

CMOS/TTL COMPATIBLE VOLTAGE CONTROLLED CRYSTAL OSCILLATOR



7.0 x 5.0 x 1.6 mm

ASVV



**RoHS
Compliant**

FEATURES:

- Low profile (1.6) SMD VCXO
- Tristate functions
- Seam sealed package assures high reliability
- CMOS/TTL output
- Suitable for RoHS compliant reflow process

APPLICATIONS:

- Phase locked loops (PLLs)
- Synthesizers
- Clock Recover, Digital Transmission device
- Digital set-up box
- Computers; Test Equipment

STANDARD SPECIFICATIONS:

| Parameters | | Minimum | Typical | Maximum | Units | Notes |
|---------------------------------------|-----------------|--|-------------|---------|-------|-----------------------|
| Frequency Range: | | 1.0 | ----- | 200 | MHz | |
| Operating Temperature: | | 0 | ----- | +70 | °C | See options |
| Storage Temperature: | | -45 | ----- | +90 | °C | |
| Overall Frequency Stability*: | | -50 | ----- | +50 | ppm | See options |
| Supply Voltage (Vdd): | | 3.135 | 3.3 | 3.465 | V | 3.3V±5% |
| Control Voltage (Vc): | | 0.15 | 1.65 | 3.15 | V | |
| Supply Current (I _{dd}): | | ----- | 1.1 ~ 2.0 | 5.0 | mA | 1.000~11.999 MHz |
| | | ----- | 1.4 ~ 4.0 | 8.0 | | 12.000~26.999 MHz |
| | | ----- | 1.8 ~ 5.0 | 10.0 | | 27.000~39.999 MHz |
| | | ----- | 3.4 ~ 8.0 | 15.0 | | 40.000~57.999 MHz |
| | | ----- | 5.9 ~ 20.0 | 35.0 | | 58.000~99.999 MHz |
| | | ----- | 20.0 ~ 30.0 | 40.0 | | 100.000~200.000 MHz |
| Linearity: | | -10 | ----- | 10 | % | |
| Output Load | | ----- | ----- | 15 | pF | |
| | | ----- | ----- | 5 | TTL | |
| Output Voltage: | V _{OH} | 0.9*Vdd | ----- | ----- | V | |
| | V _{OL} | ----- | ----- | 0.1*Vdd | V | |
| Pullability: | | ±80 | ----- | ----- | ppm | See options |
| Tri-state function (Stand-by) : | | "1" (VIH≥2.2V) or Open: Oscillation "0" (VIH<0.8V) : Hi Z | | | | |
| Aging: | | -3.0 | ----- | +3.0 | ppm | @+25°C First year |
| Symmetry: | | 40 | ----- | 60 | % | |
| Start-up Time : | | ----- | 1.1 ~ 2.0 | 5 | ms | @1/2Vdd (See options) |
| Rise/Fall Time (Tr/Tf): | | ----- | 1.6 ~ 4.0 | 8.0 | ns | 1.000~11.999 MHz |
| | | ----- | 1.0 ~ 3.0 | 6.0 | | 12.000~26.999 MHz |
| | | ----- | 1.4 ~ 2.5 | 5.0 | | 27.000~39.999 MHz |
| | | ----- | 1.1 ~ 2.0 | 4.0 | | 40.000~57.999 MHz |
| | | ----- | 0.7 ~ 2.0 | 3.0 | | 58.000~99.999 MHz |
| | | ----- | 0.9 ~ 1.5 | 3.0 | | 100.000~200.000 MHz |
| Period jitter RMS : | | ----- | 2.0 | 3.5 | ps | 1.000~11.999 MHz |
| | | ----- | 2.0 | 3.5 | | 12.000~26.999 MHz |
| | | ----- | 2.0 | 3.5 | | 27.000~39.999 MHz |
| | | ----- | 2.0 | 3.5 | | 40.000~57.999 MHz |
| | | ----- | 5.0 | 8.0 | | 58.000~99.999 MHz |
| | | ----- | 7.0 | 10.0 | | 100.000~200.000 MHz |
| Phase jitter RMS (12kHz to 20MHz): | | ----- | 0.5 | 1.0 | ps | 1.000~11.999 MHz |
| | | ----- | 0.5 | 1.0 | | 12.000~26.999 MHz |
| | | ----- | 0.5 | 1.0 | | 27.000~39.999 MHz |
| | | ----- | 0.5 | 1.0 | | 40.000~57.999 MHz |
| | | ----- | 4.5 | 5.5 | | 58.000~99.999 MHz |
| | | ----- | 5.0 | 6.0 | | 100.000~200.000 MHz |

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30332 Esperanza, Rancho Santa Margarita, California 92688
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STANDARD SPECIFICATIONS - continued:

| Phase Noise (Typical value): | Offset | 1kHz | 10kHz | 100kHz | dBc |
|---------------------------------|---------------------|--------|--------|--------|-----|
| | 10.000MHz Carrier | -137.8 | -148.4 | -148.3 | |
| | 12.288MHz Carrier | -130.0 | -145.0 | -148.0 | |
| | 16.384 MHz Carrier | -136.1 | -147.9 | -152.2 | |
| | 19.440 MHz Carrier | -133.4 | -147.3 | -151.6 | |
| | 25.000 MHz Carrier | -134.3 | -149.4 | -152.1 | |
| | 32.768 MHz Carrier | -130.6 | -144.6 | -149.7 | |
| | 35.328 MHz Carrier | -120.0 | -143.0 | -150.0 | |
| | 44.736 MHz Carrier | -125.8 | -142.4 | -151.4 | |
| | 55.296 MHz Carrier | -130.4 | -146.0 | -149.0 | |
| | 57.142 MHz Carrier | -105.0 | -130.0 | -117.0 | |
| | 60.000 MHz Carrier | -123.4 | -134.3 | -147.4 | |
| | 100.000 MHz Carrier | -115.0 | -125.0 | -117.0 | |
| | 120.000 MHz Carrier | -108.0 | -123.0 | -116.0 | |
| 125.000 MHz Carrier | -112.6 | -127.1 | -122.3 | | |
| 155.250 MHz Carrier | -108.0 | -120.0 | -113.0 | | |

OPTIONS & PART IDENTIFICATION:

(Left blank if standard)

ASVV - MHz - - - -

Frequency in MHz
Please specify the frequency in MHz.
e.g. 14.31818MHz

Packaging
Blank: Bulk
T: Tape & Reel

Pullability
Blank: ±80ppm
N102: ±100ppm
N122: ±120ppm
N152: ±150ppm

Symmetry
Blank: 40/60% @ 1/2Vdd
S: 45/55% @ 1/2Vdd

| Operating Temperature | Frequency stability (ppm) | | | |
|-----------------------|---------------------------|---------|---------|------------------|
| | ±20 ppm | ±25 ppm | ±30 ppm | ±50 ppm |
| 0°C to 50°C | I20 | I25 | I30 | I50 |
| 0°C to 60°C | B20 | B25 | B30 | B50 |
| -10°C to 60°C | D20 | D25 | D30 | D50 |
| 0°C to 70°C | C20 | C25 | C30 | STD (Left blank) |
| -10°C to 70°C | F20 | F25 | F30 | F50 |
| -20°C to 70°C | E20 | E25 | E30 | E50 |
| -40°C to 85°C | ----- | L25 | L30 | L50 |



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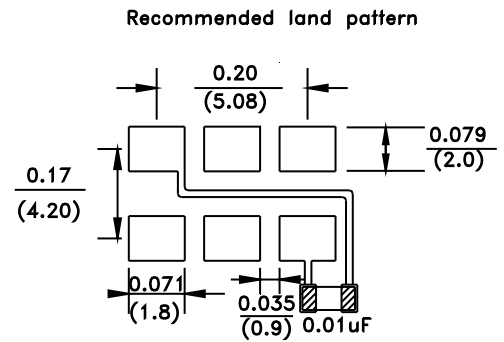
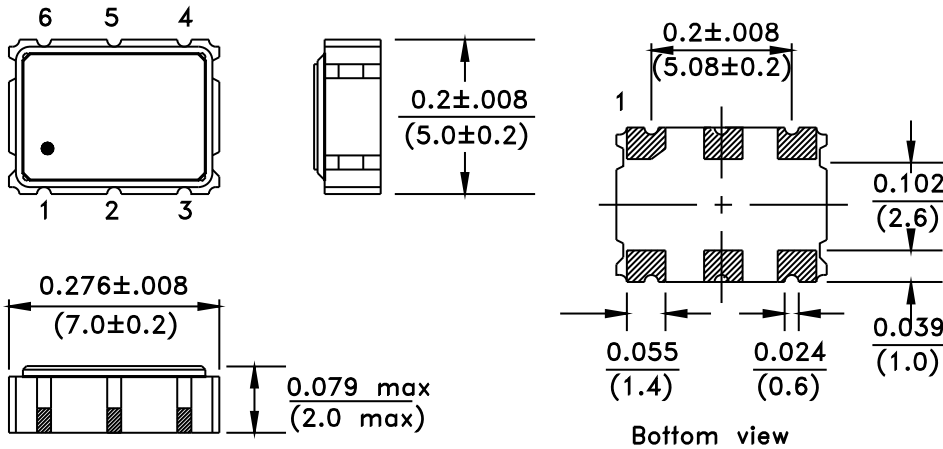
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OUTLINE DRAWING:



| PIN # | Name |
|-------|-----------------|
| 1 | V _c |
| 2 | Tri-state |
| 3 | GND |
| 4 | Output |
| 5 | NC |
| 6 | V _{dd} |

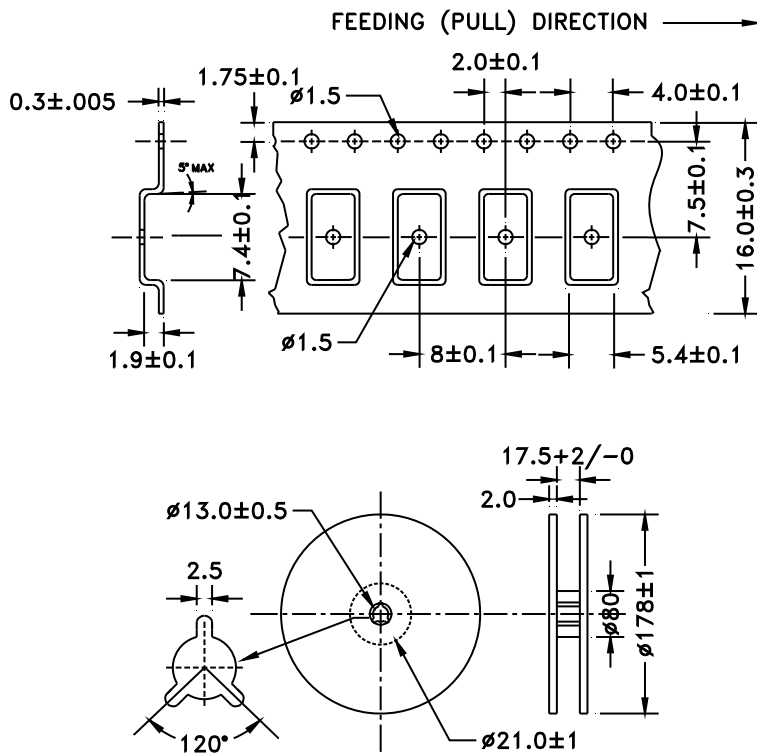
Note 1: Due to the material availability, the chamfer on pin 1 may have different outline.

Note 2: Recommend using an approximately 0.01 μF bypass capacitor between PIN 3 and 6.

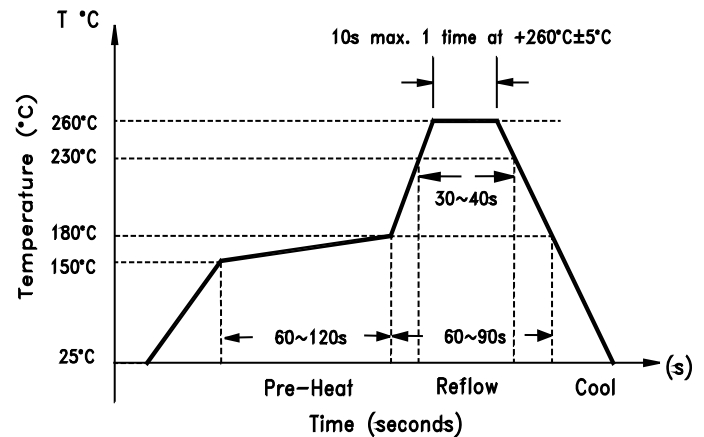
Dimensions: inches (mm)

TAPE & REEL: T= Tape and reel (1,000pcs/reel)

REFLOW PROFILE:

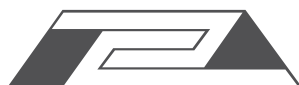


Dimensions: mm



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