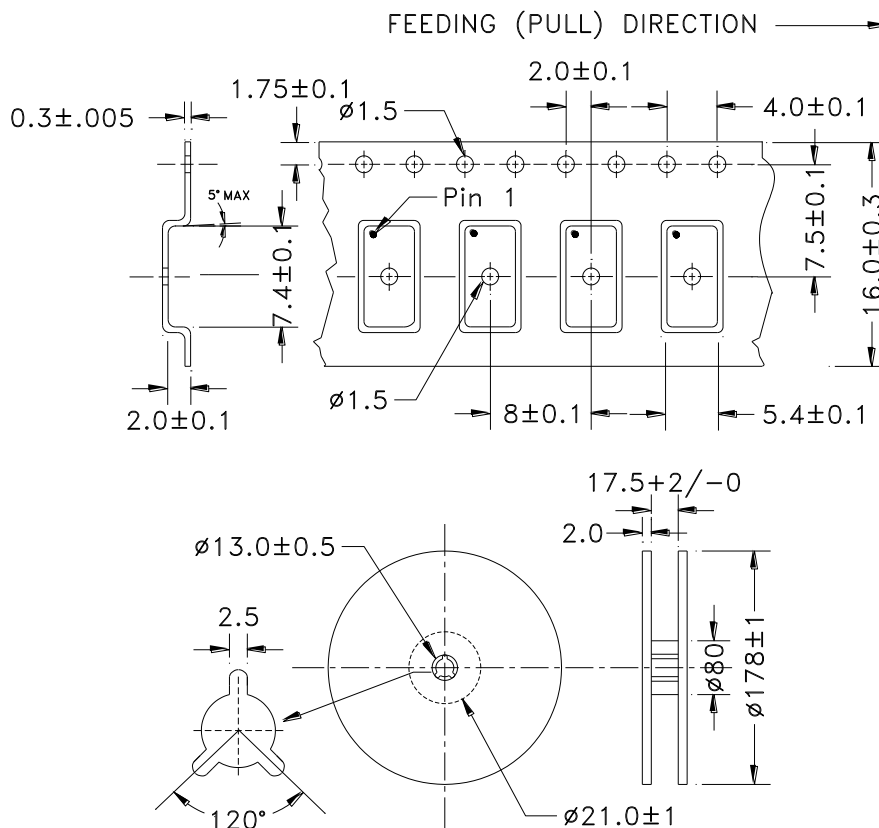
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REFLOW PROFILE:



TAPE & REEL:

T: 1000pcs/reel
T5: 500pcs/reel



Dimension: mm

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