

# CRYSTAL OSCILLATORS

## TCXO Automotive Grade



### TXOF-221 SERIES

CERAMIC PACKAGE

#### Applications

- Navigation
- Camera
- Telematics
- RKE

#### Features

- Seam Seal
- Excellent Solderability
- Low Power Consumption
- RoHS Compliant
- IATF-16949 Certified
- AEC-Q200 Qualified

■ Actual Size:

### Specification

#### MODEL

|                            |               |                            |               |               |               |
|----------------------------|---------------|----------------------------|---------------|---------------|---------------|
| FREQUENCY RANGE            | MHz           | 10.000 ~ 52.000            |               |               |               |
| FREQUENCY TOLERANCE        | ppm           | ± 2.0 Max.                 |               |               |               |
| OPERATING TEMPERATURE      | °C            | - 20 ~ + 70 Or - 40 ~ + 85 |               |               |               |
| STORAGE TEMPERATURE        | °C            | - 55 ~ + 125               |               |               |               |
| POWER SUPPLY VOLTAGE       | VDC           | +1.8 ± 5%                  | +2.5 ± 5%     | +3.3 ± 5%     | +1.68 ~ +3.63 |
| FREQUENCY STABILITY        |               |                            |               |               |               |
| VS. OPERATING TEMPERATURE* | ppm           | ± 0.5 ~ ± 2.0              | ± 0.5 ~ ± 2.0 | ± 0.5 ~ ± 2.0 | ± 0.5 ~ ± 2.0 |
| VS. POWER SUPPLY VOLTAGE   | ppm (Max.)    | ± 0.2                      | ± 0.2         | ± 0.2         | ± 0.2         |
| VS. OUTPUT LOAD            | ppm (Max.)    | ± 0.2                      | ± 0.2         | ± 0.2         | ± 0.2         |
| OUTPUT WAVEFORM            |               | CLIPPED SINEWAVE           |               |               |               |
| OUTPUT LOAD                |               | 10KΩ//10pF                 |               |               |               |
| OUTPUT LEVEL               | Vp-p (Min.)   | 0.8                        | 0.8           | 0.8           | 0.8           |
| INPUT CURRENT              |               |                            |               |               |               |
| 10.000 ~ 52.000MHz         | mA (Max.)     | 2.5                        | 2.5           | 2.5           | 2.5           |
| PHASE NOISE                |               |                            |               |               |               |
| @100Hz offset              |               | -114                       | -114          | -114          | -114          |
| @1KHz offset               | dBc/Hz (Typ.) | -131                       | -131          | -131          | -131          |
| @10KHz offset              |               | -148                       | -148          | -148          | -148          |
| START UP TIME              | ms (Max.)     | 2.0                        | 2.0           | 2.0           | 2.0           |
| AGING                      | ppm/Year      | ± 1                        | ± 1           | ± 1           | ± 1           |

\*Refer to the middle point between the minimum and maximum frequency values.

\*\*Specification subject to change without notice.

### Pin Connection

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

### Dimension(mm)

#### TXOF-221

