

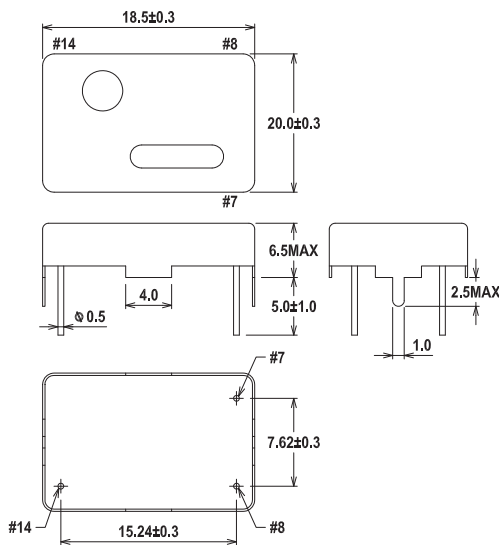
**◆ Application**

- Cellular Applications (GSM, TDMA, CDMA)
- GPS Devices
- Mobile and Portable Radio/Telephone Communications Transceivers
- Pb free product

**◆ Options**

- Carbon

**◆ Dimension(mm)**



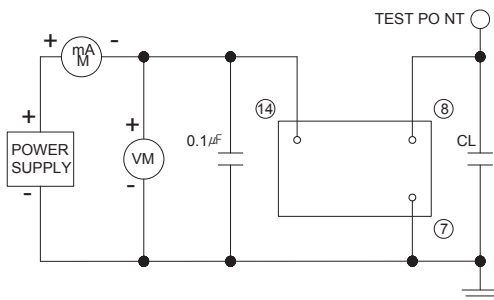
| No.  | Pin Connection |
|------|----------------|
| # 7  | GND            |
| # 8  | Output         |
| # 14 | Vcc            |

**◆ Standard Specification**

(Nominal frequency referenced to frequency at 25 °C ± 2 °C)

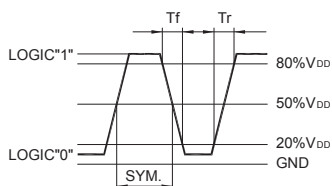
|                       | MTD-S Series  |
|-----------------------|---|
| Logic Family          | Clipped Sine wave   |
| Frequency Range       | 8.000 MHz ~ 35.000 MHz  |
| Frequency Stability   | +/-5.0ppm, +/-2.5ppm, +/-2.0ppm   |
| Operating Temp. Range | -40°C ~ +85°C, -30°C ~ +75°C, -20°C ~ 70°C  |
| Storage Temp. Range   | -55°C ~ +125°C  |
| Input Voltage         | +5.0Vdc ± 5% or 3.3 Vdc ± 5%  |
| Input Current         | 5.0mA Max   |
| Output Level          | 1.0Volt Vp-p MIN  |
| Aging                 | +/- 1 ppm/year Max  |
| Output Load           | 10Kohm//10pF, 20Kohm//10pF  |
| Phase Noise           | -40 dBc/Hz max @ 1 Hz offset from carrier<br>-80 dBc/Hz max @ 10 Hz -110 dBc/Hz max @ 100 Hz<br>-135 dBc/Hz max @ 1 kHz -140 dBc/Hz max @ 10 kHz<br>-145 dBc/hZ max @ 100 kHz |

**◆ Test Circuit**



Note: CL Includes probe and fixture capacitance

**◆ Output Waveform**



**◆ Parts Number Guide**

| Classification      | Designators |   |   |   |   |   |   |   | Description |                             |
|---------------------|-------------|---|---|---|---|---|---|---|-------------|-----------------------------|
| Example             | M           | T | D | - | S | 1 | 6 | A | ( )         | 20.000 MHz (Frequency)      |
| Logo                | M           |   |   |   |   |   |   |   |             | MDX                         |
| Package size        |             | T |   |   |   |   |   |   |             | TCXO                        |
| Product             |             |   | D |   |   |   |   |   |             | Dip type<br>18.5mm X 12.0mm |
| Output Level        |             |   |   |   | S |   |   |   |             | Clipped Sine wave           |
| Temperature Range   |             |   |   |   |   | 4 | 8 |   |             | -40°C ~ +85°C               |
|                     |             |   |   |   |   | 3 | 8 |   |             | -30°C ~ +80°C               |
|                     |             |   |   |   |   | 3 | 7 |   |             | -30°C ~ +75°C               |
|                     |             |   |   |   |   | 2 | 7 |   |             | -20°C ~ +70°C               |
|                     |             |   |   |   |   | 1 | 6 |   |             | -10°C ~ +60°C               |
| Frequency Stability |             |   |   |   |   |   |   |   | A           | +/-2.0ppm                   |
|                     |             |   |   |   |   |   |   |   | B           | +/-2.5ppm                   |
|                     |             |   |   |   |   |   |   |   | C           | +/-5.0ppm                   |
| Supply Voltage      |             |   |   |   |   |   |   |   | ( )         | +5.0 Volt                   |
|                     |             |   |   |   |   |   |   |   | 3           | +3.3 Volt                   |

Ref 2009-02b - All specifications are subject to change without notice