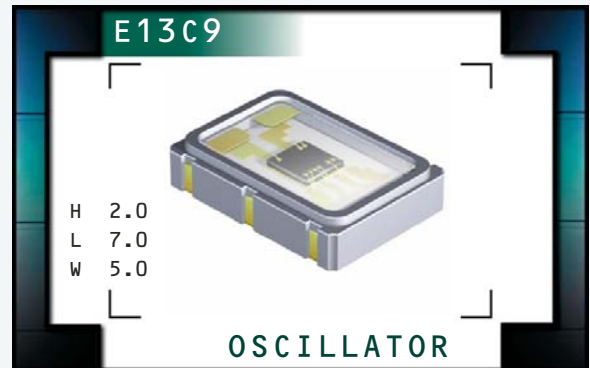


# E13C9 Series



- RoHS Compliant (Pb-Free)
- LVPECL Output Oscillators
- 3.3V Supply Voltage
- AT-Cut Fundamental Mode Inverted Mesa Crystal
- Ceramic 6-pad SMD Package
- Stability to 25ppm
- Tri-State Enable High and Enable Low Options Available on Pad 1 or Pad 2
- Complementary Output
- Wide Range of Available Frequencies



## ELECTRICAL SPECIFICATIONS

<b>Nominal Frequency</b>	19.440MHz to 200.000MHz	
<b>Operating Temperature Range</b>	0°C to 70°C, or -40°C to +85°C	
<b>Storage Temperature Range</b>	-55°C to 125°C	
<b>Supply Voltage (V<sub>CC</sub>)</b>	3.3V <sub>DC</sub> ±5%	
<b>Input Current</b>	75mA 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, 1st Year Aging at 25°C, Shock, and Vibration	±100ppm, ±50ppm, or ±25ppm Maximum
<b>Output Voltage Logic High (V<sub>OH</sub>)</b>	V <sub>CC</sub> -1.025V <sub>DC</sub> Minimum	
<b>Output Voltage Logic Low (V<sub>OL</sub>)</b>	V <sub>CC</sub> -1.620V <sub>DC</sub> Maximum	
<b>Rise Time / Fall Time</b>	20% to 80% of waveform	1.5 nSeconds Maximum, 600 pSec Typical
<b>Duty Cycle</b>	at 50% of waveform	50 ±10(%) 50 ±5(%)
<b>Load Drive Capability</b>	50 Ohms into V <sub>CC</sub> -2.0V <sub>DC</sub>	
<b>Logic Control / Additional Output</b>	No Connect and Complementary Output or Tri-State and Complementary Output	
<b>Enable High Tri-State Input Voltage</b>	Enable High or Enable Low V <sub>IH</sub> of 70% of V <sub>CC</sub> Minimum No Connection V <sub>IL</sub> of 30% of V <sub>CC</sub> Maximum	Enables Output Enables Output Disables Output: High Impedance
<b>Enable Low Tri-State Input Voltage</b>	V <sub>IH</sub> of 70% of V <sub>CC</sub> Minimum No Connection V <sub>IL</sub> of 30% of V <sub>CC</sub> Maximum	Disables Output: High Impedance Enables Output Enables Output
<b>Output Disable Current</b>	25mA Maximum	
<b>Start Up Time</b>	10 mSeconds Maximum	
<b>RMS Phase Jitter</b>	< 44.736MHz; F <sub>J</sub> = 12kHz to 20MHz ≥ 44.736MHz, < 77.760MHz; F <sub>J</sub> = 12kHz to 20MHz ≥ 77.760MHz; F <sub>J</sub> = 12kHz to 20MHz	5 pSec Maximum 2 pSec Maximum 1 pSec Maximum
<b>Phase Noise (at 155.520MHz)</b>	at 10Hz Offset at 100Hz Offset at 1kHz Offset at 10kHz Offset at 100kHz Offset	-75dBc/Hz Typical -95dBc/Hz Typical -125dBc/Hz Typical -140dBc/Hz Typical -145dBc/Hz Typical

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
OSCILLATOR

SERIES  
E13C9

PACKAGE  
CERAMIC

VOLTAGE  
3.3V

CLASS  
OS1T

REV. DATE  
06/04

## PART NUMBERING GUIDE

### E13C9 E 2 F - 155.520M TR

#### FREQUENCY TOLERANCE & STABILITY/ OPERATING TEMPERATURE RANGE

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  
 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

#### DUTY CYCLE

1=50% ±10%, 2=50% ±5%

#### AVAILABLE OPTIONS

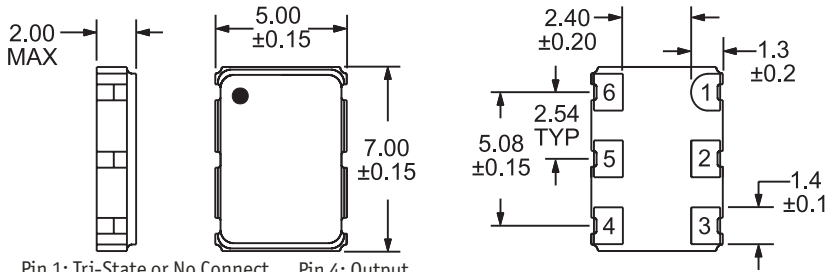
Blank=Tubes  
 TR=Tape and Reel (Standard)

#### FREQUENCY

#### LOGIC CONTROL/ADDITIONAL OUTPUT

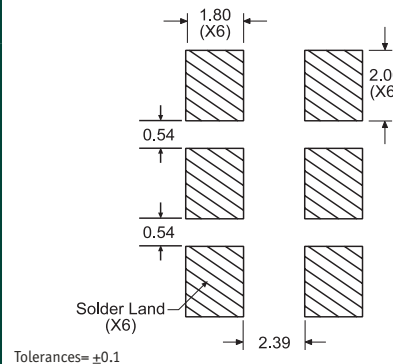
C=No Connect and Complementary Output  
 F=Tri-State (Enable High) on Pad 1 and Complementary Output  
 H=Tri-State (Enable High) on Pad 2 and Complementary Output  
 J=Tri-State (Enable Low) on Pad 1 and Complementary Output  
 K=Tri-State (Enable Low) on Pad 2 and Complementary Output

#### MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS

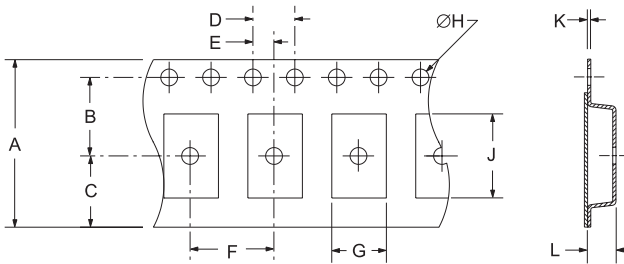


Pin 1: Tri-State or No Connect  
 Pin 2: Tri-State or No Connect  
 Pin 3: Case Ground  
 Pin 4: Output  
 Pin 5: Complementary Output  
 Pin 6: Supply Voltage

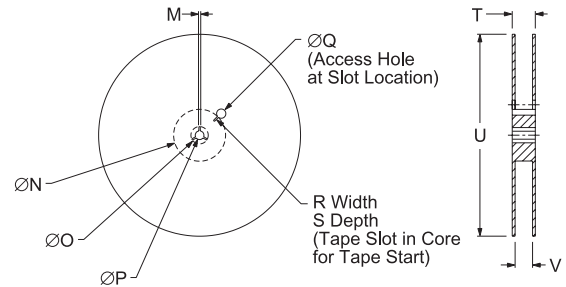
#### SUGGESTED SOLDER PAD LAYOUT ALL DIMENSIONS IN MILLIMETERS



#### 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	E13C9	CERAMIC	3.3V	OS1T	06/04