

# EB13D1 Series



- Low Jitter
- Pb-free ceramic SMD package
- 3.3V supply voltage
- LVHCMOS Output
- Stability to 20ppm
- Standby Function
- Available in tube or tape and reel



## NOTES

### ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>		19.440MHz to 100.000MHz
<b>Operating Temperature Range</b>		0°C to 70°C -40°C to 85°C
<b>Storage Temperature Range</b>		-55°C to 125°C
<b>Supply Voltage (V<sub>DD</sub>)</b>		3.3V <sub>DC</sub> ±10%
<b>Input Current</b>	19.440MHz to 34.999MHz	10mA Maximum
	35.000MHz to 49.999MHz	25mA Maximum
	50.000MHz to 100.000MHz	35mA 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 Aging at 25°C, Shock, and Vibration	±100ppm, ±50ppm, ±25ppm or ±20ppm Maximum
<b>Output Voltage Logic High (V<sub>OH</sub>)</b>		90% of V <sub>DD</sub> Min. I <sub>OH</sub> = -8mA
<b>Output Voltage Logic Low (V<sub>OL</sub>)</b>		10% of V <sub>DD</sub> Max. I <sub>OL</sub> = +8mA
<b>Rise / Fall Time</b>	20% to 80% of Waveform from 19.440MHz to 35.000MHz	6 nSec Maximum
	20% to 80% of Waveform from 35.001MHz to 80.000MHz	4 nSec Maximum
	20% to 80% of Waveform from 80.001MHz to 100.000MHz	2 nSec Maximum
<b>Duty Cycle</b>	at 50% of Waveform	50 ±10(%)
	at 50% of Waveform	50 ±5(%)
<b>Load Drive Capability</b>	≤ 35.000MHz	30pF HCMOS Load Maximum
	> 35.001MHz	15pF HCMOS Load Maximum
<b>Tri-State Input Voltage</b>	No Connection	Enables Output
	V <sub>IH</sub> : ≥90% of V <sub>DD</sub>	Enables Output
	V <sub>IL</sub> : ≤10% of V <sub>DD</sub>	Disables Output: High Impedance
<b>Standby Current</b>	Disabled Output: High Impedance	10µA Maximum
<b>Start Up Time</b>		10 mSec Maximum
<b>RMS Phase Jitter</b>	19.440MHz to 40.000MHz, F <sub>J</sub> = 12kHz to 20MHz	5 pSec Maximum
	40.001MHz to 70.000MHz, F <sub>J</sub> = 12kHz to 20MHz	3 pSec Maximum
	70.001MHz to 100.000MHz, F <sub>J</sub> = 12kHz to 20MHz	1 pSec Maximum

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EB13D1	CERAMIC	3.3V	OS2U	01/04

## PART NUMBERING GUIDE

### EB13D1 F 2 H - 40.000M TR

#### FREQUENCY TOLERANCE / STABILITY

C=±100ppm Maximum over 0°C to +70°C  
 D=±50ppm Maximum over 0°C to +70°C  
 E=±25ppm Maximum over 0°C to +70°C  
 F=±20ppm Maximum over 0°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  
 K=±20ppm Maximum over -40°C to +85°C

#### PACKAGING OPTIONS

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

#### FREQUENCY

#### OUTPUT CONTROL FUNCTION

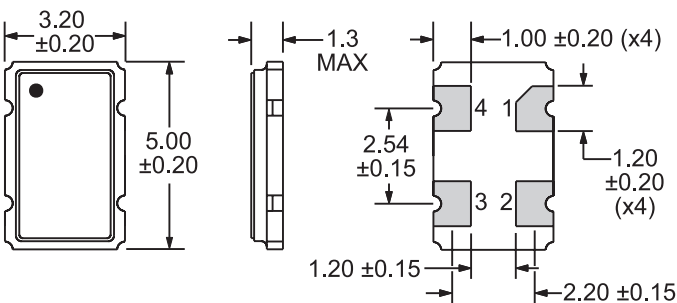
H=Tri-State

#### DUTY CYCLE

1=50 ±10(%)  
 2=50 ±5(%)

#### MECHANICAL DIMENSIONS

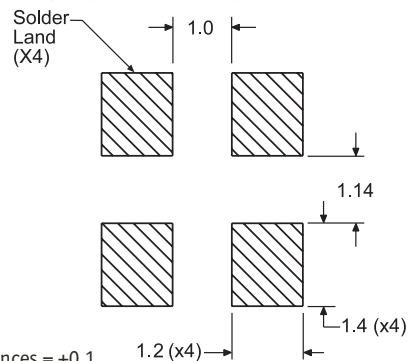
ALL DIMENSIONS IN MILLIMETERS



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

#### SUGGESTED SOLDER PAD LAYOUT

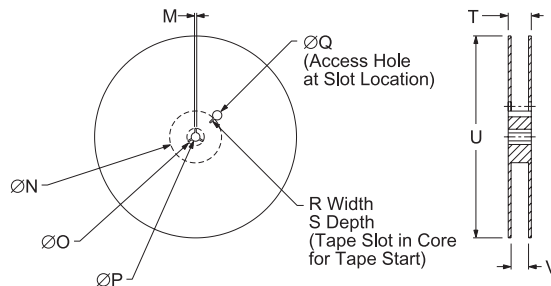
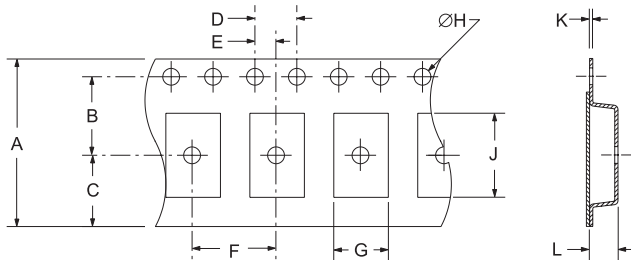
ALL DIMENSIONS IN MILLIMETERS



Tolerances = ±0.1

#### TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
	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

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

\*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: E XX.XXX  
 Frequency in MHz (5 Digits Maximum + Decimal)

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

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