

# EB13C8 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



## ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>	19.440MHz to 125.000MHz and 125.009MHz, 125.009375MHz, 125.010MHz, 127MHz, 128MHz, 130MHz, 132MHz, 133MHz, 133.333MHz, 137.472MHz, 142.850MHz, 150MHz, 155.520MHz and 156.250MHz	
<b>Operating Temperature Range</b>	Not available with $\pm 20$ ppm option > 106.250MHz	0°C to 70°C -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> $\pm 10\%$
<b>Input Current</b>	19.440MHz to 35.000MHz 35.001MHz to 70.000MHz 70.001MHz to 125.000MHz 125.001MHz to 156.250MHz	10mA Maximum 20mA Maximum 40mA Maximum 60mA 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	$\pm 100$ ppm, $\pm 50$ ppm, $\pm 25$ ppm or $\pm 20$ ppm Maximum
<b>Output Voltage Logic High (<math>V_{OH}</math>)</b>		90% of $V_{DD}$ Min. $I_{OH} = -8$ mA
<b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>		10% of $V_{DD}$ Max. $I_{OL} = +8$ mA
<b>Rise / Fall Time</b>	20% to 80% of Waveform w/15pF HCMOS Load from 19.440MHz to 35.000MHz 20% to 80% of Waveform w/30pF HCMOS Load from 19.440MHz to 35.000MHz 20% to 80% of Waveform w/HCMOS Load from 35.001MHz to 50.000MHz 20% to 80% of Waveform w/HCMOS Load from 50.001MHz to 80.000MHz 20% to 80% of Waveform w/HCMOS Load from 80.001MHz to 125.000MHz 20% to 80% of Waveform w/HCMOS Load from 125.009MHz to 156.250MHz	5 nSec Maximum 7 nSec Maximum 5 nSec Maximum 4 nSec Maximum 2 nSec Maximum 1 nSec Maximum
<b>Duty Cycle</b>	at 50% of Waveform at 50% of Waveform $\leq 125.000$ MHz at 50% of waveform, at 25°C, at 3.3Vdc > 125.000MHz	50 $\pm 10$ (%) 50 $\pm 5$ (%) 50 $\pm 5$ (%)
<b>Load Drive Capability</b>	$\leq 35.000$ MHz > 35.001MHz	30pF HCMOS Load Maximum 15pF HCMOS Load Maximum
<b>Tri-State Input Voltage</b>	No Connection $V_{IH} \geq 70\%$ of $V_{DD}$ $V_{IL} \leq 30\%$ of $V_{DD}$	Enables Output Enables Output Disables Output: High Impedance
<b>Standby Current</b>	Disabled Output: High Impedance	10 $\mu$ A Maximum
<b>Start Up Time</b>		10 mSec Maximum
<b>RMS Phase Jitter</b>	19.440MHz to 40.000MHz, $F_j = 12$ kHz to 20MHz 40.001MHz to 70.000MHz, $F_j = 12$ kHz to 20MHz 70.001MHz to 156.250MHz, $F_j = 12$ kHz to 20MHz	5 pSec Maximum 3 pSec Maximum 1 pSec Maximum

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES EB13C8	PACKAGE CERAMIC	VOLTAGE 3.3V	CLASS OS2H	REV. DATE 04/05
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## PART NUMBERING GUIDE

### EB13C8 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

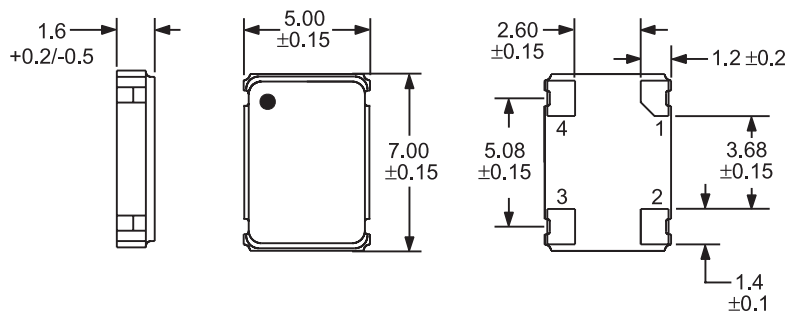
H=Tri-State

#### DUTY CYCLE

1=50 ±10(%)  
 2=50 ±5(%)

#### MECHANICAL DIMENSIONS

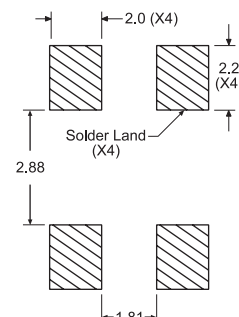
ALL DIMENSIONS IN MILLIMETERS



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

#### SUGGESTED SOLDER PAD LAYOUT

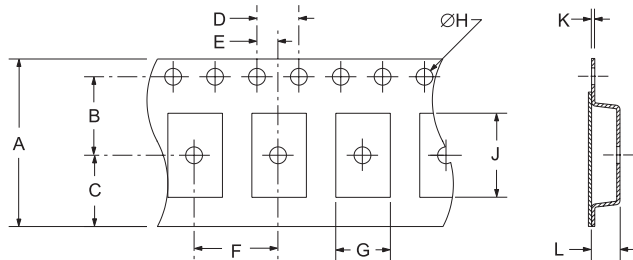
ALL DIMENSIONS IN MILLIMETERS



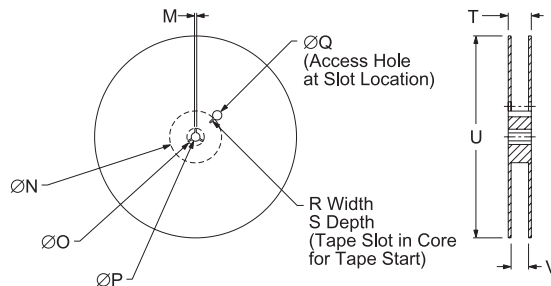
Tolerances = ±0.1

#### TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
	16+3-.1	7.5±.1	6.75±.1	4±.1	2±.1
F	G	H	J	K	L
8±.1	B0*	1.5+1-0	A0*	.3±.05	K0*



REEL	M	N	O	P	Q
	1.5 MIN	50 MIN	20.2 MIN	13±.2	40 MIN
R	S	T	U	V	QTY/REEL
2.5 MIN	10 MIN	22.4 MAX	360 MAX	16.4+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
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: ECLIPTEK

Line 2: XX.XXX M

Frequency in MHz (5 Digits Maximum + Decimal)

Line 3: XX Y ZZ

Week of Year  
 Last Digit of Year  
 Ecliptek Manufacturing Identifier

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EB13C8	CERAMIC	3.3V	OS2H	04/05