

EC36 Series



ECLIPTEK[®]
CORPORATION

- RoHS Compliant (Pb-Free)
- LVHCMOS output
- 3.3V Supply Voltage
- Ceramic SMD package
- Stability to ± 20 ppm
- Standby Function
- Available on Tape and Reel



NOTES

ELECTRICAL SPECIFICATIONS

| | | |
|--|---|--|
| Frequency Range (F_0) | | 1.544MHz to 100.000MHz |
| Operating Temperature Range (OTR) | | -10°C to 70°C -40°C to 85°C |
| Storage Temperature Range (STR) | | -55°C to 125°C |
| Supply Voltage (V_{DD}) | | 3.3V _{DC} $\pm 10\%$ |
| Input Current (I_{DD}) | 1.544MHz to 9.999MHz | 8mA Maximum |
| | 10.000MHz to 34.999MHz | 10mA Maximum |
| | 35.000MHz to 49.999MHz | 25mA Maximum |
| | 50.000MHz to 70.000MHz | 35mA Maximum |
| | 70.000001MHz to 100MHz | 40mA Maximum |
| Frequency Tolerance/Stability | Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, First Year | ± 100 ppm, ± 50 ppm, 25ppm, or ± 20 ppm Maximum |
| | Aging at 25°C, Shock, and Vibration | |
| Output Voltage Logic High (V_{OH}) | | 90% of V_{DD} Minimum ($I_{OH} = -8$ mA) |
| Output Voltage Logic Low (V_{OL}) | | 10% of V_{DD} Maximum ($I_{OL} = +8$ mA) |
| Rise Time / Fall Time (T_R/T_F) | 20% to 80% of Waveform from 1.544MHz to 35.000MHz | 6 nSeconds Maximum |
| | 20% to 80% of Waveform from 35.001MHz to 80.000MHz | 4 nSeconds Maximum |
| | 20% to 80% of Waveform from 80.001MHz to 100.000MHz | 2 nSeconds Maximum |
| Duty Cycle (SYM) | at 50% of Waveform | 50 ± 10 (%) (Standard) |
| | at 50% of Waveform | 50 ± 5 (%) (Optional) |
| Load Drive Capability (C_{LOAD}) | ≤ 35.000 MHz | 30pF HCMOS Load Maximum |
| | > 35.000 MHz | 15pF HCMOS Load Maximum |
| Tri-State Input Voltage | No Connection | Enables Output |
| | V_{IH} : 90% of V_{DD} Minimum | Enables Output |
| | V_{IL} : 10% of V_{DD} Maximum | Disables Output: High Impedance |
| Standby Current | Disabled Output: High Impedance | 10 μ A Maximum |
| Start Up Time (T_S) | | 10 mSeconds Maximum |
| RMS Phase Jitter | 12kHz to 20MHz offset frequency | 1pSeconds Maximum |

| MANUFACTURER | CATEGORY | SERIES | PACKAGE | VOLTAGE | CLASS | REV. DATE |
|----------------|------------|--------|---------|---------|-------|-----------|
| ECLIPTEK CORP. | OSCILLATOR | EC36 | CERAMIC | 3.3V | OS91 | 01/06 |

PART NUMBERING GUIDE

EC36 00 ET TS - 30.000M TR

FREQUENCY TOLERANCE / STABILITY

00=±100ppm Maximum (Standard)
 45=±50ppm Maximum
 25=±25ppm Maximum
 20=±20ppm Maximum

OPERATING TEMPERATURE RANGE

Blank=-10°C to 70°C (Standard)
 ET=-40°C to 85°C

PACKAGING OPTIONS

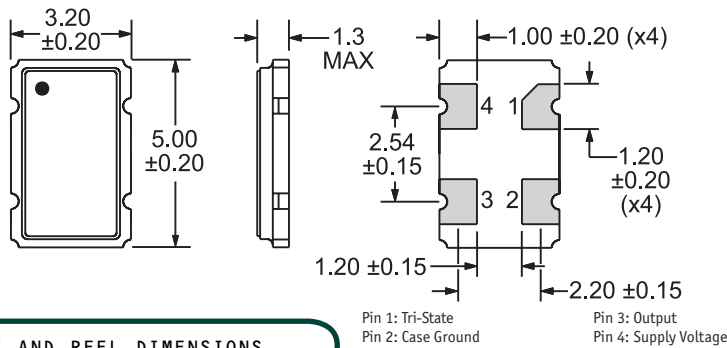
Blank=Bulk (Standard)
 TR=Tape and Reel

FREQUENCY

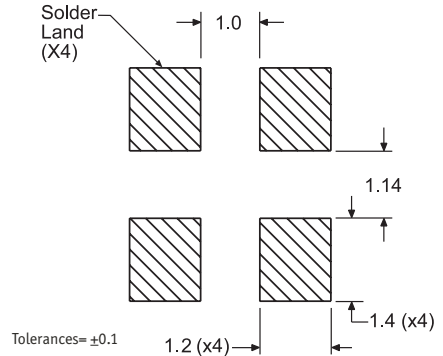
DUTY CYCLE

Blank=50±10%(Standard)
 T=50±5%

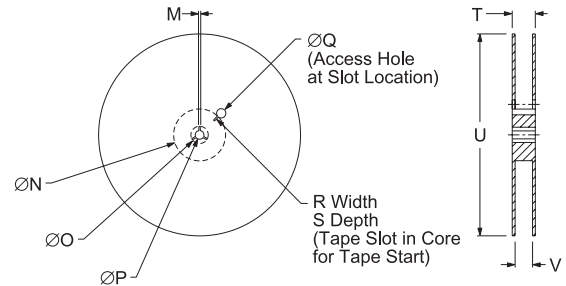
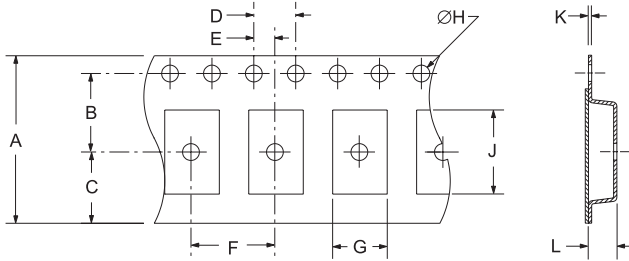
MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



SUGGESTED SOLDER PAD LAYOUT ALL DIMENSIONS IN MILLIMETERS



TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



| TAPE | A | B | C | D | E |
|---------|----------|--------------|---------|------------|---------|
| | 12.0±0.2 | 5.5±0.1 | 6.5±0.1 | 4.0±0.1 | 2.0±0.1 |
| F | G | H | J | K | L |
| 8.0±0.1 | B0* | 1.5 +0.1-0.0 | A0* | 0.30 ±0.05 | K0* |

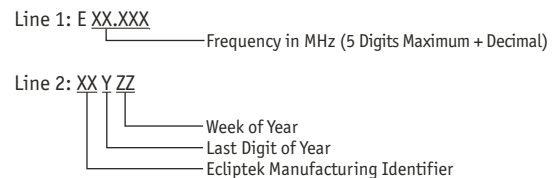
| REEL | M | N | O | P | Q |
|---------|---------|----------|----------|----------|----------|
| | 1.5 MIN | 50 MIN | 20.2 MIN | 13.0±0.2 | 40 MIN |
| R | S | T | U | V | QTY/REEL |
| 2.5 MIN | 10 MIN | 18.4 MAX | 180 MAX | 12.4+2-0 | 1,000 |

*Compliant to EIA 481A

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

| Characteristic | Specification |
|------------------------------|---------------------------------------|
| Fine Leak Test | MIL-STD-883, Method 1014, Condition A |
| Gross Leak Test | MIL-STD-883, Method 1014, Condition C |
| Mechanical Shock | MIL-STD-202, Method 213, Condition C |
| Vibration | MIL-STD-883, Method 2007, Condition A |
| Solderability | MIL-STD-883, Method 2002 |
| Temperature Cycling | MIL-STD-883, Method 1010 |
| Resistance to Soldering Heat | MIL-STD-202, Method 210 |
| Resistance to Solvents | MIL-STD-202, Method 215 |

MARKING SPECIFICATIONS



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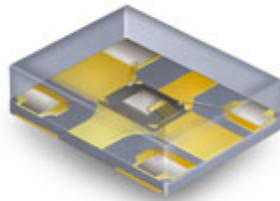
ECLIPTEK[®]
CORPORATION

Ecliptek
MEMS Oscillators

Ecliptek MEMS Oscillators

- Lower Cost, Quicker Delivery Alternative!

The EMO™ family of oscillators offers exceptional performance, shorter delivery and significant cost advantages by utilizing a revolutionary new MEMS resonator technology. This important innovation enables Ecliptek to offer the ultimate in flexibility with delivery of 2 days for samples and 5 to 10 days for quantities up to 10,000 pieces on tape and reel.



| Supply Voltage (V _{DC}) | Package Dimensions (all dimensions in millimeters) | | | |
|--------------------------------------|---|-----------------------|-----------------------|-----------------------|
| | 5 x 7 | 3.2 x 5 | 2.5 x 3.2 | 2 x 2.5 |
| 1.8 | EMK11 | EMK21 | EMK31 | EMK41 |
| 2.5 | EMK12 | EMK22 | EMK32 | EMK42 |
| 3.3 | EMK13 | EMK23 | EMK33 | EMK43 |

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Want to learn more about the Ecliptek EMO™ family of MEMS oscillators?

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Product Features:

- Improved frequency stability through the use of a MEMS resonator
- 1.8VDC, 2.5VDC, or 3.3VDC supply voltages
- Frequency range of 1MHz to 125MHz, HCMOS output
- Frequency stability to ±50ppm, -40°C to +85°C operation
- Tri-state or power down functions
- RoHS compliant
- High temperature +260°C reflow capability
- EIA compliant tape and reel packaging
- Four SMD package sizes

If you have any questions or would like additional information regarding the Ecliptek EMO™ family of oscillators, please contact our [Sales Department](#).