

VA4 SERIES: 9.3X8.5mm VCXO OSCILLATOR, HCMOS, +3.3 VDC

DESCRIPTION: A crystal controlled, high frequency, highly stable, voltage controlled oscillator, adhering to HCMOS Standards. The output can be Tri-stated to facilitate testing or combined multiple clocks. This oscillator is ideal for today's automated assembly environments.

APPLICATIONS AND FEATURES:

- Common Frequencies: 16.384 MHz; 19.44 MHz; 27 MHz; 38.88 MHz; 51.84 MHz; 77.76 MHz
- +3.3 VDC HCMOS
- Frequency Range from 1 to 100 MHz

■ ELECTRICAL PARAMETERS:

| PARAMETER | SYMBOL | TEST CONDITIONS ^{*1} | VALUE | UNIT |
|-----------------------------|------------|--|----------------------------------|------------|
| Nominal Frequency | fo | | 1.000 ~ 100.000 | MHz |
| Supply Voltage | Vcc | | +3.3 ±5% | VDC |
| Supply Current | Is | | 35.0 MAX | mA |
| Output Logic Type | | | HCMOS | |
| Load | | Connected from output to ground | 15 | pF |
| Output Voltage Levels | Voh Vol | | 0.9 * Vcc MIN 0.1 * Vcc MAX | VDC VDC |
| Duty Cycle | DC | Measured at 50% of Vcc | 40/60 to 60/40 or 45/55 to 55/45 | % |
| Rise / Fall Time | tr / tf | Measured at 20/80% and 80/20% Vcc Levels | 6.0 MAX ^{*2} | ns |
| Jitter | J | RMS, Fj = 12 kHz...20 MHz | 1 TYP | ps |
| Overall Frequency Stability | Δf/fc | Op. Temp., Aging, Load, Supply and Cal. Variations | ^{*3} | ppm |
| Control Voltage Range | VC | Positive slope; 10% linearity MAX | 0 to +3.3 | VDC |
| Settability | Vfo | | +1.65 ± 0.25 | VDC |
| Absolute Pull Range | APR | Minimum guaranteed freq. pull over Δf/fc | See Part Numbering | ppm |
| Input Impedance | Zin | | 10 MIN | kΩ |
| Modulation Bandwidth | BW | -3 dB | 10 MIN | kHz |
| Pin 1 Output Enabled | En | High Voltage or No Connect | 0.7•Vcc MIN | VDC |
| Pin 1 Output Disabled | Dis | Ground | 0.3•Vcc MAX | VDC |
| Absolute voltage range | Vcc(abs) | Non-Destructive | -0.5...+7.0 | VDC |

*1 Test Conditions Unless Stated Otherwise: Nominal Vcc, Nominal Load, +25 ±3°C

*2 Frequency Dependent

*3 Not All APR's Available With All Temperature Ranges—Please Consult Factory For Availability

■ ENVIRONMENTAL PARAMETERS:

| PARAMETER | SYMBOL | TEST CONDITIONS ^{*1} | VALUE | UNIT |
|-----------------------------|--------|-------------------------------|-----------------------|------|
| Operating temperature range | Ta | | SEE PART NUMBER TABLE | °C |
| Storage temperature range | T(stg) | | -55...+90 | °C |

■ PART NUMBERING SYSTEM:

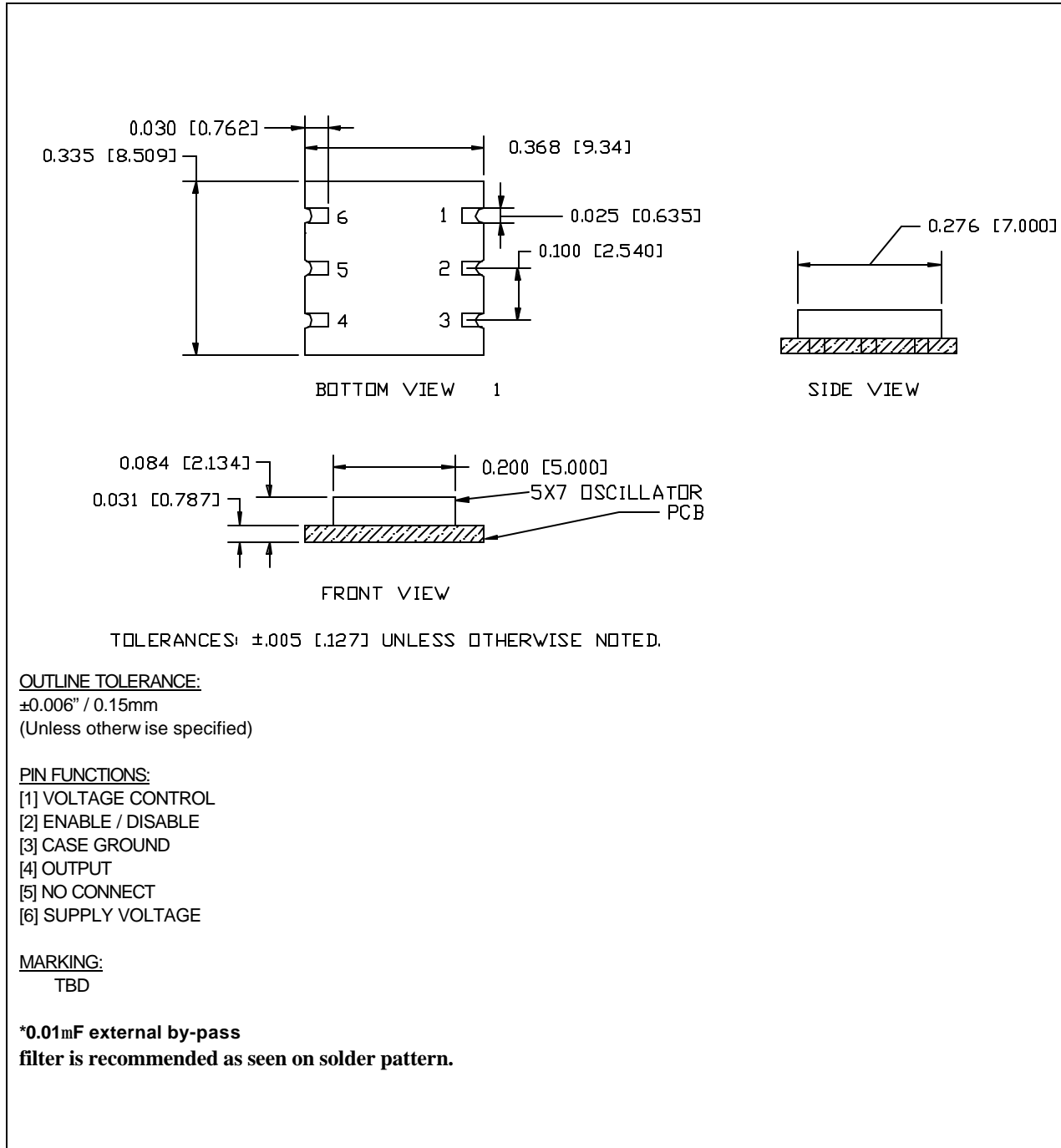
| SERIES | SYMMETRY | TEMPERATURE RANGE (°C) | APR (ppm) | FREQUENCY (MHz) |
|-----------------------------|--|--|---|-----------------|
| VA4: VCXO with HCMOS Output | A: 40/60 to 60/40% T: 45/55 to 55/45% | R: 0...+50 S: 0...+70 U: -20...+70 W: 0...+85 V: -40...+85 | F: ±32 ppm H: ±50 ppm K: ±70PPM G: ±80 ppm J: ±100 ppm L: ±130 ppm | 1.000...100.000 |

EXAMPLE: VA4ASH-38.880

VCXO Oscillator, 9.3X8.5mm Package, +3.3 VDC Supply Voltage, HCMOS Output, Standard Symmetry, 0...+70°C Operating Temperature Range, ±50 ppm APR, 38.880 MHz

Please consult the factory for any custom requirements.

■ MECHANICAL PARAMETERS:



TOLERANCES: ±0.005 [0.127] UNLESS OTHERWISE NOTED.

OUTLINE TOLERANCE:

±0.006" / 0.15mm
(Unless otherwise specified)

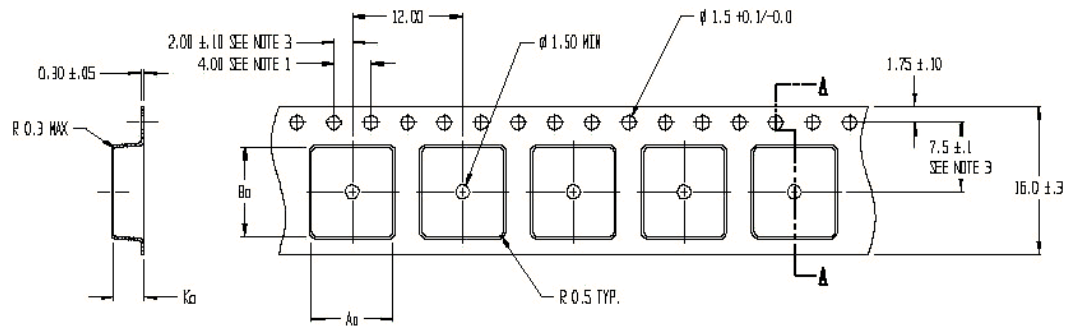
PIN FUNCTIONS:

- [1] VOLTAGE CONTROL
- [2] ENABLE / DISABLE
- [3] CASE GROUND
- [4] OUTPUT
- [5] NO CONNECT
- [6] SUPPLY VOLTAGE

MARKING:

TBD

***0.01mF external by-pass filter is recommended as seen on solder pattern.**

▪ **TAPE AND REEL****SECTION A - A**

$$\begin{aligned}A_0 &= 8.75 \\B_0 &= 9.65 \\K_0 &= 3.20\end{aligned}$$

NOTES:

1. 10 SPROCKET HOLE PITCH CUMULATIVE TOLERANCE ± 0.2
2. CAMBER IN COMPLIANCE WITH EIA 481
3. POCKET POSITION RELATIVE TO SPROCKET HOLE MEASURED AS TRUE POSITION OF POCKET, NOT POCKET HOLE