

TCXO (Temperature Compensated Crystal Oscillator)

M4511-SK20B-10.000MHz

■ Features

- Clipped Sine Wave
- 5.0V operation
- Very Low Phase Noise

■ Absolute Maximum Ratings

| Item | Symbol | Unit | MIN. | TYP. | MAX. | Condition |
|-------------------------|------------------|----------------|------|------|------|----------------------|
| Supply Voltage | V _{DD} | V | -0.3 | | +7.0 | V _{DD} -GND |
| Storage temperature | T _{stg} | °C | -55 | | +125 | |
| Resistance to soldering | T _{sol} | 10sec at 225°C | | | | |

■ Operating Range

| Item | Symbol | Unit | MIN. | TYP. | MAX. | Condition |
|-----------------------|------------------|------|------|------|------|-----------|
| Supply Voltage | V _{DD} | V | 4.75 | 5.0 | 5.25 | |
| Operating temperature | T _{opr} | °C | -30 | | +75 | |
| Output load | 10Ω//10pF | | | | | |

■ Frequency characteristics

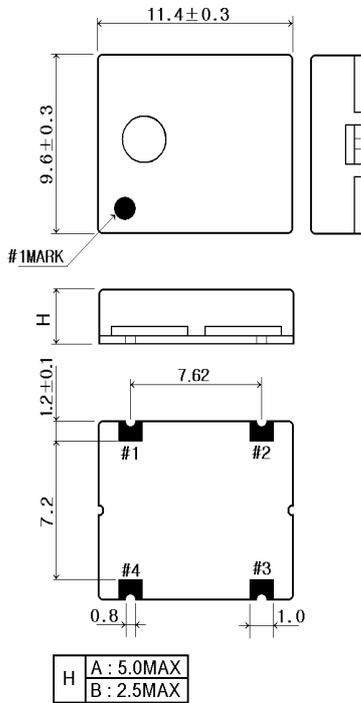
| Item | Symbol | Unit | MIN. | TYP. | MAX. | Condition |
|--|-------------------|------|------|--------|------|------------------------------|
| Oscillation Range | f _{osc} | MHz | | 10.000 | | |
| Stability vs. Temperature vs. Volt change vs. Aging vs. Load change | df/f ₀ | ppm | -2.0 | | +2.0 | T _a =-30 to +75°C |
| | | ppm | -0.5 | | +0.5 | 5.0V±5% |
| | | ppm | -1.0 | | +1.0 | 1 year |
| | | ppm | -0.2 | | +0.2 | Load±10% |
| Frequency Adjustment | f _{adj} | ppm | ±3.0 | | | by internal trimmer |

■ Electrical characteristics

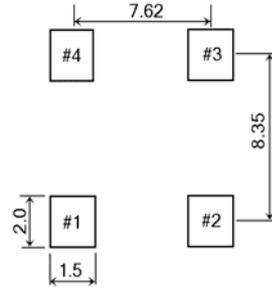
| Item | Symbol | Unit | MIN. | TYP. | MAX. | Condition |
|---------------|------------------|------------------|------|------|------|---------------------------|
| Start up time | t _{osc} | ms | | | 10 | |
| Input current | I _{DD} | mA | | | 3.0 | Load=10KΩ//10pF |
| Output level | | V _{p-p} | 1.0 | | | |
| Phase noise | | dBc/Hz | | | -60 | @1 Hz offset from carrier |
| | | | | | -90 | @10 Hz |
| | | | | | -120 | @100 Hz |
| | | | | | -140 | @1 KHz |
| | | | | | -145 | @10 KHz |
| | | | | | -150 | @100 KHz |

TCXO (Temperature Compensated Crystal Oscillator)

Dimension (unit : mm)



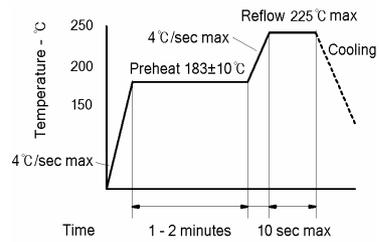
Land Pattern (unit : mm)



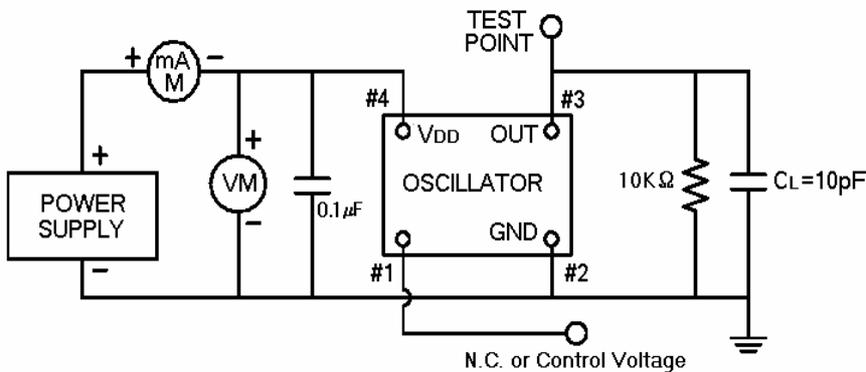
Pin Connection

- Pin #1 N.C.
- Pin #2 Ground
- Pin #3 Output
- Pin #4 VDD

Solder Reflow Guide



Test circuit



NOTE: C_L includes probe and fixture capacitance

Clipped Sine Wave