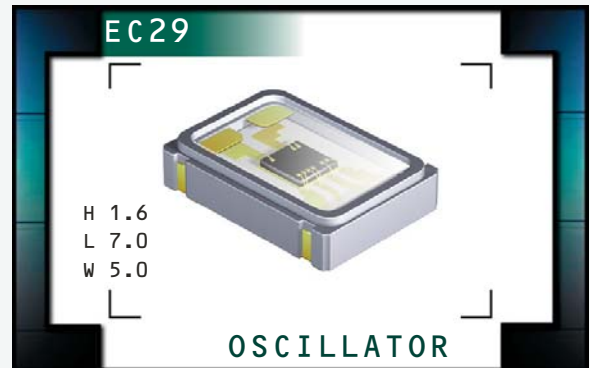


EC29 Series



ECLIPTEK[®]
CORPORATION

- RoHS Compliant (Pb-Free)
- LVHCMOS output
- 1.8V Supply Voltage
- Ceramic SMD package
- Stability to 20ppm
- Standby Function
- Available on Tape and Reel



ELECTRICAL SPECIFICATIONS

Frequency Range (F_0) 1.544MHz to 80.000MHz and 98.304MHz, 100.000MHz, 106.250MHz, 110.000MHz, 125.000MHz

Operating Temperature Range (OTR) 0°C to 70°C
-40°C to 85°C

Storage Temperature Range (STR) -55°C to 125°C

Supply Voltage (V_{DD}) 1.8V_{DC} ±5%

Input Current (I_{DD})

| | |
|--------------------------|--------------|
| 1.544MHz to 10.000MHz | 2mA Maximum |
| 10.001MHz to 25.000MHz | 3mA Maximum |
| 25.001MHz to 40.000MHz | 4mA Maximum |
| 40.001MHz to 50.000MHz | 8mA Maximum |
| 50.001MHz to 70.000MHz | 10mA Maximum |
| 70.001MHz to 100.000MHz | 18mA Maximum |
| 100.001MHz to 110.000MHz | 20mA Maximum |
| 110.001MHz to 125.000MHz | 25mA Maximum |

Frequency Tolerance/Stability Inclusive of all conditions: Calibration Tolerance at 25°C, ±100ppm, ±50ppm, ±25ppm, or
Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, ±20ppm
First Year Aging at 25°C, Shock, and Vibration

Output Voltage Logic High (V_{OH}) $I_{OH}=-2.8mA$, 1.544MHz to 40.000MHz 90% of V_{DD} Minimum
 $I_{OH}=-8mA$, 40.001MHz to 125.000MHz 90% of V_{DD} Minimum

Output Voltage Logic Low (V_{OL}) $I_{OL}=2.8mA$, 1.544MHz to 40.000MHz 10% of V_{DD} Maximum
 $I_{OL}=8mA$, 40.001MHz to 125.000MHz 10% of V_{DD} Maximum

Rise Time / Fall Time (T_R/T_F) < 40.000MHz 10% to 90% of Waveform 6 nSeconds Maximum
≥ 40.000MHz 10% to 90% of Waveform 3 nSeconds Maximum

Duty Cycle (SYM) at 50% of Waveform 50 ±10(%) (Standard)
at 50% of Waveform 50 ±5(%) (Optional)

Load Drive Capability (C_{LOAD}) 15pF HCMOS Load Maximum

Tri-State Input Voltage No Connection Enables Output
 $V_{IH} \geq 90\%$ of V_{DD} Enables Output
 $V_{IL} \leq 10\%$ of V_{DD} Disables Output: High Impedance

Standby Current Disabled Output: High Impedance, 1.544MHz to 40MHz 10µA Maximum
Disabled Output: High Impedance, 40.001MHz to 70MHz 100µA Maximum
Disabled Output: High Impedance, 70.001MHz to 125MHz 10µA Maximum

Start Up Time (T_S) 10 mSeconds Maximum

RMS Phase Jitter 12kHz to 20MHz offset frequency 1pSeconds Maximum

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
EC29

PACKAGE
CERAMIC

VOLTAGE
1.8V

CLASS
OS1B

REV. DATE
01/06

PART NUMBERING GUIDE

EC29 00 ET TTS - 30.000M TR

FREQUENCY TOLERANCE / STABILITY

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

OPERATING TEMPERATURE RANGE

Blank=0°C to 70°C (Standard)
 ET=-40°C to 85°C

PACKAGING OPTIONS

Blank=Bulk (Standard)
 TR=Tape and Reel

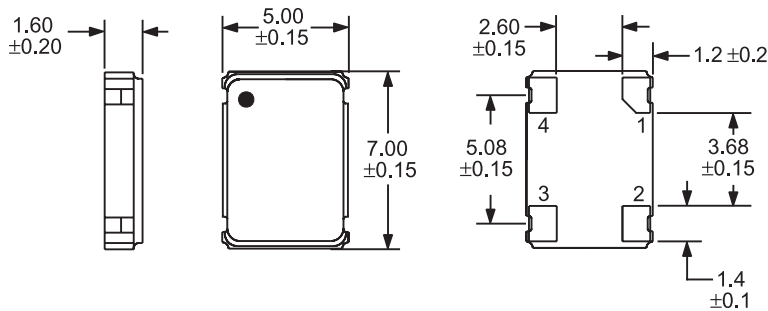
FREQUENCY

DUTY CYCLE

Blank=50 ±10(%) (Standard)
 T=50 ±5(%)

MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS

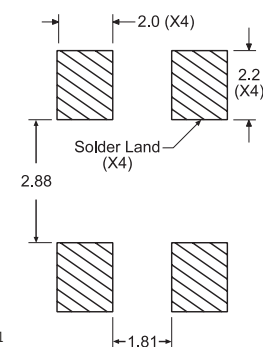


Pin 1: Tri-State
 Pin 2: Case Ground

Pin 3: Output
 Pin 4: Supply Voltage

SUGGESTED SOLDER PAD LAYOUT

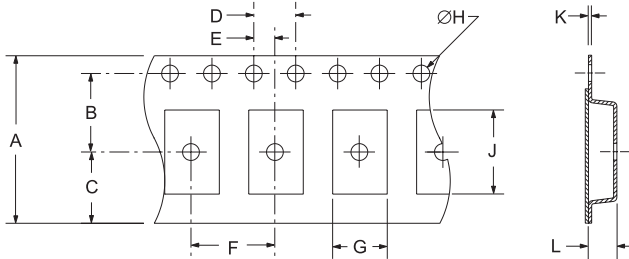
ALL DIMENSIONS IN MILLIMETERS



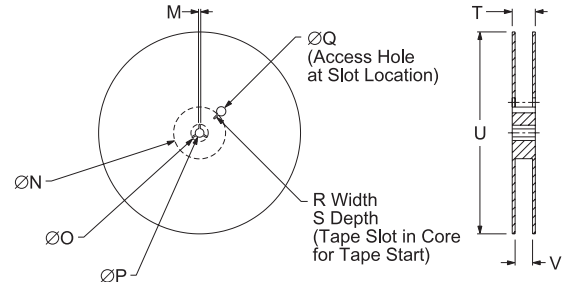
Tolerances= ±0.1

TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



| TAPE | A | B | C | D | E |
|------|----------|-----------|---------|---------|------|
| | 16±.3-.1 | 7.5±.1 | 6.75±.1 | 4 ±.1 | 2±.1 |
| F | G | H | J | K | L |
| 8±.1 | B0* | 1.5 +.1-0 | A0* | .3 ±.05 | K0* |



| REEL | M | N | O | P | Q |
|---------|---------|----------|----------|----------|----------|
| | 1.5 MIN | 50 MIN | 20.2 MIN | 13±.2 | 40 MIN |
| R | S | T | U | V | QTY/REEL |
| 2.5 MIN | 10 MIN | 22.4 MAX | 360 MAX | 16.4±2-0 | 1,000 |

*Compliant to EIA 481A

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic

Fine Leak Test
 Gross Leak Test
 Mechanical Shock
 Vibration
 Solderability
 Temperature Cycling
 Resistance to Soldering Heat
 Resistance to Solvents

Specification

MIL-STD-883, Method 1014, Condition A
 MIL-STD-883, Method 1014, Condition C
 MIL-STD-202, Method 213, Condition C
 MIL-STD-883, Method 2007, Condition A
 MIL-STD-883, Method 2002
 MIL-STD-883, Method 1010
 MIL-STD-202, Method 210
 MIL-STD-202, Method 215

MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: XX.XXX M

Frequency in MHz (5 Digits Maximum + Decimal)

Line 3: XXY ZZ

Week of Year
 Last Digit of Year
 Ecliptek Manufacturing Identifier

| MANUFACTURER | CATEGORY | SERIES | PACKAGE | VOLTAGE | CLASS | REV. DATE |
|----------------|------------|--------|---------|---------|-------|-----------|
| ECLIPTEK CORP. | OSCILLATOR | EC29 | CERAMIC | 1.8V | OS1B | 01/06 |



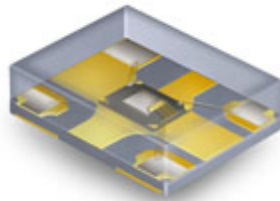
ECLIPTEK[®]
CORPORATION

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 |

Would you like to request EMO™ samples or a quotation now?

[Click Here](#)

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

[Click Here](#)

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](#).