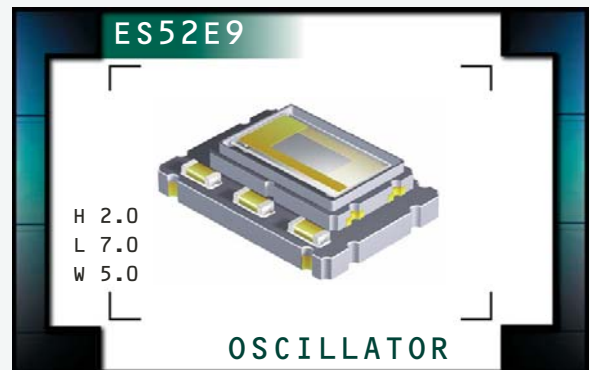


# ES52E9 Series



www.DataSheet4U.com®  
ECLIPTEK CORPORATION

- RoHS Compliant (Pb-free)
- Temperature Compensated Crystal Oscillator (TCXO)
- Stratum 3
- Clipped Sinewave Output
- 3.3V Supply Voltage
- Ceramic 10-Pad SMD Package
- External Voltage Control Option Available



## NOTES

### ELECTRICAL SPECIFICATIONS

<b>Nominal Frequency (MHz)</b>	10.000, 12.288, 12.800, 13.000, 16.000, 19.440	
<b>Frequency Stability</b>	vs. Operating Temperature Range ( $V_{DD} = 3.3V_{DC}$ , $V_C = 1.5V_{DC}$ )	$\pm 0.28$ ppm Maximum
<b>Total Holdover Stability</b>	Inclusive of Frequency Stability and 24 Hours Aging	$\pm 0.37$ ppm Maximum
<b>Total Frequency Tolerance</b>	Inclusive of Frequency Tolerance, Frequency Stability, $V_{DD}$ ( $\pm 1\%$ ), Load ( $\pm 5\%$ ), Solder Reflow, and 20 Years Aging	$\pm 4.6$ ppm 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>	10.000MHz to 14.999MHz 15.000MHz to 19.440MHz	1.5mA Maximum 2.0mA Maximum
<b>Output Voltage</b>	External DC-Cut Capacitor Required, 150pF Recommended	$0.8V_{p-p}$ Clipped Sinewave Minimum
<b>Load Drive Capability</b>		10kOhms // 10pF
<b>External Trim (Control Voltage Option)</b>	$1.5V_{DC} \pm 1.0V_{DC}$ ; 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 $\geq 10$ kHz	-80dBc/Hz -115dBc/Hz -135dBc/Hz -145dBc/Hz
<b>RMS Phase Jitter</b>	$F_J = 12$ kHz to 20MHz	1pSec Maximum
<b>Start Up Time</b>		5mSec Maximum
<b>Storage Temperature Range</b>		-40°C to 125°C

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES ES52E9	PACKAGE CERAMIC	VOLTAGE 3.3V	CLASS 055R	REV. DATE 09/07
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# PART NUMBERING GUIDE

www.DataSheet4U.com

## ES52E9 C 1 V - 13.000M TR

### OPERATING TEMPERATURE RANGE

B=-10°C to 60°C  
C=-20°C to 70°C

### PACKAGING OPTIONS

Blank=Bulk  
TR=Tape and Reel

### FREQUENCY STABILITY

1 = ±0.28ppm Maximum

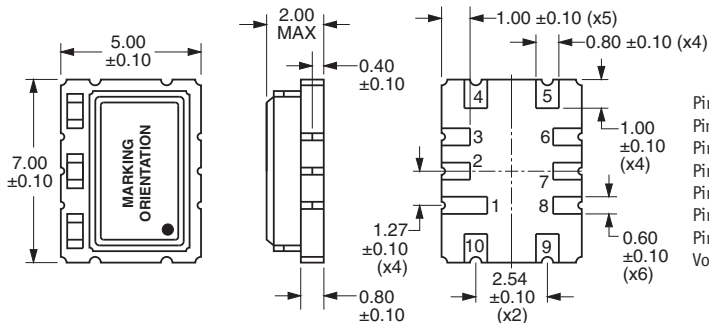
### FREQUENCY

### EXTERNAL TRIM

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

### MECHANICAL DIMENSIONS

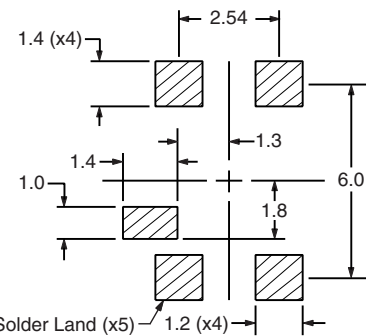
ALL DIMENSIONS IN MILLIMETERS



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

### SUGGESTED SOLDER PAD LAYOUT

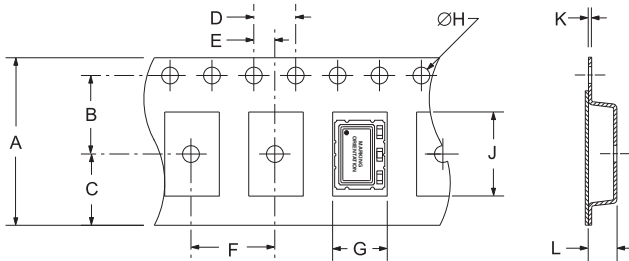
ALL DIMENSIONS IN MILLIMETERS



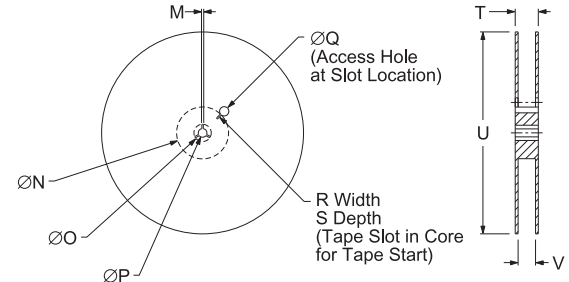
Tolerances = ±0.1

### 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	ES52E9	CERAMIC	3.3V	OS5R	09/07