

EB13D1 Series



- RoHS Compliant (Pb-Free)
- Low Jitter
- Ceramic SMD package
- 3.3V supply voltage
- LVHCMOS
- Stability to 20ppm
- Standby Function
- Available in tube or tape and reel



NOTES

ELECTRICAL SPECIFICATIONS

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

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EB13D1	CERAMIC	3.3V	OS2U	12/03

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

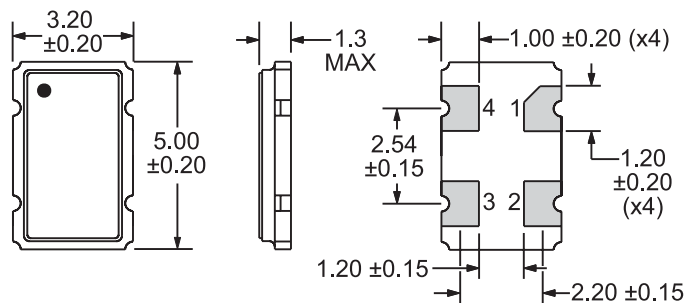
OUTPUT CONTROL FUNCTION

H=Tri-State

DUTY CYCLE

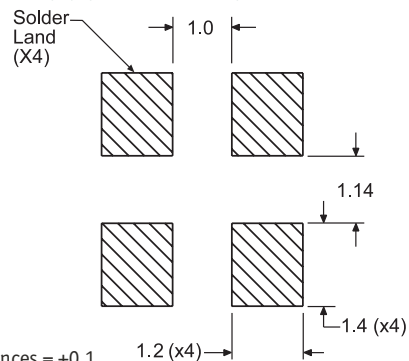
1=50 ±10(%)
 2=50 ±5(%)

MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



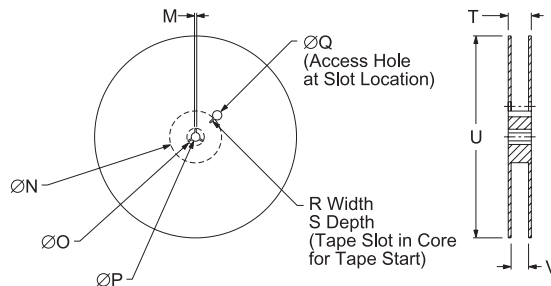
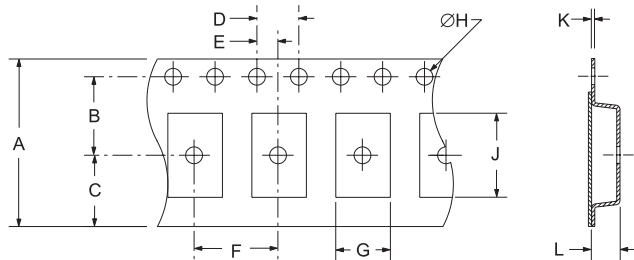
Pin 1: Tri-State
 Pin 2: Case Ground
 Pin 3: Output
 Pin 4: Supply Voltage

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	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

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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