



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

#### FEATURES:

- 3.2 x 2.5 x 0.9mm miniature package
- Low current consumption 1.5mA for 19.68MHz
- Vc function corresponds to PLL circuits
- Suitable for RoHS reflow profile

#### APPLICATIONS:

- Cellular and cordless phones
- Standard OSC for exact equipment
- Mobile communication equipment
- Portable radio equipment and music player.
- PLL

#### STANDARD SPECIFICATIONS:

| Parameters                                 | Minimum                                                                | Typical | Maximum | Units | Notes                |
|--------------------------------------------|------------------------------------------------------------------------|---------|---------|-------|----------------------|
| Frequency Range                            | 10                                                                     |         | 40      | MHz   |                      |
| Standard Frequencies:                      | 10, 13, 14.4, 16.3676, 19.2, 19.8, 20, 24.5535, 26, 33.6, 38.4, 39, 40 |         |         | MHz   |                      |
| Operating Temperature:                     | -30                                                                    |         | +75     | °C    |                      |
| Storage Temperature:                       | -40                                                                    |         | +85     | °C    |                      |
| Frequency Stability $\Delta f/f_0$ vs      |                                                                        |         |         |       |                      |
| Tolerance (@+25°C) at shipping:            | -0.5                                                                   |         | +0.5    | ppm   |                      |
| Tolerance (@+25°C) after reflow:           | -1.5                                                                   |         | +1.5    | ppm   |                      |
| Temperature (ref. to +25°C):               | -2.5                                                                   |         | +2.5    |       | See option (Tabel 1) |
| Supply Voltage Change (Vdd±5%):            | -0.2                                                                   |         | +0.2    |       |                      |
| Load Change (ZL±10%):                      | -0.2                                                                   |         | +0.2    |       |                      |
| Supply Voltage (Vdd):                      | +3.135                                                                 | +3.3    | +3.465  | V     | See option           |
| Aging (first year @+25°C):                 | -1.0                                                                   |         | +1.0    | ppm   |                      |
| Supply Current (Icc):                      |                                                                        |         | 1.5     | mA    | ~19.68MHz            |
|                                            |                                                                        |         | 2.0     | mA    | ~32.00MHz            |
|                                            |                                                                        |         | 2.5     | mA    | ~40.00MHz            |
| Voltage Control Function<br>(for ASVTX-11) |                                                                        |         |         |       |                      |
| Control Voltage (Vcc):                     | +0.5                                                                   | +1.5    | +2.5    | Vdc   |                      |
| Frequency Tuning Range:                    | ±8                                                                     |         |         | ppm   |                      |
| Frequency Tuning Transition:               | Positive                                                               |         |         |       |                      |
| Input Impedance:                           | 500                                                                    | 650     |         | kΩ    |                      |
| Output                                     |                                                                        |         |         |       |                      |
| Voltage:                                   | 0.8                                                                    |         |         | Vp-p  |                      |
| Load:                                      | 10kΩ/10pF                                                              |         |         |       |                      |
| Waveform:                                  | Clipped Sine Wave                                                      |         |         |       |                      |
| Phase Noise:                               |                                                                        | -135    |         | dBc   | @1kHz                |



### OPTIONS & PART IDENTIFICATION:

ASVTX-11 or ASTX-11 -  -  MHz -  -

| Vdd (V)        |
|----------------|
| Blank: 3.3V±5% |
| A: 3.0V±5%     |
| B: 2.8V±5%     |
| C: 2.5V±5%     |

| Frequency in MHz                                       |
|--------------------------------------------------------|
| Please specify the frequency in MHz.<br>e.g. 19.200MHz |

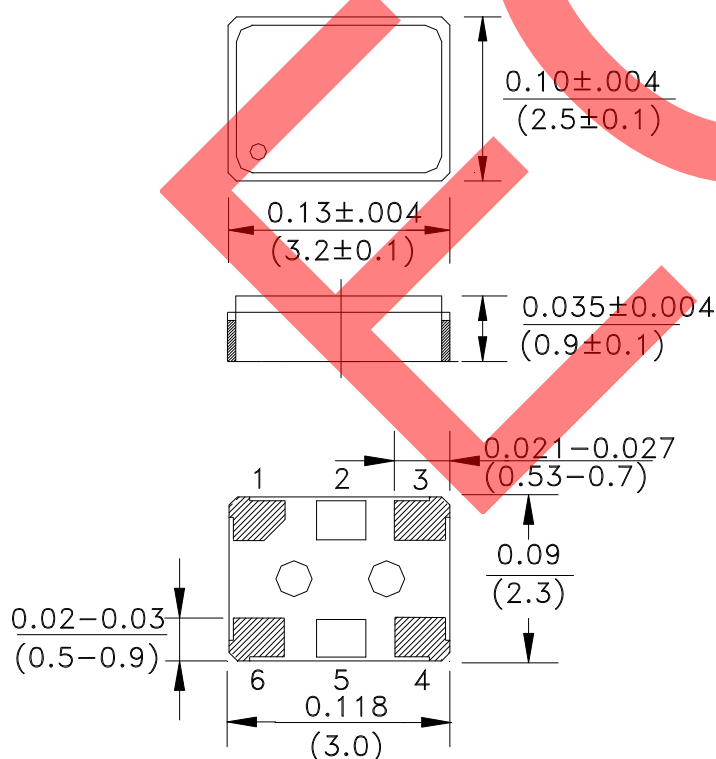
| Packaging        |
|------------------|
| Blank: Bulk      |
| T: 1000pcs/reel  |
| T3: 3000pcs/reel |

Table 1: Frequency Stability vs Operating Temperature

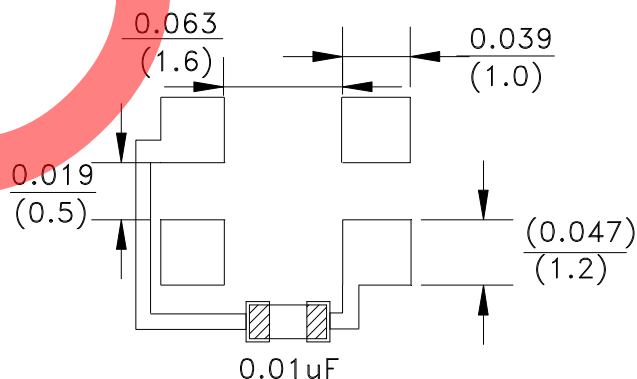
|               | ±1.5ppm | ±2ppm | ±2.5ppm     | ±3ppm | ±4ppm | ±5ppm |
|---------------|---------|-------|-------------|-------|-------|-------|
| 0°C ~ +50°C   | D15     | D20   | D25         | D30   | D40   | D50   |
| -10°C ~ +60°C | E15     | E20   | E25         | E30   | E40   | E50   |
| -20°C ~ +70°C | F15     | F20   | F25         | F30   | F40   | F50   |
| -30°C ~ +70°C | G15     | G20   | G25         | G30   | G40   | G50   |
| -30°C ~ +75°C | H15     | H20   | Std.(Blank) | H30   | H40   | H50   |
| -40°C ~ +85°C | I15     | I20   | I25         | I30   | I40   | I50   |

### OUTLINE DRAWING:

6-pad package (Date Code prior to March 2014):



Recommended land pattern



Note 1: It is not recommended that paths go underneath the oscillator. If needed, please use multi-layer PCB board or resist coating.

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

| Pin | Function |         |
|-----|----------|---------|
|     | ASVTX-11 | ASTX-11 |
| 1   | Vc       | GND     |
| 2   | N.C.     |         |
| 3   | GND      |         |
| 4   | Output   |         |
| 5   | N.C.     |         |
| 6   | Vdd      |         |

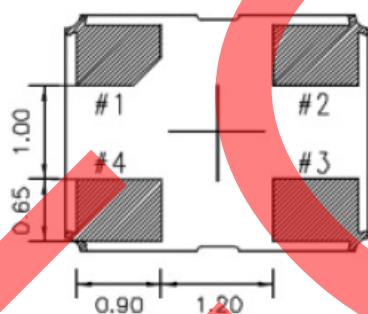
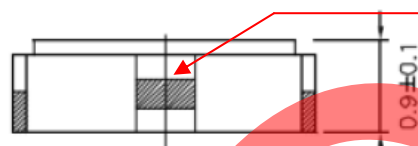
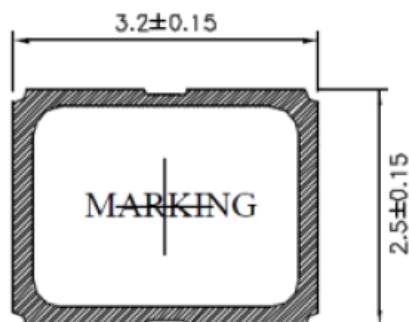
Dimensions: Inches (mm)





### OUTLINE DRAWING:

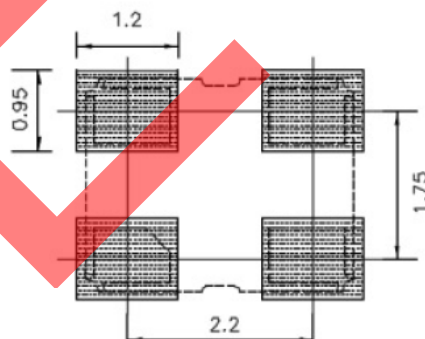
4-pad package (Date Code March 2014 and later):



Due to material availability, 1 or 2 side pads may appear on the side of the package. The variation in no way affects the electrical performance of the product.

| Pin | Function |         |
|-----|----------|---------|
|     | ASVTX-11 | ASTX-11 |
| 1   | Vc       | GND     |
| 2   | GND      |         |
| 3   | Output   |         |
| 4   | Vdd      |         |

### Recommended Land Pattern



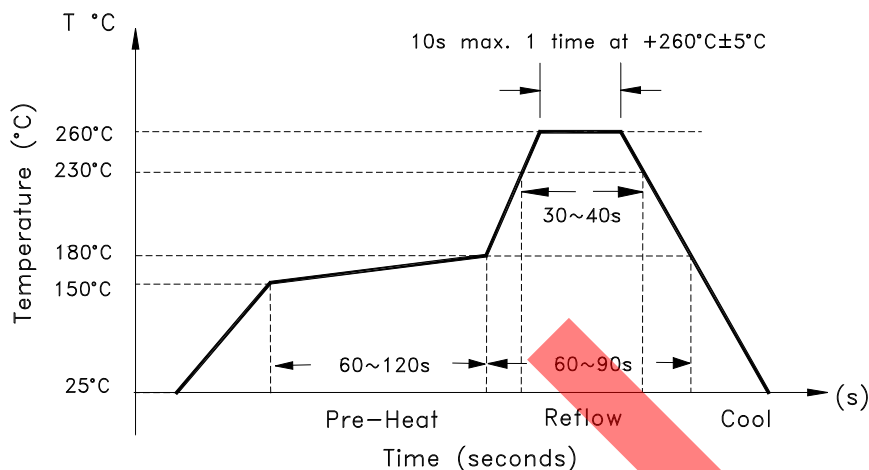
Note 1: It is not recommended that paths go underneath the oscillator. If needed, please use multi-layer PCB board or resist coating.

Note 2: Recommend using an approximately 0.01μF bypass capacitor between Pin 2 and 4.

Dimensions: mm



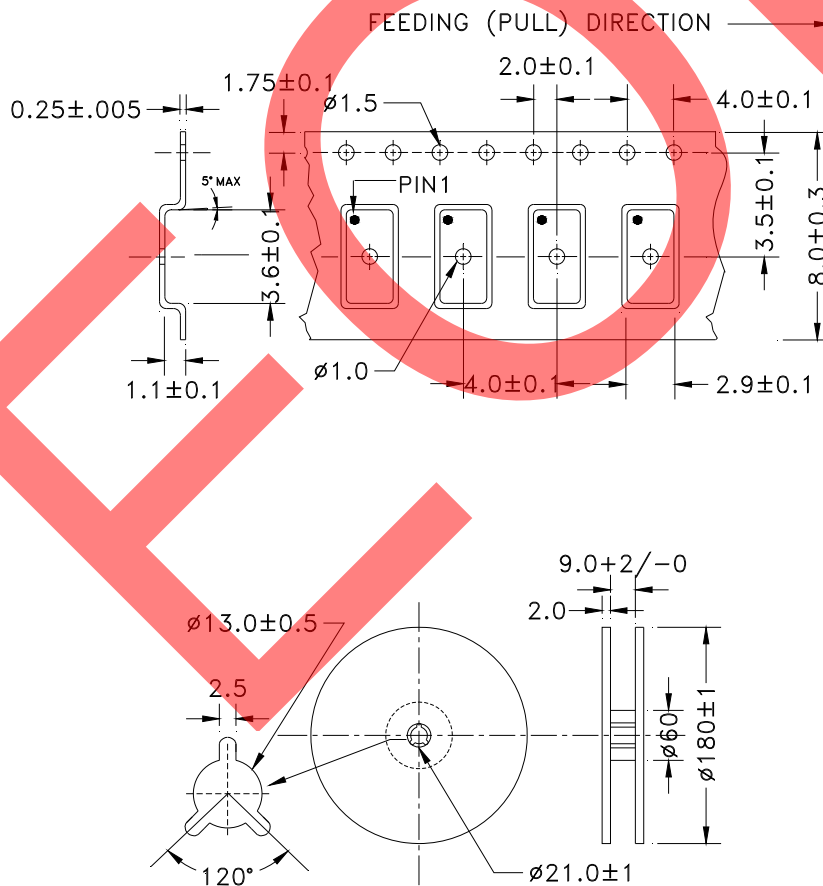
### REFLOW PROFILE:



### TAPE & REEL:

T: 1000pcs/reel

T3: 3000pcs/reel



Dimensions: mm

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