

ULTRA MINIATURE SMD VC/TCXO



2.5 X 2.0 X 0.9mm



RoHS
Compliant

ASVTX-12/ASTX-12

Moisture Sensitivity Level (MSL) –1

➤ **FEATURES:**

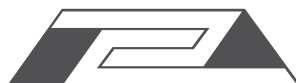
- Ultra miniature and low height 0.9mm.
- Low current consumption 2.5mA.
- Vc function corresponds to PLL circuits.
- Suitable for RoHS reflow profile.
- Low phase noise.

➤ **APPLICATIONS:**

- Cellular and cordless phones.
- Standard OSC for exact equipment.
- Mobile communication equipment.
- Portable radio equipment.
- Personal Digital Assistants (PDAs).
- Portable music players.

➤ **STANDARD SPECIFICATIONS:**

| Parameters | Minimum | Typical | Maximum | Units | Notes |
|---|--|---------|---------|-------|---|
| Frequency Range | 13 | | 52 | MHz | |
| Standard Frequencies | 13, 16.368, 16.369, 19.2, 26, 38.4, 40, 52 | | | MHz | |
| Operating Temperature | -30 | | +85 | °C | See option (Table 1) |
| Storage Temperature | -40 | | +85 | °C | |
| Frequency Stability $\Delta f/f_0$ vs Tolerance (@+25°C) | -2.0 | | +2.0 | ppm | +25°C, Vcon=1.4V After 2 time reflow |
| Temperature (ref. to +25°C) | -1.0 | | +1.0 | | See option (Table 1) |
| Supply Voltage Change (Vdd±5%) | -0.2 | | +0.2 | | |
| Load Change (Z _L ±10%) | -0.2 | | +0.2 | | |
| Control Voltage (Vcon) (ASVTX-12 only) | +0.4 | | +2.4 | V | Option A |
| | +0.4 | | +2.4 | | Option B |
| | +0.4 | | +2.4 | | Option C |
| | +0.3 | | +1.5 | | Option D |
| Supply Voltage (Vcc) | +2.85 | +3.0 | +3.15 | V | Option A |
| | +2.66 | +2.8 | +2.94 | | Option B |
| | +2.375 | +2.5 | +2.625 | | Option C |
| | +1.71 | +1.8 | +1.89 | | Option D |
| Aging (first year @+25±2°C) | -1.0 | | +1.0 | ppm | |
| Supply Current (Icc) | | | 2.0 | mA | 13MHz ≤ Fo < 26MHz |
| | | | 2.5 | mA | 26MHz ≤ Fo ≤ 52MHz |
| Startup Time | | | 2.0 | ms | |
| Frequency Tuning Range (ASVTX-12 only) | ±5.0 | | ±9.5 | ppm | |
| Vcon Input Impedance (ASVTX-12 only) | 500 | | | kΩ | |
| Frequency Tuning Transition | Positive | | | | |
| Output Voltage | 0.8 | | | Vp-p | |
| Harmonics | | | -5.0 | dBc | |
| Load | 10kΩ//10pF | | | | |
| Waveform | Clipped Sine Wave | | | | |
| Phase Noise @ 19.2MHz | | | | | |
| 100Hz offset from the carrier | | -115 | -100 | dB/Hz | |
| 1kHz offset from the carrier | | -135 | -125 | | |
| 10kHz offset from the carrier | | -150 | -140 | | |



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OPTIONS & PART IDENTIFICATION: (left blank if standard)

ASVTX-12 or ASTX-12 - - MHz - -

| Vdd (V) |
|------------|
| A: 3.0V±5% |
| B: 2.8V±5% |
| C: 2.5V±5% |
| D: 1.8V±5% |

| Frequency in MHz |
|---|
| Please specify the frequency in MHz. e.g. 19.200MHz 26.000MHz |

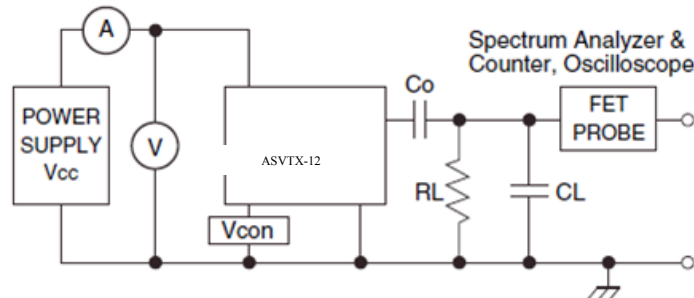
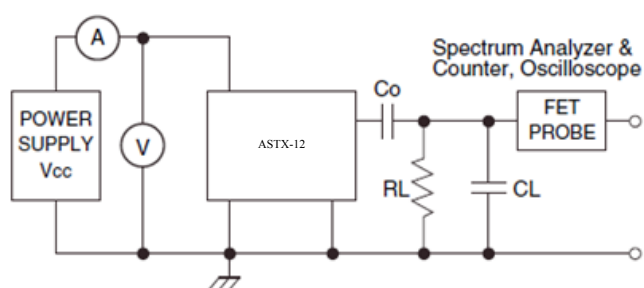
| Packaging |
|------------------|
| T: 1,000pcs/reel |

Table 1: Frequency Stability vs Operating Temperature

| | ±0.5ppm | ±1.0ppm | ±1.5ppm | ±2.0ppm | ±2.5ppm |
|---------------|---------|---------|---------|----------------|---------|
| 0°C ~ +55°C | D05 | D10 | D15 | D20 | D25 |
| -10°C ~ +60°C | E05 | E10 | E15 | E20 | E25 |
| 0°C ~ +70°C | F05 | F10 | F15 | F20 | F25 |
| -20°C ~ +70°C | G05 | G10 | G15 | G20 | G25 |
| -30°C ~ +85°C | H05* | H10 | H15 | STD (Blank) | H25 |
| -40°C ~ +85°C | | I10* | I15 | I20 | I25 |

*Please contact Abracon for availability

RECOMMENDED TEST CIRCUIT



RL=10kΩ±10% CL=10pF±10%
 • CL include Probe Capacitance
 Co: DC Cut Capacitance

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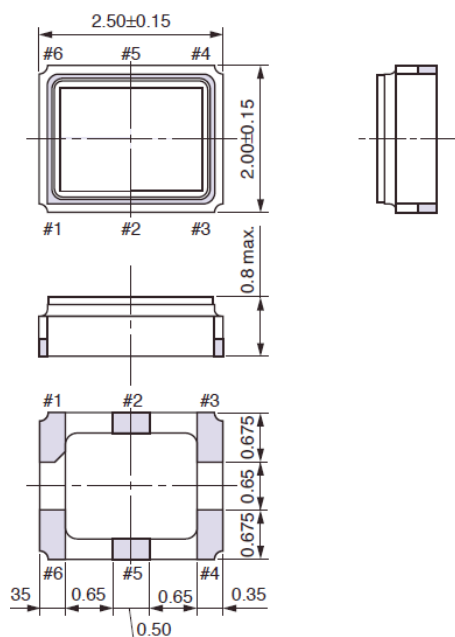


2.5 X 2.0 X 0.9mm

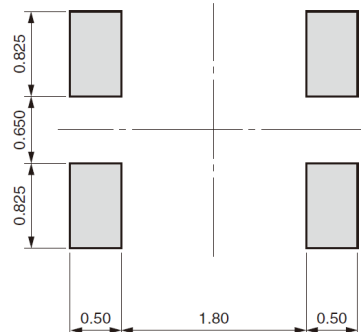
ASVTX-12/ASTX-12



OUTLINE DIMENSIONS:



Recommended Land Pattern



| | Pin Configuration |
|----------|-------------------|
| #1 pin | GND |
| #3 pin | GND |
| #4 pin | OUTPUT |
| #6 pin | Vcc |
| #2/5 pin | N.C. |

| | Pin Configuration |
|----------|-------------------|
| #1 pin | Vcon |
| #3 pin | GND |
| #4 pin | OUTPUT |
| #6 pin | Vcc |
| #2/5 pin | N.C. |

ASTX-12 TCXO

ASVTX-12 VCTCXO

Note1:

It is recommended that a by-pass capacitor of 0.01uF value be placed between pin #6 and pin #3 and an AC-coupling capacitor of the same value be placed in series with pin#4 for optimal performance.

For ASTX, please connect pin #1 and #3 to GND.

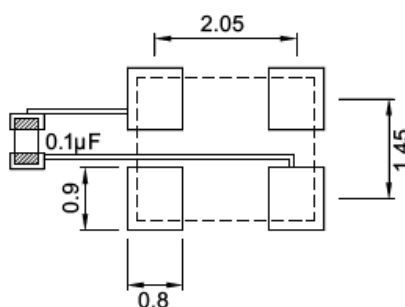
Note2:

Pin#2 and Pin#5 should be left floating (No Connect = N.C.)

Dimensions: mm



Recommended Land Pattern

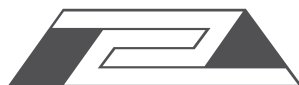


| PIN | FUNCTION | |
|-----|----------|------|
| | ASVTX | ASTX |
| 1 | Vcon | GND |
| 2 | GND | |
| 3 | OUTPUT | |
| 4 | Vcc | |

Note:

It is recommended that a by-pass capacitor of 0.1uF value be placed between pin #2 and pin #4 and an AC-coupling capacitor of the same value be placed in series with pin#3 for optimal performance.

Dimensions: mm



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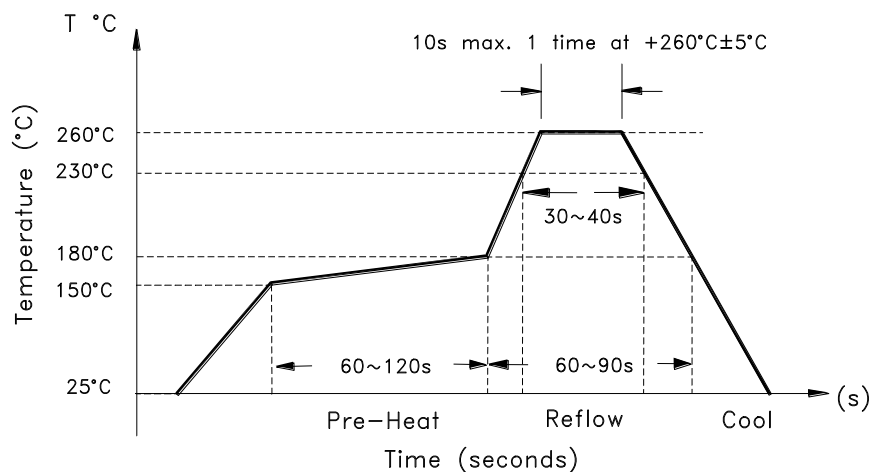
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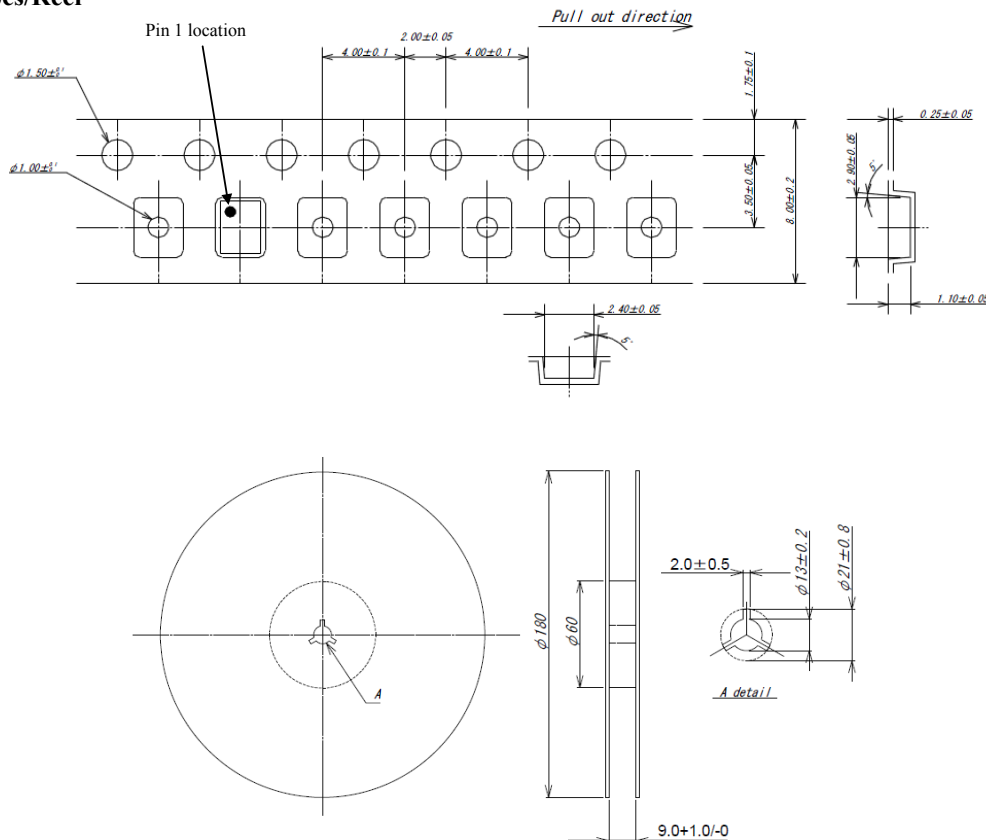
RoHS
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REFLOW PROFILE



TAPE & REEL:

T: 1,000pcs/Reel



Dimensions: mm

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