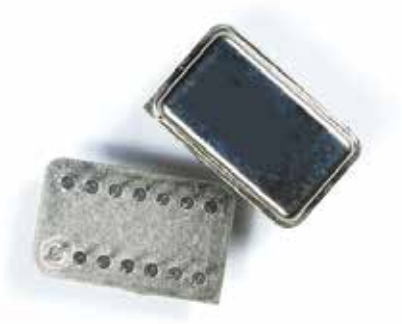
# MIL-55310/08-Series Specifications



## 0.887L x 0.540W x 0.200H (in)

PDI *MIL-PRF-55310/08* Oscillators are available in both standard and custom frequencies to provide precision timing in a hermetically sealed package for military and space applications. PDI provides quick-turn sampling for your proto-typing needs, mass production capability, and competitive pricing.

ex) **M55310/08—B—08—A—25M00000**

**MILITARY SLASH SHEET**

**PRODUCT LEVEL**
B = Hi-Rel
C = Commercial
S = Space

**DASH NUMBER**
See Chart Below

**OPERATING TEMPERATURE**
A = -55°C to +125°C
B = -55°C to +105°C
C = -20°C to +70°C

**XXXXXXXX**
Specified
Nominal
Frequency

| Dash No. Package | Frequency Range | Supply Voltage Vdc | Supply Current mA Max. | Rise/Fall Times nS Max. | Duty Cycle @ 1.4 Vdc | Output Voltage | | Operating Temperature | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Logic: 1 Min. | Logic: 0 Max. | (A) | (B) | (C) |
| **04** | 750 KHz – 2.5 MHz | +5.0 ±0.25 | 50 | 15 | 45 to 55% | 2.4 Vdc at 400 µA Sorce | 0.5 Vdc at 16 mA Sink | ±50 | ±40 | ±25 |
| **05** | 2.5 MHz – 5 MHz | +5.0 ±0.25 | 50 | 15 | 45 to 55% | | | ±50 | ±40 | ±25 |
| **06** | 5 MHz – 10 MHz | +5.0 ±0.25 | 35 | 15 | 40 to 60% | | | ±50 | ±40 | ±25 |
| **07** | 10 MHz – 20 MHz | +5.0 ±0.25 | 25 | 15 | 40 to 60% | | | ±50 | ±40 | ±25 |
| **08** | 20 MHz – 30 MHz | +5.0 ±0.25 | 35 | 5 | 40 to 60% | | | ±50 | ±40 | ±25 |
| **09** | 30 MHz – 50 MHz | +5.0 ±0.25 | 50 | 5 | 40 to 60% | | | ±50 | ±40 | ±25 |

| Aging Per Year (Max.) | 5 Hz – 4.9 MHz | 5 MHz – 50 MHz |
|---|---|---|
| Per 30 Days | ±1 ppm | ±2 ppm |
| Per 90 Days | ±2 ppm | ±4 ppm |
| Per Year | ±5 ppm | ±10 ppm |

**NOTES:**
All product supplied in anti-static packaging.
A TTL unit load is defined as: 1.60 mA sink, 0.04 mA source, and 2.00 pF capacitance.
At +70°C ± 2.0°C, intervals not more than every 72 hours for a minimum of 30 days.
The product described in this spec. consist of this specification and MIL-PRF-55310.
*Decimal* XXX = ± .005, XX = ± .020 *Metric* [XXX = ± .13], [XX = ± .50]
Specifications subject to change without notice, last updated 4/1/1 3.

| Parameter | | Frequency Range 0.750000 to 50.000000 MHz | | Units |
|---|---|---|---|---|
| Frequency Stability | vs Temperature (Max.) | | | ppm |
| | -20 to +70°C (Type C) | Per Chart | | |
| | -55 to +105°C (Type B) | Per Chart | | |
| | -55 to +125°C (Type A) | Per Chart | | |
| | vs Supply Voltage (±10% charge) (Max.) | ±2.0 | | |
| | vs Aging (@ +70°C ± 2.0°C) (Max.) | 5 Hz – 4.9 MHz | 5 MHz – 50 MHz | |
| | Per Year | ±5 | ±10 | |
| | For 30 Days | ±1 | ±2 | |
| | For 90 Days | ±2 | ±4 | |
| | Tolerance (@ +25°C ± 1.0°C) (Max.) Within 30 Days of Shipment | ±15.0 | | |
| Temperature Range | Operating | Per Chart | | °C |
| | Storage | -62 to +125 | | |
| Supply Voltage | ±5.0 % | +5.0 | | Vdc |
| Output | | TTL | | |
| Load | | 1 – 10 | | TTL |
| Logic Levels | High (Min.), @ 400 uA Source | 2.4 | | Vdc |
| | Low (Max.), @ 16 mA Sink | 0.5 | | |

| Test Inspection | Product Level **S** Method Condition | Product Level **B** & **C** Method Condition |
|---|---|---|
| Internal Visual | See 4.4.1 | See 4.4.1 |
| Stabization bake (prior to seal) 1/ | MIL-STD-883, method 1011, Condition C (+150°C) 48 hours min. | MIL-STD-883, method 1011, Condition C (+150°C) 48 hours min. |
| Thermal Shock | MIL-STD-883, method 1011, Condition A | N/A |
| Temperature Cycling | MIL-STD-883, method 1010 Condition B | MIL-STD-883, method 1010 Condition B |
| Constant Acceleration | MIL-STD-883, method 2001. Condition A, Y1 only (5000 g's) | MIL-STD-883, method 2001. Condition A, Y1 only (5000 g's) |
| Seal (Fine and Gross Leak) 2/ | See 4.8.2.2.2 | See 4.8.2.2.2 |
| Particle Impact Noise Detection (PIND) | MIL-STD-883, method 2020 Condition B | N/A |
| Electrical Test: | | |
| Input Current Power | 4.8.5 | N/A |
| Output Waveform | 4.8.20 | N/A |
| Output Voltage-Power | 4.8.21 | N/A |
| As Specified | 3.1 | 3.1 |
| Burn-In (Load) | +125C, nominal supply voltage and burn-in load, 240 hours minimum | +125C, nominal supply voltage and burn-in load, 160 hours minimum |
| Electrical Test: | Nominal and extreme supply voltages, specified load, +23°C and temperature extremes, record all test parameters by serial number | Nominal supply voltages, specified load, +23°C and verify frequency at the temperature extremes |
| Input Current Power | 4.8.5 | 4.8.5 |
| Output Waveform | 4.8.20 | 4.8.20 |
| Output Voltage-Power | 4.8.21 | 4.8.21 |
| As Specified | 3.1 | 3.1 |
| Radiographic 3/ | MIL-STD-883, method 2020 | N/A |

PRECISION DEVICES INC

## PACKAGE DIMENSIONS

| PIN | CONNECTION |
|---|---|
| 1 | Output |
| 2 | Case |
| 3-7 | No Connect |
| 8 | Ground |
| 9-13 | No Connect |
| 14 | Supply Voltage |