

TV/TX 053 SERIES TCXO: 5x3.2 mm Stratum 3 TCXO with frequency Range 10.0 MHz to 52.0 MHz

■ FEATURES

- ± 0.2 ppm Stability over Temperature
- ± 4.6 ppm Overall Stability over 20 years
- Ultra compact 5x3.2 mm SMD Ceramic Package
- Low Current consumption

■ APPLICATIONS

- Mobile Phones
- Base Stations
- Mobile Radios
- GPS Devices
- Broadband Equipment
- Utility Metering



■ ELECTRICAL SPECIFICATION

| PARAMETER | SYMBOL | CONDITIONS | VALUE | UNIT |
|---|-------------------------|--|------------------------|----------------------------|
| Frequency range | f_o | | 10 ~ 52 | MHz |
| Supply voltage | V_{CC} | | 2.7 to 5.0 | V |
| Supply current | I_s | Typical (depending on Vcc and output) | 2 ~ 10 | mA |
| Clipped sine wave – Output Voltage Swing (peak-to-peak) | V_{p-p} | Load = 10K Ω // 10pF | 0.6 ~ 1.0 | V |
| HCMOS – Output Levels | V_{OH} / V_{OL} | Min/Max, 15pF Load | 0.9 Vcc / 0.1 Vcc | V |
| Duty Cycle | DC | HCMOS - Load = 15pF (2 TTL) | 40/60 or 45/55 | % |
| Rise Time / Fall Time | t_r / t_f | 10% ~ 90% | 5 | ns |
| Start up time | t_s | Typical | 3 | ms |
| Enable / Disable | E/D | Min / Max | 0.8 (Vcc) / 0.2 Vcc | Vdc |
| Control Voltage ¹ | V_c | Optional | 0.5 ~ 2.5 | Vdc |
| Pull Range ¹ | f_T | $V_c = 1.5 \pm 1.0$ V | $\pm 3 \sim \pm 15$ | ppm |
| Linearity, max | L | Positive tuning slope | 10 | % |
| Initial Frequency Calibration | f_C | Measures at 25°C | ± 1.5 | ppm |
| Stability vs. Supply Voltage change | f_V | $V_{CC} \pm 5\%$ | ± 0.05 | ppm |
| Stability vs. Load change | f_L | Load $\pm 10\%$ | ± 0.05 | ppm |
| Stability over operating temperature ² | $\Delta f/f_o(T)$ | Referenced at 25°C | ± 0.2 | ppm |
| Overall frequency stability, max | $\Delta f/f_c$ | Including 20 years of aging | ± 4.6 | ppm |
| Stability vs. Aging, max | f_{age} | 1 year @ 25°C | ± 0.5 | ppm |
| Phase noise @ freq. offset, typical. 10 MHz | $\mathcal{L}(\Delta f)$ | $\Delta f = 100$ Hz $\Delta f = 1$ kHz $\Delta f = 10$ kHz | -110 -135 -145 | dBc/Hz dBc/Hz dBc/Hz |
| Integrated Phase Jitter RMS, max | J | BW= 12kHz to 20MHz, $V_{CC} \pm 5\%$, 15pF load | 1.0 | ps |
| Operating temperature ³ | T_a | | -20 ~ +70 -40 ~ +85 | °C |
| Storage temperature | T(stg) | Absolute max | -55°C ~ +125°C | °C |

NOTES

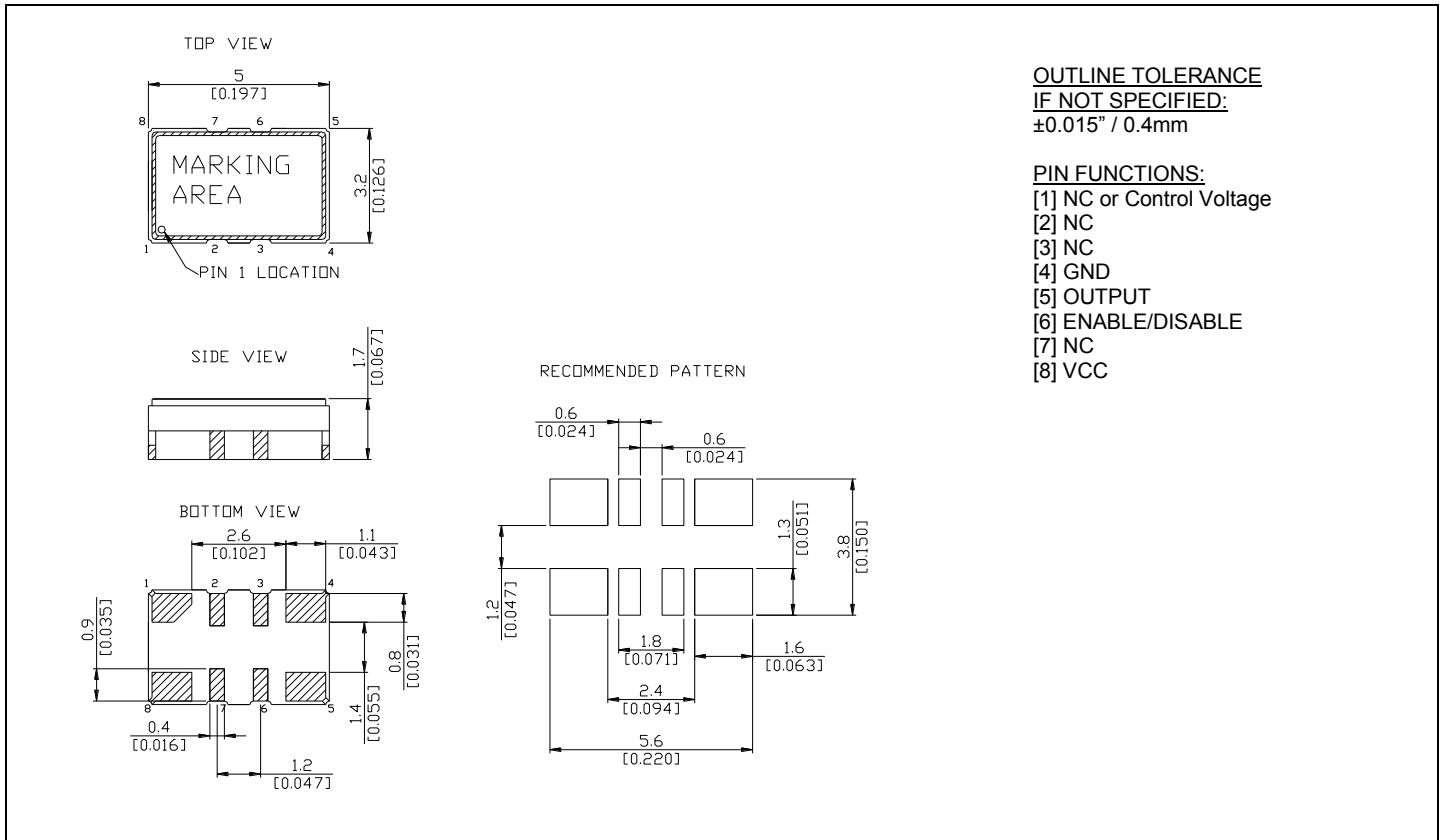
¹ Available with TV series only

² Not available at all frequencies, Contact Factory

³ Check part numbering table below. For others contact factory.

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MECHANICAL SPECIFICATION



PART NUMBERING SYSTEM

| TYPE | OUTPUT TYPE | SERIES | REV | - | OPERATING TEMP RANGE (°C) | - | STABILITY (PPM) | - | FREQUENCY (MHz) | - | SUPPLY VOLTAGE (V) | - | TAPE & REEL |
|--------------------|-----------------------------|--------|-----|---|--|---|-----------------|---|-----------------|---|--|---|-------------|
| Surface Mount TCXO | 0: Clipped Sine 2: HCMOS | 53 | A | - | LZ: 0~70 HZ: -20~+70 D3: -40~+85 | - | 0.28: ±0.028 | - | 10 ~ 52 | - | 5: Vcc=5.0 3: Vcc=3.3 2: Vcc=2.7 | - | TR |
| TX TV ⁴ | 2 | 53 | A | - | HZ | - | 0.28 | - | 12.8 | - | 3 | - | TR |

Notes

⁴ Available with Control Voltage option.

EXAMPLE: TV053A-D3-0.28-12.800-3-TR

Surface Mount TCXO, Control voltage option, 5x3.2 mm, Stratum 3, from -40°C to +85°C, 3.3 VDC supply voltage, Control Voltage range ±5 ppm to ±12 ppm, Clipped Sine wave output, Tape and reel packaging.