

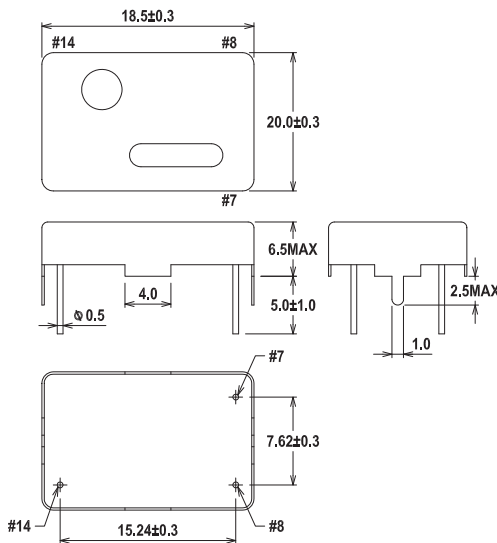
◆ Application

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

◆ Options

- Carbon

◆ Dimension(mm)



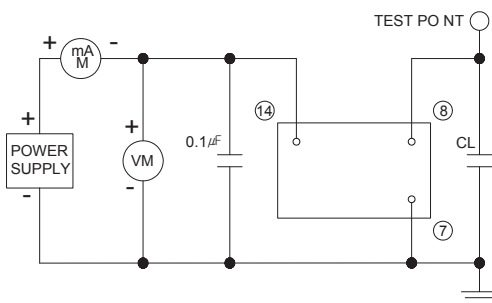
| No. | Pin Connection |
|------|----------------|
| # 7 | GND |
| # 8 | Output |
| # 14 | Vcc |

◆ Standard Specification

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

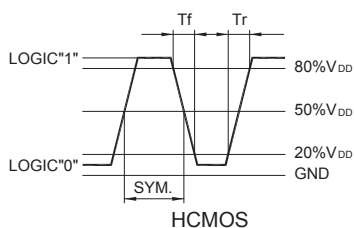
| | MTD-H Series |
|----------------------|---|
| Logic Family | HCMOS |
| Frequency Range | 8.000 MHz ~ 35.000 MHz |
| Frequency Stability | +/-5.0ppm, +/-2.5ppm, +/-2.0ppm |
| Operating Temp.Range | -40°C ~ +85°C, -30°C ~ +75°C, -20°C ~ 70°C |
| Storage Temp.Range | -55°C ~ +125°C |
| Input Voltage | + 3.3 Vdc ± 5% |
| Input Current | 15.0mA Max |
| Output Level | Symmetry : 40/60% max @ 50% VDD Logic 0: 10% Vdd max Logic 1: 90% Vdd min Rise & Fall Times : 8ns max, 20~80% |
| Aging | +/- 1 ppm/year Max |
| Output Load | 10Kohm//10pF, 15pF |
| Phase Noise | -40 dBc/Hz max @ 1 Hz offset from carrier -80 dBc/Hz max @ 10 Hz -110 dBc/Hz max @ 100 Hz -135 dBc/Hz max @ 1 kHz -140 dBc/Hz max @ 10 kHz -145 dBc/hZ max @ 100 kHz |

◆ Test Circuit



Note: CL Includes probe and fixture capacitance

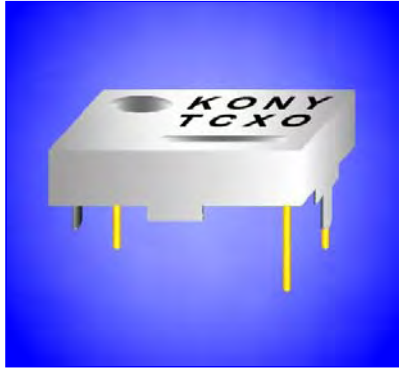
◆ Output Waveform



◆ Parts Number Guide

| Classification | Designators | | | | | | | Description | | |
|---------------------|-------------|---|---|---|---|---|---|-------------|----|-----------------------------|
| Example | M | T | D | - | H | 1 | 6 | A | () | 20.000 MHz (Frequency) |
| Logo | M | | | | | | | | | MDX |
| Package size | | T | | | | | | | | TCXO |
| Product | | | D | | | | | | | Dip type 18.5mm X 12.0mm |
| Output Level | | | | H | | | | | | HCMOS |
| 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 Volt |

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



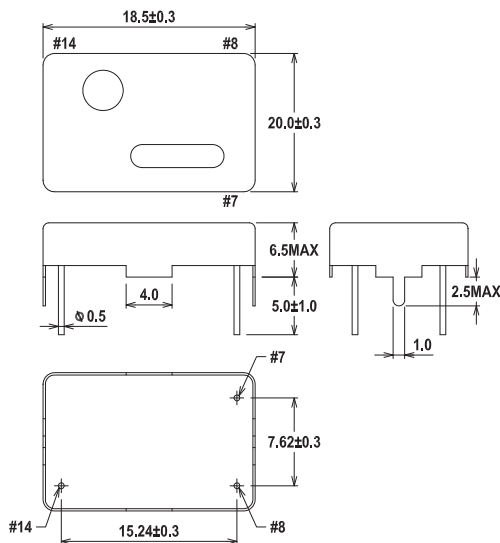
◆ **Application**

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

◆ **Options**

- Carbon

◆ **Dimension(mm)**



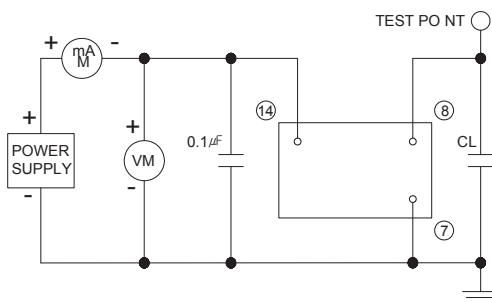
| No. | Pin Connection |
|------|----------------|
| # 7 | GND |
| # 8 | Output |
| # 14 | Vcc |

◆ **Standard Specification**

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

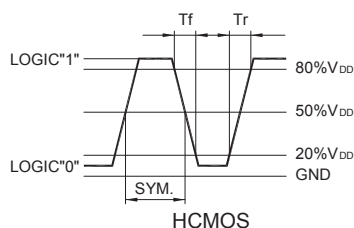
| | MTD-H3 Series |
|----------------------|---|
| Logic Family | HCMOS |
| Frequency Range | 8.000 MHz ~ 35.000 MHz |
| Frequency Stability | +/-5.0ppm, +/-2.5ppm, +/-2.0ppm |
| Operating Temp.Range | -40 °C ~ +85 °C, -30 °C ~ +75 °C, -20 °C ~ 70 °C |
| Storage Temp.Range | -55 °C ~ +125 °C |
| Input Voltage | + 3.3 Vdc ± 5% |
| Input Current | 15.0mA Max |
| Output Level | Symmetry : 40/60% max @ 50% VDD Logic 0: 10% Vdd max Logic 1: 90% Vdd min Rise & Fall Times : 8ns max, 20~80% |
| Aging | +/- 1 ppm/year Max |
| Output Load | 10Kohm//10pF, 15pF |
| Phase Noise | -40 dBc/Hz max @ 1 Hz offset from carrier -80 dBc/Hz max @ 10 Hz -110 dBc/Hz max @ 100 Hz -135 dBc/Hz max @ 1 kHz -140 dBc/Hz max @ 10 kHz -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 | - | H | 1 | 6 | A | 3 | 20.000 MHz (Frequency) |
| Logo | M | | | | | | | | | MDX |
| Package size | | T | | | | | | | | TCXO |
| Product | | | D | | | | | | | Dip type 18.5mm X 12.0mm |
| Output Level | | | | | H | | | | | HCMOS |
| 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 | | | | | | 0 | 5 | | | +0 °C ~ +50 °C |
| | | | | | | | | A | | +/-2.0ppm |
| | | | | | | | | B | | +/-2.5ppm |
| Supply Voltage | | | | | | | | C | | +/-5.0ppm |
| | | | | | | | | | 3 | +3.3 Volt |

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