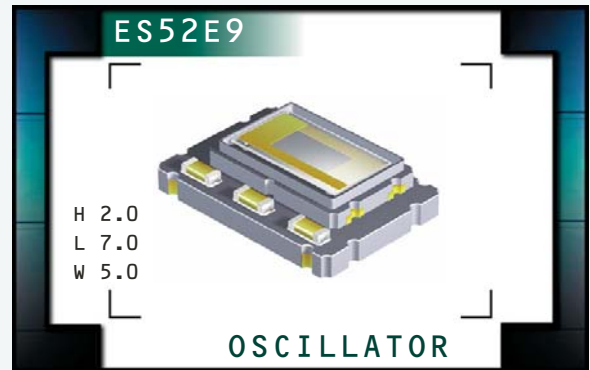


ES52E9 Series



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

Nominal Frequency (MHz)	10.000, 12.288, 12.800, 13.000, 16.000, 19.440	
Frequency Stability	vs. Operating Temperature Range ($V_{DD} = 3.3V_{DC}$, $V_C = 1.5V_{DC}$)	± 0.28 ppm Maximum
Total Holdover Stability	Inclusive of Frequency Stability and 24 Hours Aging	± 0.37 ppm Maximum
Total Frequency Tolerance	Inclusive of Frequency Tolerance, Frequency Stability, V_{DD} ($\pm 1\%$), Load ($\pm 5\%$), Solder Reflow, and 20 Years Aging	± 4.6 ppm Maximum
Operating Temperature Range		See Part Numbering Guide
Supply Voltage (V_{DD})		$3.3V_{DC} \pm 5\%$
Input Current	10.000MHz to 14.999MHz 15.000MHz to 19.440MHz	1.5mA Maximum 2.0mA Maximum
Output Voltage	External DC-Cut Capacitor Required, 150pF Recommended	$0.8V_{p-p}$ Clipped Sinewave Minimum
Load Drive Capability		10kOhms // 10pF
External Trim (Control Voltage Option)	$1.5V_{DC} \pm 1.0V_{DC}$; Positive Transfer Characteristic	± 5 ppm Minimum
Control Voltage Range		$0.0V_{DC}$ to V_{DD}
Linearity		5% Maximum
Input Impedance		100kOhms Minimum
Typical Phase Noise (at 12.800MHz)	At offset of 10Hz At offset of 100Hz At offset of 1kHz At offset of ≥ 10 kHz	-80dBc/Hz -115dBc/Hz -135dBc/Hz -145dBc/Hz
RMS Phase Jitter	$F_J = 12$ kHz to 20MHz	1pSec Maximum
Start Up Time		5mSec Maximum
Storage Temperature Range		-40°C to 125°C

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES ES52E9	PACKAGE CERAMIC	VOLTAGE 3.3V	CLASS OS5R	REV. DATE 09/07
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PART NUMBERING GUIDE

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

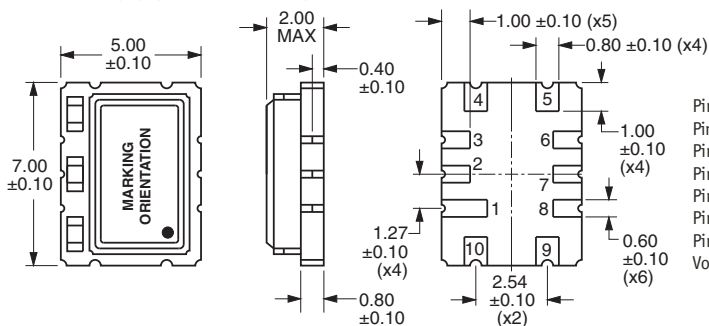
FREQUENCY

EXTERNAL TRIM

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

MECHANICAL DIMENSIONS

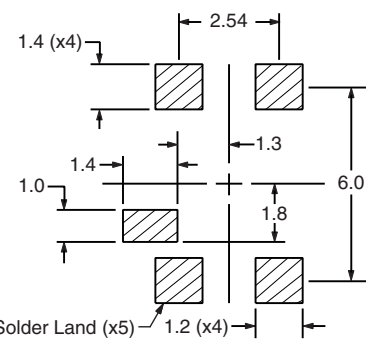
ALL DIMENSIONS IN MILLIMETERS



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

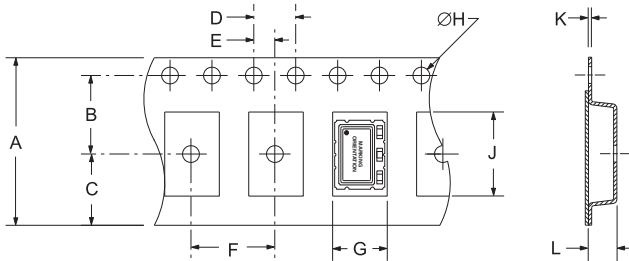
ALL DIMENSIONS IN MILLIMETERS



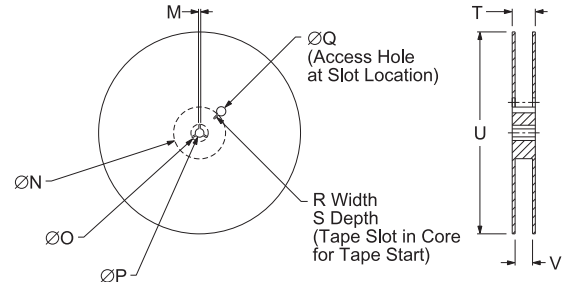
Tolerances = ±0.1

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