



Accurate Kinetic Energy

No.11-3 Jianguo Rd., T.E.P.Z. 42760 Taiwan, ROC

All dimensions are millimeters.

| | |
|---------|----------------|
| CAD: | TCR |
| Review: | EG |
| Appr: | JL |
| Page: | 1/4 |
| Date: | August 01,2022 |

Specification Title:

**Temperature Compensated
Voltage Controlled Crystal Oscillator
Automotive Grade
VCTCXO - Ceramic Package
3.2 x 2.5 millimeter Surface Mount**

Part Number: TV32 Auto Series

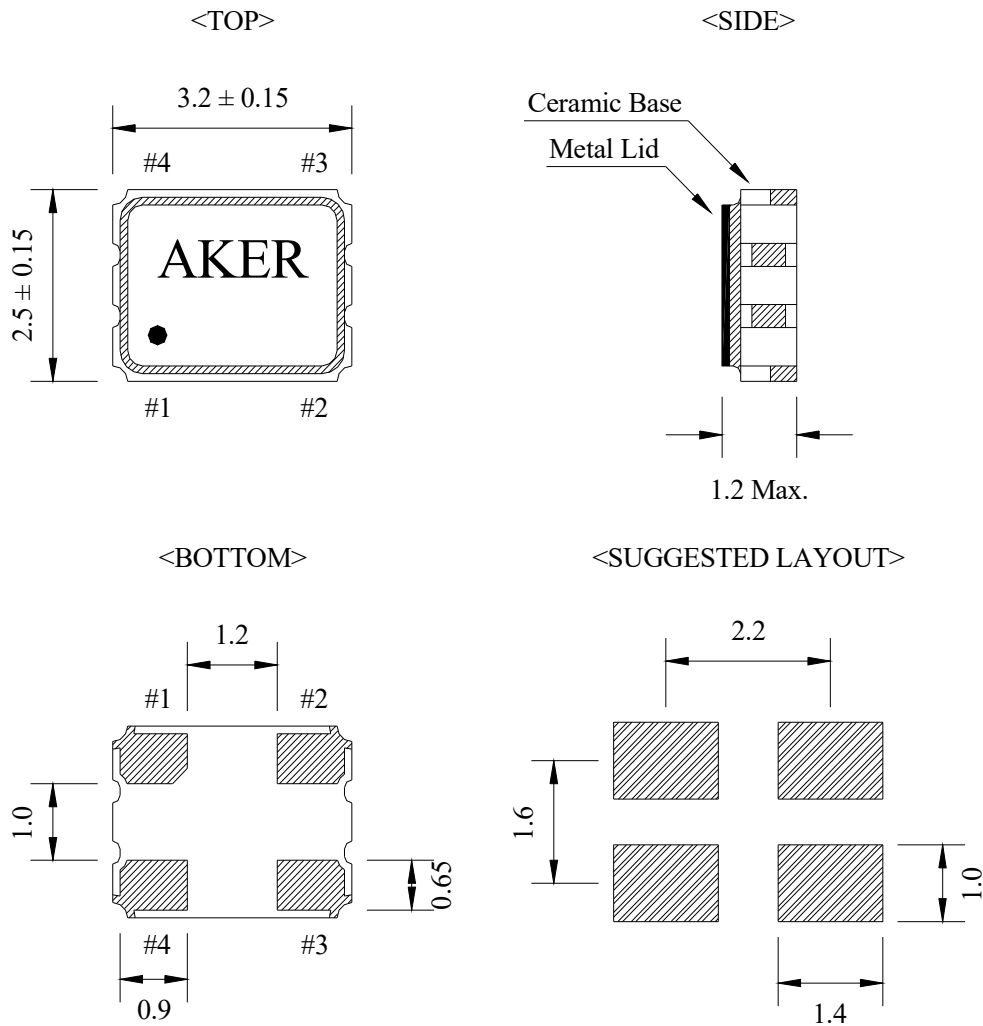
Electrical Specifications:

| | | | |
|---|-----------------------|------------|-------------|
| Frequency Range | 10.000 to 52.000 | MHz | |
| Frequency Tolerance | ±2.0 | ppm Max. | |
| Frequency Stability vs. Operating Temperature | ±0.5 ~ ±2.0 | | |
| Frequency Stability vs. Supply Voltage Change | ±0.2 | | |
| Frequency Stability vs. 10% Load Change | ±0.2 | | |
| Aging per Year | ±1.0 | | |
| Operating Temperature Range | Standard | -20 to +70 | °C |
| | Extended | -40 to +85 | |
| Storage Temperature Range | -55 to +125 | | |
| Supply Voltage | 1.8 ± 5% | VDC | |
| | 2.5 ± 5% | | |
| | 3.3 ± 5% | | |
| Frequency Pulling Range | VCON=0.3V~1.5V@1.8VDC | ±5 | ppm Min. |
| | VCON=0.4V~2.4V@2.5VDC | | |
| | VCON=0.4V~2.4V@3.3VDC | | |
| Transfer Function | Positive | | |
| Input Current | 2.5 | mA Max. | |
| Output Level | 0.8 | Vp-p Min. | |
| Output Waveform | Clipped Sinewave | | |
| Output Load | 10KΩ // 10pF | | |
| Phase Noise | @100Hz Offset | -114 | dBc/Hz Typ. |
| | @1KHz Offset | -131 | |
| | @10KHz Offset | -148 | |
| Start Up Time | 2 | ms Max. | |

**RoHS Compliant
Pb - Lead Free**

| Ltr | Revisions | Date | Appr |
|-----|-----------|------|------|
| | | | |
| | | | |
| | | | |

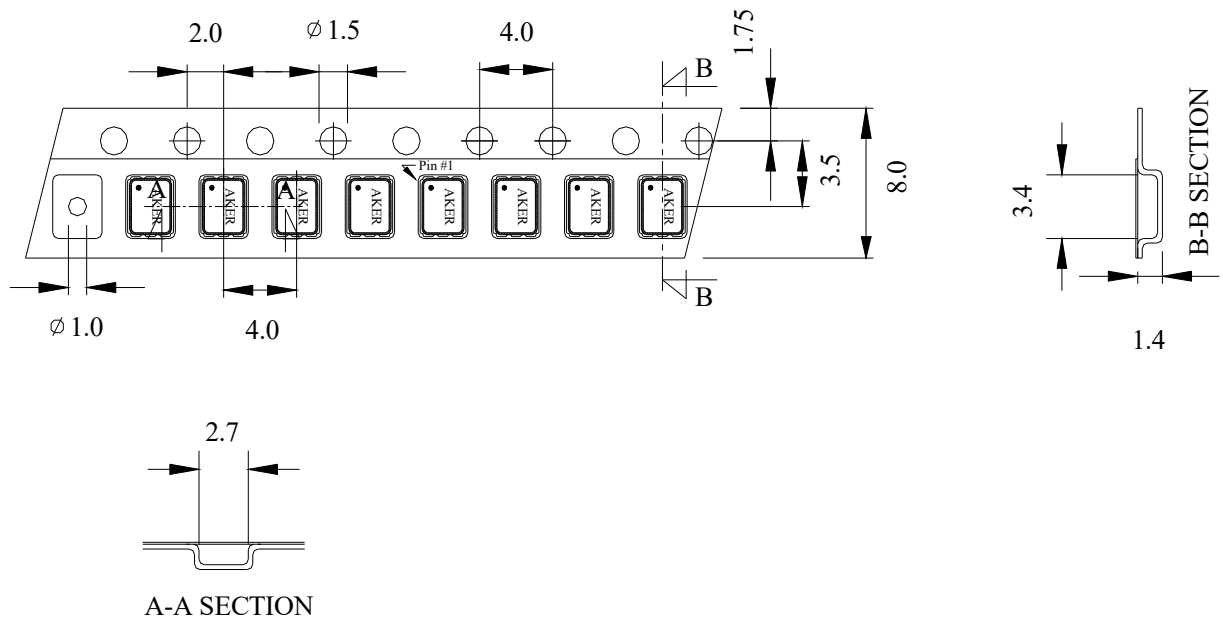
Mechanical Outline and Solder Pad Layout:



| PIN No. | Connection |
|---------|------------|
| #1 | VCON |
| #2 | GND |
| #3 | Output |
| #4 | VDC |

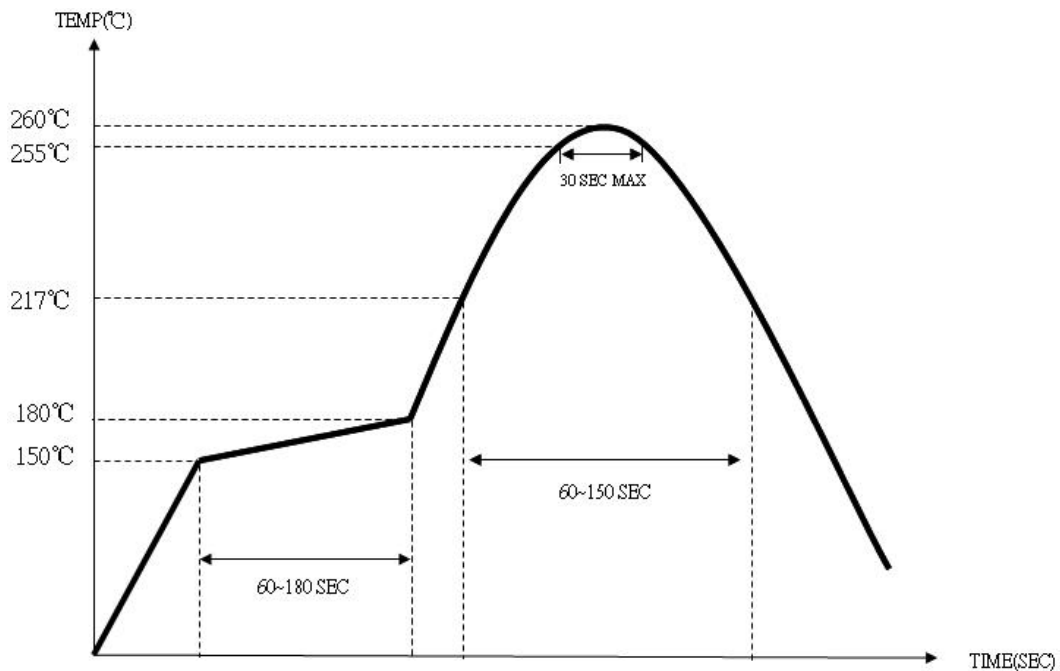
**Package is Seam Sealed Ceramic-Metal.
Dimensions are millimeters.**

Carrier Tape Dimensions:



Dimensions are millimeters.

Solder Reflow Characteristics:



How to build a Part Number:

| | | |
|------------------------------|----------------------|-------------------------|
| Series | TV | Parameter |
| Package | 32 | 3.2 x 2.5 mm |
| - | | |
| Supply Voltage | 18 | 1.8 VDC ± 5% |
| | 25 | 2.5 VDC ± 5% |
| | 33 | 3.3 VDC ± 5% |
| - | | |
| Temperature Stability | 005 | ±0.5 ppm |
| | 010 | ±1.0 ppm |
| | 020 | ±2.0 ppm |
| - | | |
| Output Waveform | S | Clipped Sinewave |
| - | | |
| Frequency | 10.000~52.000 | MHz |
| - | | |
| AECQ-200 | A | Automotive |
| - | | |
| Temperature Range | See Notes | -20 to +70 °C |
| | X | -40 to +85 °C |
| - | | |
| Packaging | R | 1000pcs Reel |
| | R3 | 3000pcs Reel |

Part Number Example:

TV32-33020S-26.000-A-X-R

TV32: 3.2 x 2.5 mm SMD Package

33: +3.3 VDC Supply Voltage

020: ±2.0 ppm Temperature Stability

S: Clipped Sinewave Output

26.000 MHz Nominal Frequency

X: -40 to + 85°C Temperature Range

R: Tape and Reel Packaging

Notes:

- 1- Standard Temperature Range do not need to be included in Part Number description.
- 2- Product is shipped in Tape and Reel configuration.
- 3- Quantities less than 1000 pieces are shipped bulk in ESD pouches.
- 4- Specification subject to change without notice.