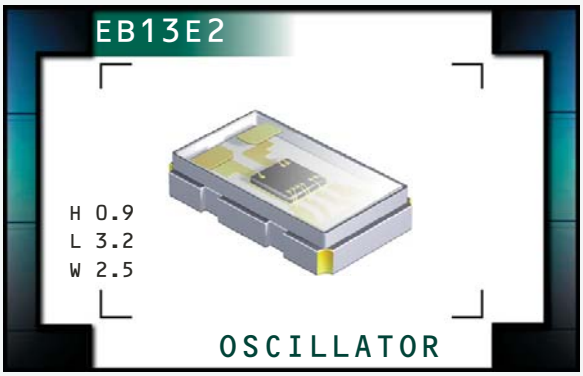
EB13E2 Series

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



ELECTRICAL SPECIFICATIONS

Frequency Range (MHz)	2.000, 2.048, 2.500, 3.000, 3.072, 3.125, 3.250, 3.579545, 3.750, 4.000, 4.096, 4.125, 4.500, 5.000, 6.000, 6.144, 6.250, 6.500, 6.750, 7.159, 8.000, 8.192, 8.250, 9.000, 10.000, 12.000, 12.288, 12.500 , 13.000, 13.500, 14.3181, 14.31818, 15.000, 16.000, 16.384, 16.6666, 16.66667, 16.6667, 16.9344, 18.000, 18.432, 20.000, 24.000, 24.576, 25.000, 26.000, 27.000, 28.636363, 30.000, 32.000, 32.768, 33.000, 33.330, 33.333, 33.3333, 36.000, 38.400, 40.000, 48.000, 50.000, 50.720, 54.000, 58.000, 66.666, 72.000, 98.304, or 100.000MHz	
Operating Temperature Range (OTR)		-20°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} ±5%
Input Current (I_{DD})	2.000MHz to 9.999MHz 10.000MHz to 19.999MHz 20.000MHz to 39.999MHz 40.000MHz to 50.000MHz 50.001MHz to 58.000MHz 58.001MHz to 70.000MHz 70.001MHz to 100.000MHz	3mA Maximum 4mA Maximum 5mA Maximum 6mA Maximum 9mA Maximum 12mA Maximum 14mA 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	±100ppm Maximum ±50ppm Maximum ±25ppm Maximum
Output Voltage Logic High (V_{OH})		90% of V_{DD} Minimum (I_{OH} = -4mA)
Output Voltage Logic Low (V_{OL})		10% of V_{DD} Maximum (I_{OL} = +4mA)
Rise Time / Fall Time (T_R/T_F)	20% to 80% of Waveform, 2MHz to 24MHz 20% to 80% of Waveform, 24.001MHz to 50MHz 20% to 80% of Waveform, 50.001MHz to 100MHz	5nSeconds Maximum 4nSeconds Maximum 3nSeconds Maximum
Duty Cycle (SYM)	at 50% of Waveform	50 ±5(%)
Load Drive Capability (C_{LOAD})		15pF Maximum
Tri-State Input Voltage	No Connection V_{IH}: ≥80% of V_{DD} V_{IL}: ≤20% of V_{DD}	Enables Output Enables Output Disables Output: High Impedance
Standby Current	Disabled Output: High Impedance	10µA Maximum
Start Up Time (T_S)		10 mSeconds Maximum
RMS Phase Jitter	F_J = 12kHz to 20MHz	1 pSeconds Maximum

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EB13E2	CERAMIC	3.3V	OS5A	08/09

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)

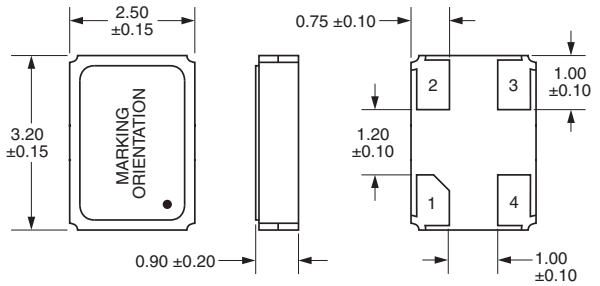
FREQUENCY

OUTPUT CONTROL FUNCTION
H=Tri-State

DUTY CYCLE
2=50 ±5(%)

MECHANICAL DIMENSIONS

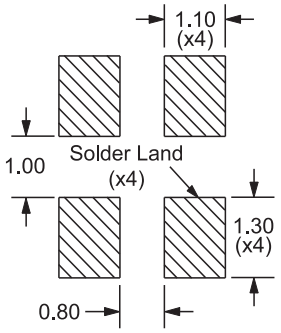
ALL DIMENSIONS IN MILLIMETERS



Pin 1: Tri-State
Pin 2: Case Ground
Pin 3: Output
Pin 4: Supply Voltage

SUGGESTED SOLDER PAD LAYOUT

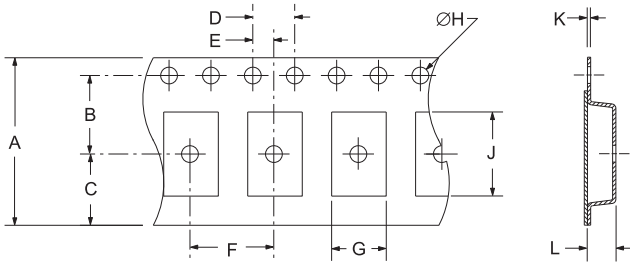
ALL DIMENSIONS IN MILLIMETERS

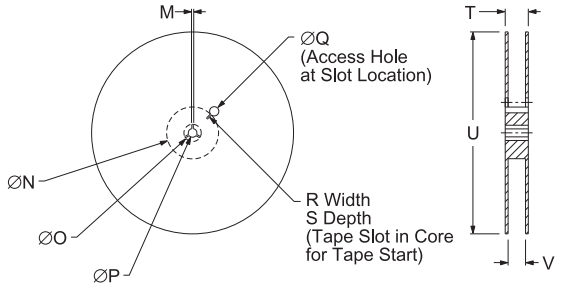


Tolerances= ±0.1

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: 1500V
Fine Leak Test	MIL-STD-883, Method 1014, Condition A
Flammability	UL94-V0
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
Moisture Resistance	MIL-STD-883, Method 1004
Moisture Sensitivity	J-STD-020, MSL 1
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, Condition B
Vibration	MIL-STD-883, Method 2007, Condition A

MARKING SPECIFICATIONS

Line 1: E XX.X
- Frequency in MHz (3 Digits Maximum + Decimal)

Line 2: XX Y ZZ
- Week of Year
- Last Digit of Year
- Ecliptek Manufacturing Identifier

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV - DATE
ECLIPTEK CORP.	OSCILLATOR	EB13E2	CERAMIC	3.3V	OS5A	08/09