

# EC36 Series



ECLIPTEK<sup>®</sup>  
CORPORATION

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



## NOTES

### ELECTRICAL SPECIFICATIONS

<b>Frequency Range (<math>F_0</math>)</b>		1.544MHz to 100.000MHz
<b>Operating Temperature Range (OTR)</b>		-10°C to 70°C -40°C to 85°C
<b>Storage Temperature Range (STR)</b>		-55°C to 125°C
<b>Supply Voltage (<math>V_{DD}</math>)</b>		3.3V <sub>DC</sub> $\pm 10\%$
<b>Input Current (<math>I_{DD}</math>)</b>	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
<b>Frequency Tolerance/Stability</b>	Inclusive of all conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, First Year	$\pm 100$ ppm, $\pm 50$ ppm, 25ppm, or $\pm 20$ ppm Maximum
	Aging at 25°C, Shock, and Vibration	
<b>Output Voltage Logic High (<math>V_{OH}</math>)</b>		90% of $V_{DD}$ Minimum ( $I_{OH} = -8$ mA)
<b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>		10% of $V_{DD}$ Maximum ( $I_{OL} = +8$ mA)
<b>Rise Time / Fall Time (<math>T_R/T_F</math>)</b>	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
<b>Duty Cycle (SYM)</b>	at 50% of Waveform	50 $\pm 10$ (%) (Standard)
	at 50% of Waveform	50 $\pm 5$ (%) (Optional)
<b>Load Drive Capability (<math>C_{LOAD}</math>)</b>	$\leq 35.000$ MHz	30pF HCMOS Load Maximum
	$> 35.000$ MHz	15pF HCMOS Load Maximum
<b>Tri-State Input Voltage</b>	No Connection	Enables Output
	$V_{IH}$ : 90% of $V_{DD}$ Minimum	Enables Output
	$V_{IL}$ : 10% of $V_{DD}$ Maximum	Disables Output: High Impedance
<b>Standby Current</b>	Disabled Output: High Impedance	10 $\mu$ A Maximum
<b>Start Up Time (<math>T_S</math>)</b>		10 mSeconds Maximum
<b>RMS Phase Jitter</b>	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

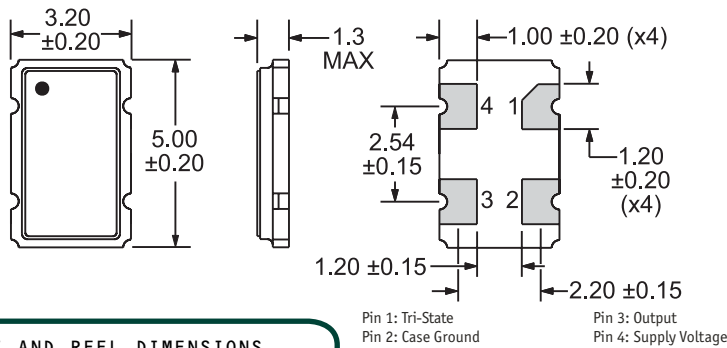
#### FREQUENCY

#### DUTY CYCLE

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

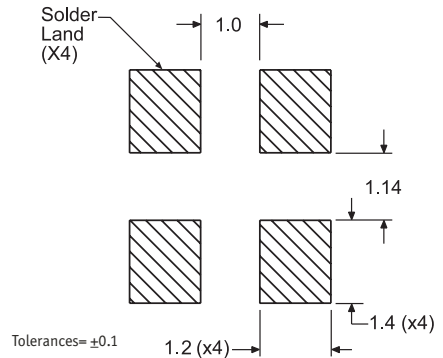
#### MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



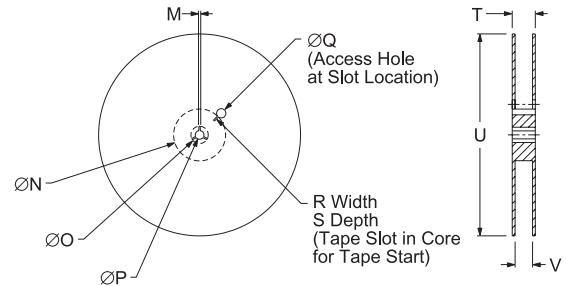
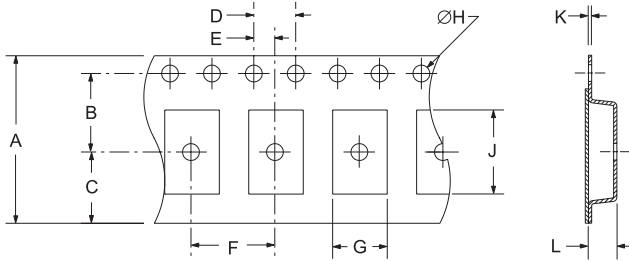
#### SUGGESTED SOLDER PAD LAYOUT

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*

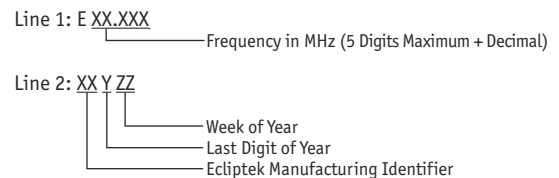
REEL	M	N	O	P	Q
	1.5 MIN	50 MIN	20.2 MIN	13.0±0.2	40 MIN
R	S	T	U	V	QTY/REEL
2.5 MIN	10 MIN	18.4 MAX	180 MAX	12.4+2-0	1,000

\*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 CORP.	OSCILLATOR	EC36	CERAMIC	3.3V	OS91	01/06



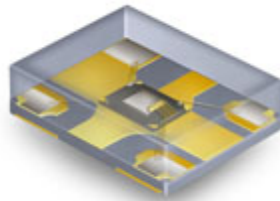
**ECLIPTEK<sup>®</sup>**  
CORPORATION

**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 <sub>DC</sub> )	Package Dimensions (all dimensions in millimeters)			
	5 x 7	3.2 x 5	2.5 x 3.2	2 x 2.5
1.8	<a href="#">EMK11</a>	<a href="#">EMK21</a>	<a href="#">EMK31</a>	<a href="#">EMK41</a>
2.5	<a href="#">EMK12</a>	<a href="#">EMK22</a>	<a href="#">EMK32</a>	<a href="#">EMK42</a>
3.3	<a href="#">EMK13</a>	<a href="#">EMK23</a>	<a href="#">EMK33</a>	<a href="#">EMK43</a>

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

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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](#).