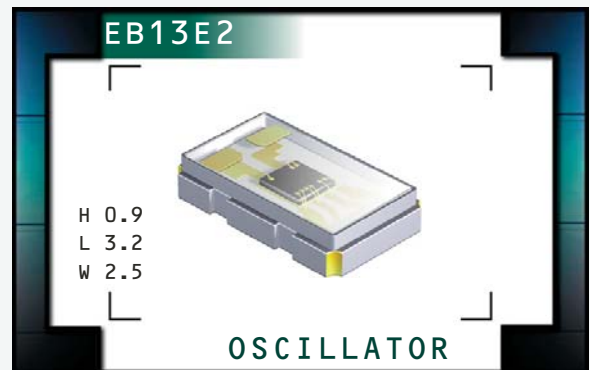


EB13E2 Series



- RoHS Compliant (Pb-Free)
- Ceramic SMD package
- 3.3V Supply Voltage
- LVHCMOS output
- Stability to ± 25 ppm
- Standby Function
- Available on Tape and Reel



NOTES

ELECTRICAL SPECIFICATIONS

Frequency Range (F_0)	1.8432MHz, 2.5MHz, 2.765MHz, 3MHz, 3.072MHz, 3.125MHz, 3.25MHz, 3.5795MHz, 3.6864MHz, 3.75MHz, 4MHz, 4.032MHz, 4.125MHz, 5MHz, 5.5MHz, 5.53MHz, 6MHz, 6.144MHz, 6.25MHz, 6.75MHz, 7.159MHz, 7.25MHz, 7.3728MHz, 8MHz, 8.064MHz, 8.25MHz, 8.2944MHz, 10MHz, 11.059MHz, 11.2896MHz, 12MHz, 12.288MHz, 12.8MHz, 13MHz, 13.5MHz, 14.3181MHz, 14.31818MHz, 14.746MHz, 15MHz, 16MHz, 16.9344MHz, 20MHz, 22MHz, 22.1184MHz, 24MHz, 24.576MHz, 25MHz, 26MHz, 27MHz, 28.375MHz, 28.636MHz, 29.4912MHz, 30MHz, 32MHz, 33MHz, 33.333MHz, 40MHz, 41.010MHz, 44MHz, 48MHz, 50MHz, 54MHz, 64MHz, 66MHz, 66.6666MHz, 72MHz, and 75MHz
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Operating Temperature Range (OTR)	-20°C to 70°C -40°C to 85°C
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Storage Temperature Range (STR)	-55°C to 125°C
--	----------------

Supply Voltage (V_{DD})	3.3V _{DC} $\pm 5\%$
---	------------------------------

Input Current (I_{DD})	1.8432MHz to 20.000MHz	7mA Maximum
	20.001MHz to 40.000MHz	13mA Maximum
	40.001MHz to 60.000MHz	19mA Maximum
	60.001MHz to 75.000MHz	24mA 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 Aging at 25°C, Shock, and Vibration	± 100 ppm, ± 50 ppm, or ± 25 ppm Maximum
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Output Voltage Logic High (V_{OH})	90% of V_{DD} Minimum ($I_{OH} = -4$ mA)
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Output Voltage Logic Low (V_{OL})	10% of V_{DD} Maximum ($I_{OL} = +4$ mA)
---	---

Rise Time / Fall Time (T_R/T_F)	20% to 80% of Waveform	5 nSeconds Maximum
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Duty Cycle (SYM)	at 50% of Waveform	50 ± 5 (%)
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Load Drive Capability (C_{LOAD})	15pF HCMOS Load Maximum
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Tri-State Input Voltage	No Connection	Enables Output
	$V_{IH} \geq 80\%$ of V_{DD}	Enables Output
	$V_{IL} \leq 20\%$ of V_{DD}	Disables Output: High Impedance

Standby Current	Disabled Output: High Impedance	10 μ A Maximum
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Start Up Time (T_S)	10 mSeconds Maximum
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RMS Phase Jitter	$F_J = 12$ kHz to 20MHz	1 pSeconds Maximum
-------------------------	-------------------------	--------------------

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES EB13E2	PACKAGE CERAMIC	VOLTAGE 3.3V	CLASS OS5A	REV. DATE 11/07
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PART NUMBERING GUIDE

EB13E2 E 2 H - 40.000M TR

FREQUENCY TOLERANCE / STABILITY

C=±100ppm Maximum over -20°C to +70°C
 D=±50ppm Maximum over -20°C to +70°C
 E=±25ppm Maximum over -20°C to +70°C
 G=±100ppm Maximum over -40°C to +85°C
 H=±50ppm Maximum over -40°C to +85°C
 J=±25ppm Maximum over -40°C to +85°C

PACKAGING OPTIONS

Blank=Bulk, TR=Tape and Reel (Standard)

FREQUENCY

OUTPUT CONTROL FUNCTION

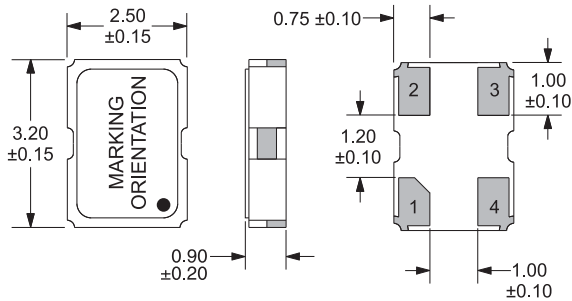
H=Tri-State

DUTY CYCLE

2=50 ±5(%)

MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS

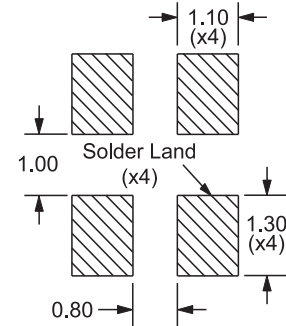


Pin 1: Tri-State
Pin 2: Case Ground

Pin 3: Output
Pin 4: Supply Voltage

SUGGESTED SOLDER PAD LAYOUT

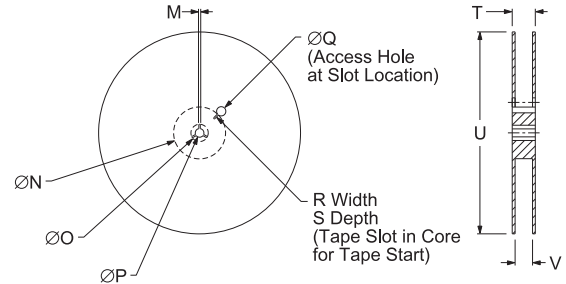
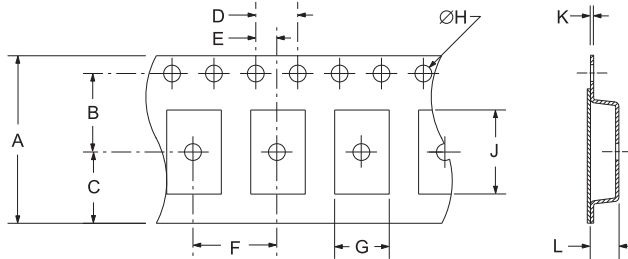
ALL DIMENSIONS IN MILLIMETERS



Tolerances= ±0.1

TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E	
	8.0±0.2	3.5±0.1	2.75±0.1	4.0±0.1	2.0±0.1	
F	G	H	J	K	L	
	4.0±0.1	2.7±.1	1.55+0.5	3.4±.1	0.25±0.05	1.4±.1

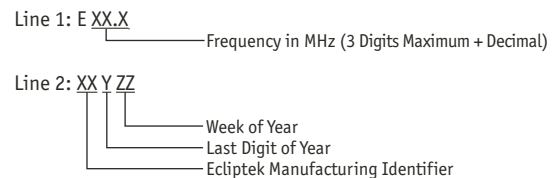
REEL	M	N	O	P	Q	
	1.5 MIN	50 MIN	20.2 MIN	13.0±0.5	40 MIN	
R	S	T	U	V	QTY/REEL	
	2.5 MIN	10 MIN	14.4 MAX	180 MAX	8.4+1.5-0	1,000

*Compliant to EIA 481A

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

PARAMETER	Specification
ESD Susceptibility	MIL-STD-883, Method 3015, Class 1, HBM: 1500VDC
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
Moisture Resistance	MIL-STD-883, Method 1004
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition K
Resistance to Solvents	MIL-STD-202, Method 215
Solderability	MIL-STD-883, Method 2003
Temperature Cycling	MIL-STD-883, Method 1010
Vibration	MIL-STD-883, Method 2007, Condition A

MARKING SPECIFICATIONS



MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EB13E2	CERAMIC	3.3V	OS5A	11/07



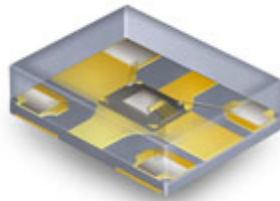
ECLIPTEK[®]
CORPORATION

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](#).