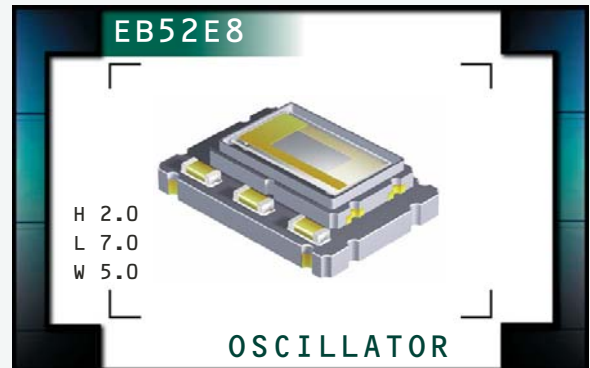


# EB52E8 Series



**ECLIPTEK**<sup>®</sup>  
CORPORATION

- RoHS Compliant (Pb-free)
- Temperature Compensated Crystal Oscillator (TCXO)
- HCMOS Output
- 3.3V Supply Voltage
- Ceramic 10-Pad SMD Package
- Stability to 0.5ppm
- External Voltage Control Option Available



## ELECTRICAL SPECIFICATIONS

<b>Nominal Frequency (MHz)</b>	6.000, 6.144, 6.400, 6.500, 8.000, 8.192, 9.216, 9.600, 9.720, 10.000, 12.000, 12.288, 12.800, 13.000, 13.560, 14.400, 14.850, 16.000, 16.384, 16.800, 18.432, 19.200, 19.440, 19.800, 20.000, 24.000, 24.5535, 24.576, 25.000, 26.000	
<b>Frequency Stability</b>	vs. Operating Temperature Range ( $V_{DD} = 3.3V_{DC}$ , $V_C = 1.65V_{DC}$ ) vs. Frequency Tolerance ( $25^{\circ}C \pm 2^{\circ}C$ , $V_{DD} = 3.3V_{DC}$ , $V_C = 1.65V_{DC}$ ) vs. Input Voltage ( $\pm 5\%$ ) vs. Load ( $\pm 10\%$ ) vs. Aging (at $25^{\circ}C$ )	See Part Numbering Guide $\pm 1.0$ ppm Maximum $\pm 0.3$ ppm Maximum $\pm 0.3$ ppm Maximum $\pm 1$ ppm / Year Maximum
<b>Operating Temperature Range</b>		See Part Numbering Guide
<b>Supply Voltage (<math>V_{DD}</math>)</b>		$3.3V_{DC} \pm 5\%$
<b>Input Current</b>		10mA Maximum
<b>Output Voltage Logic High (<math>V_{OH}</math>)</b>	$I_{OH} = -4mA$	90% of $V_{DD}$ Minimum
<b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>	$I_{OL} = +4mA$	10% of $V_{DD}$ Maximum
<b>Rise/Fall Time</b>	Measured at 20% to 80% of Waveform	5nSec Maximum
<b>Duty Cycle</b>	Measured at 50% of Waveform	$50 \pm 5(\%)$ Maximum
<b>Load Drive Capability</b>		15pF HCMOS Load
<b>External Trim (Control Voltage Option)</b>	$1.65V_{DC} \pm 1.65V_{DC}$ ; Positive Transfer Characteristic	$\pm 5$ ppm Minimum
<b>Control Voltage Range</b>		$0.0V_{DC}$ to $V_{DD}$
<b>Linearity</b>		5% Maximum
<b>Input Impedance</b>		100kOhms Minimum
<b>Typical Phase Noise (at 12.800MHz)</b>	At offset of 10Hz At offset of 100Hz At offset of 1kHz At offset of $\geq 10kHz$	-80dBc/Hz -115dBc/Hz -135dBc/Hz -145dBc/Hz
<b>Tri-State Input Voltage (<math>V_{IH}</math> and <math>V_{IL}</math>)</b>	No Connect $+0.9V_{DD}$ Minimum $+0.1V_{DD}$ Maximum	Enables Output Enables Output Disables Output: High Impedance
<b>RMS Phase Jitter</b>	$F_J = 12kHz$ to 20MHz	1pSec Maximum
<b>Start Up Time</b>		5mSec Maximum
<b>Storage Temperature Range</b>		$-40^{\circ}C$ to $125^{\circ}C$

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
OSCILLATOR

SERIES  
EB52E8

PACKAGE  
CERAMIC

VOLTAGE  
3.3V

CLASS  
OS5P

REV. DATE  
04/07

## PART NUMBERING GUIDE

### EB52E8 C 2 V - 13.000M TR

#### OPERATING TEMPERATURE RANGE

C=-20°C to 70°C  
E=-40°C to 85°C

#### PACKAGING OPTIONS

Blank=Bulk  
TR=Tape and Reel

#### FREQUENCY STABILITY

2 = ±0.5ppm Maximum  
3 = ±1.0ppm Maximum  
4 = ±1.5ppm Maximum  
5 = ±2.0ppm Maximum  
6 = ±2.5ppm Maximum

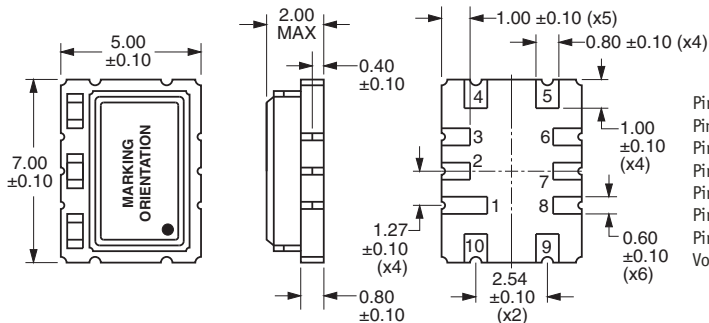
#### FREQUENCY

#### EXTERNAL TRIM

N=None (No Connection on Pad 10)  
V=Voltage Control

#### MECHANICAL DIMENSIONS

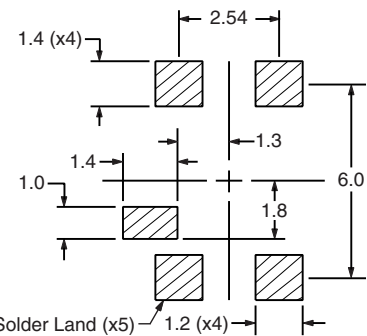
ALL DIMENSIONS IN MILLIMETERS



Pin 1-3: Do Not Connect  
Pin 4: Ground  
Pin 5: Output  
Pin 6-7: Do Not Connect  
Pin 8: Tri-State  
Pin 9: Supply Voltage  
Pin 10: No Connect or Voltage Control

#### SUGGESTED SOLDER PAD LAYOUT

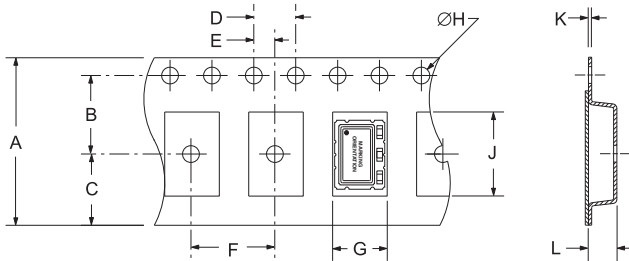
ALL DIMENSIONS IN MILLIMETERS



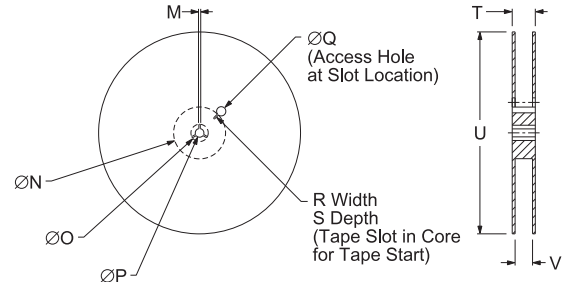
Tolerances = ±0.1

#### TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
	16.0±0.2	7.5±0.1	6.75±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*	0.32 ±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	22.4 MAX	360 MAX	16.4±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 2003  
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

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EB52E8	CERAMIC	3.3V	OS5P	04/07