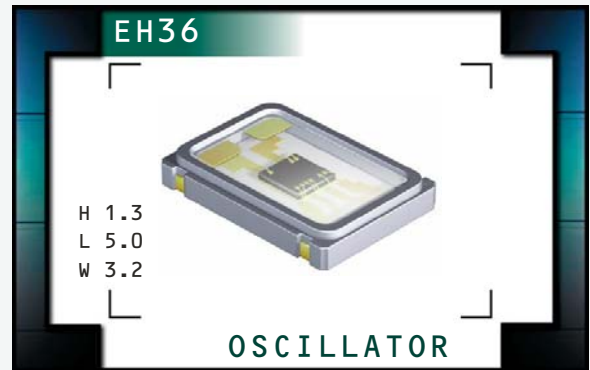


# EH36 Series

- RoHS Compliant (Pb-Free)
- Ceramic SMD package
- 3.3V supply voltage
- LVHCMOS output
- Stability to  $\pm 20$ ppm
- Available on tape and reel



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CORPORATION



## NOTES

## ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>		1.000MHz to 155.520MHz
<b>Operating Temperature Range</b>		0°C to 70°C or -40°C to 85°C
<b>Storage Temperature Range</b>		-55°C to 125°C
<b>Supply Voltage (<math>V_{DD}</math>)</b>		3.3V <sub>DC</sub> $\pm$ 0.3V <sub>DC</sub>
<b>Input Current</b>		35mA Maximum (Unloaded)
<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 Aging at 25°C, Shock, and Vibration	$\pm 100$ ppm, $\pm 50$ ppm, $\pm 25$ ppm, or $\pm 20$ ppm Maximum
<b>Output Voltage Logic High (<math>V_{OH}</math>)</b>		2.7V <sub>DC</sub> Minimum $I_{OH} = -8$ mA
<b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>		0.5V <sub>DC</sub> Maximum $I_{OL} = +8$ mA
<b>Rise Time / Fall Time</b>	$\leq 70.000$ MHz 20% to 80% of Waveform w/HCMOS Load $> 70.000$ MHz 20% to 80% of Waveform w/HCMOS Load	6 nSeconds Maximum 4 nSeconds Maximum
<b>Load Drive Capability</b>	$\leq 70.000$ MHz $> 70.000$ MHz	30pF HCMOS Load Maximum 15pF HCMOS Load Maximum
<b>Duty Cycle (at <math>V_{DD} = 3.3V_{DC}</math>)</b>	at 50% of Waveform	50 $\pm$ 10(%) (Standard) or 50 $\pm$ 5(%) (Optional)
<b>Tri-State Input Voltage</b>	$V_{IH}$ : No Connection or $\geq 2.2V_{DC}$ $V_{IL}$ : $\leq 0.8V_{DC}$	Enables Output Disables Output: High Impedance
<b>Aging (at 25°C)</b>		$\pm 5$ ppm / year Maximum
<b>Start Up Time</b>		10mSeconds Maximum
<b>Period Jitter: Absolute</b>		$\pm 250$ pSec Maximum, $\pm 100$ pSec Typical
<b>Period Jitter: One Sigma</b>		$\pm 50$ pSec Maximum, $\pm 40$ pSec Typical

MANUFACTURER  
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CATEGORY  
OSCILLATOR

SERIES  
EH36

PACKAGE  
CERAMIC

VOLTAGE  
3.3V

CLASS  
0589

REV. DATE  
01/04

### PART NUMBERING GUIDE

## EH36 00 ET TS - 24.000M TR

#### FREQUENCY TOLERANCE / STABILITY

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

#### OPERATING TEMP. RANGE

Blank=0°C to 70°C or  
ET=-40°C to 85°C

#### DUTY CYCLE

Blank=50±10%(Standard)  
T=50±5(%)

#### AVAILABLE OPTIONS

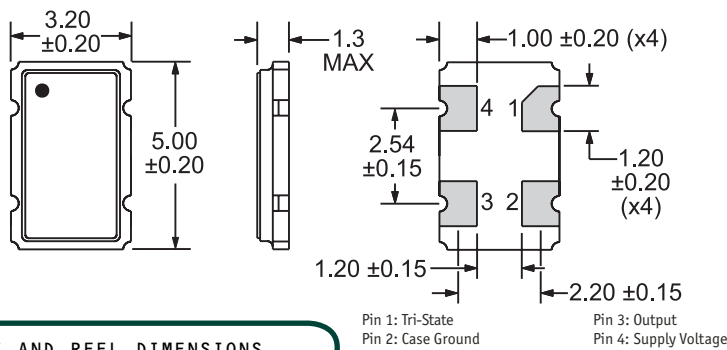
Blank=Bulk (Standard)  
TR=Tape and Reel

#### FREQUENCY

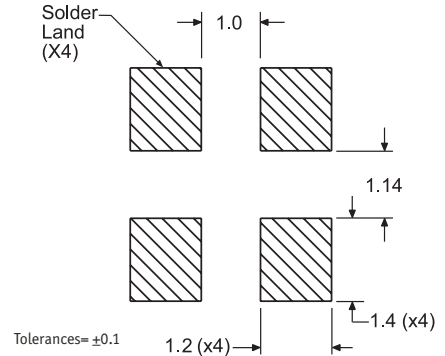
#### OUTPUT CONTROL FUNCTION

TS=Tri-State

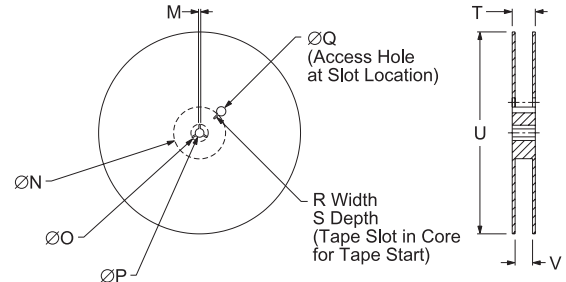
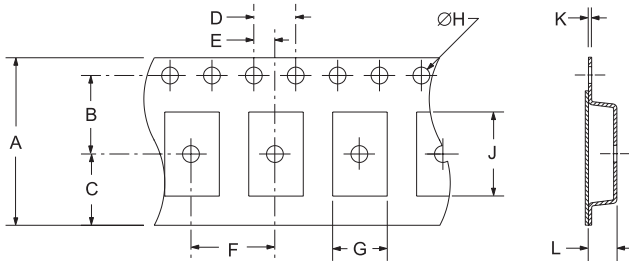
#### MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



#### 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
Lead Integrity	MIL-STD-883, Method 2004
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

Line 1: E XX.XXX Frequency in MHz (5 Digits Maximum + Decimal)

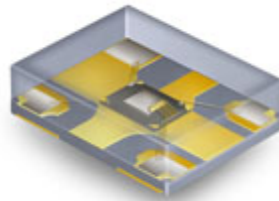
MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EH36	CERAMIC	3.3V	OS89	01/04



### 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?

[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](#).