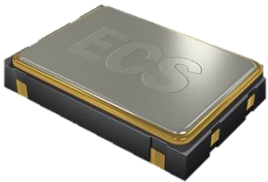


The ECS-3951M-BN (5V) and ECS-3953M-BN (3.3V) Industrial Grade (-40 ~ 85°C) miniature SMD oscillators. Ideal for today's high temperature range applications.

Request a Sample

OPERATING CONDITIONS / ELECTRICAL CHARACTERISTICS

ECS-3951M/3953M-BN



- -40 ~ +85°C Temp Range
- 5 x 7 mm footprint
- ±50 ppm Stability
- PbFree/RoHS Compliant

| Parameters | Conditions | ECS-3951M-BN (5V) | | | ECS-3953M-BN (3.3V)* | | | Units |
|------------------------------|-----------------------|-------------------|------|---------|----------------------|------|---------|-------|
| | | MIN | TYP | MAX | MIN | TYP | MAX | |
| Frequency Range | | 1.800 | | 125.0 | 1.800 | | 125.0 | MHz |
| Operating Temperature | Option (N) | -40 | | +85 | -40 | | +85 | °C |
| Storage Temperature | | -55 | | +125 | -55 | | +125 | °C |
| Supply Voltage | VDD | +4.5 | +5.0 | +5.5 | +2.97 | +3.3 | +3.63 | V DC |
| Frequency Stability* | Option (B) | | | ±50 | | | ±50 | PPM |
| Input Current | 1.800 ~ 36.000 MHz | | | 20 | | | 15 | mA |
| | 36.100 ~ 70.000 MHz | | | 55 | | | 25 | mA |
| | 70.100 ~ 100.000 MHz | | | 60 | | | 30 | mA |
| | 100.100 ~ 125.000 MHz | | | 65 | | | 35 | mA |
| Output Symmetry | @ 50% VDD Level | | | 40/60 | | | 40/60 | % |
| Rise and Fall Times | 1.800 ~ 70.000 MHz | | | 15 | | | 5 | nS |
| | 70.100 ~ 125.000 MHz | | | 5 | | | 5 | nS |
| Logic "0" Level | VOL | | | 10% VDD | | | 10% VDD | VDC |
| Logic "1" Level | VOH | 90% VDD | | | 90% VDD | | | VDC |
| Output Load | HCMOS | | | 30 | | | 15 | pF |
| Start-Up Time | 1.800 ~ 36.000 MHz | | | 5 | | | 5 | mS |
| | 36.100 ~ 70.000 MHz | | | 10 | | | 10 | mS |
| | 70.100 ~ 100.000 MHz | | | 15 | | | 15 | mS |
| Disable Delay Time | | | | 100 | | | 100 | nS |

*ECS-3953M-BN is also compatible with a supply voltage +3.0V DC ±0.3V

* Note: Inclusive of 25°C tolerance, operating temperature range, input voltage change, load change, aging shock and vibration.

Part Numbering Guide: Example ECS-3953M-200-BN-TR

| ECS | Series | Frequency Abbreviations | Stability Tolerance | Temperature | Packaging |
|-----|--------------------------|-------------------------|---------------------|-----------------|-----------------------------|
| ECS | 3951M +5V 3953M +3.3V | 200 = 20 MHz | B = ±50 ppm | N = -40 ~ +85°C | TR = Tape & Reel 1K/Reel |

Package Dimensions (mm)

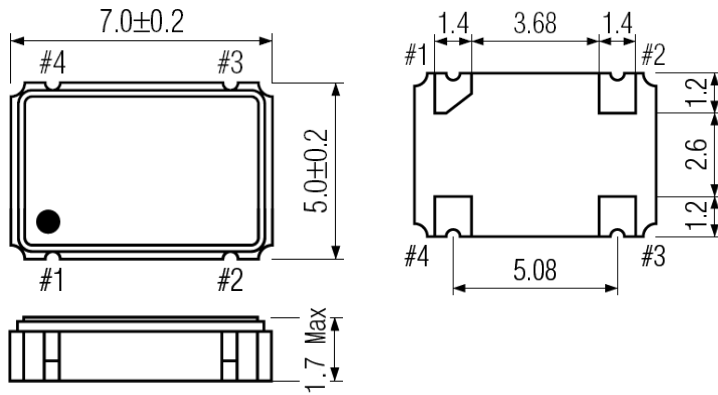


Figure 1) Top, Side, and Bottom views

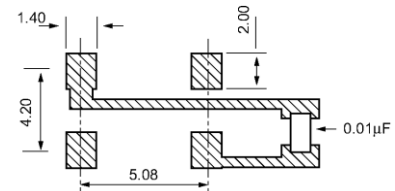


Figure 2) Suggested Land Pattern

| Pin Connections | |
|-----------------|-----------|
| #1 | Tri-State |
| #2 | Ground |
| #3 | Output |
| #4 | VDD |

| Tri-State Control Voltage | |
|---------------------------|----------------|
| Pad 1 | Pad 3 |
| Open | Oscillation |
| +2.2V Min | Oscillation |
| +0.8V Max | No Oscillation |

Note: Internal crystal oscillation to be halted (Pin #1=VIL)