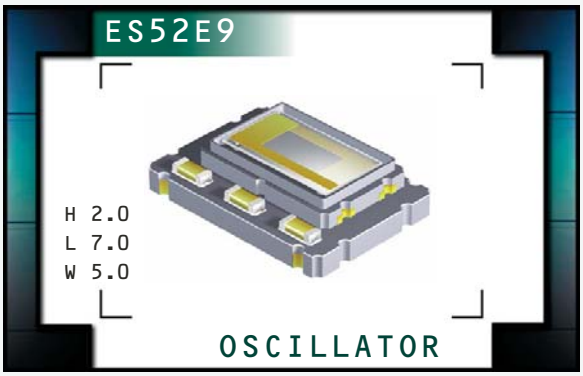
ES52E9 Series

- 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})	±0.28ppm Maximum
Total Holdover Stability	Inclusive of Frequency Stability and 24 Hours Aging	±0.37ppm Maximum
Total Frequency Tolerance	Inclusive of Frequency Tolerance, Frequency Stability, V_{DD} (±1%), Load (±5%), Solder Reflow, and 20 Years Aging	±4.6ppm Maximum
Operating Temperature Range		See Part Numbering Guide
Supply Voltage (V_{DD})		3.3V_{DC} ±5%
Input Current	10.000MHz to 14.999MHz	1.5mA Maximum
	15.000MHz to 19.440MHz	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} ±1.0V_{DC}; Positive Transfer Characteristic	±5ppm 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	-80dBc/Hz
	At offset of 100Hz	-115dBc/Hz
	At offset of 1kHz	-135dBc/Hz
	At offset of ≥10kHz	-145dBc/Hz
RMS Phase Jitter	F_J = 12kHz to 20MHz	1pSec Maximum
Start Up Time		5mSec Maximum
Storage Temperature Range		-40°C to 125°C

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

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

FREQUENCY STABILITY
1 = ±0.28ppm Maximum

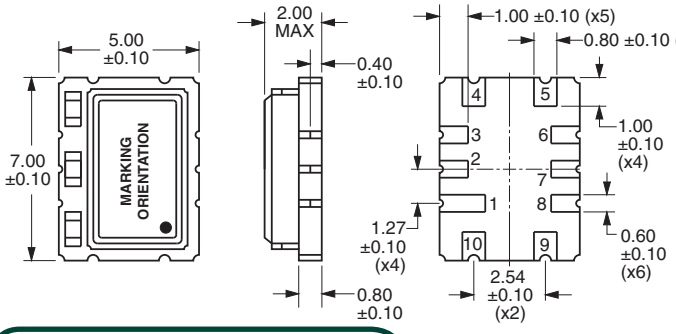
EXTERNAL TRIM
N=None (No Connection on Pad 10)
V=Voltage Control

FREQUENCY

PACKAGING OPTIONS
Blank=Bulk
TR=Tape and Reel

MECHANICAL DIMENSIONS

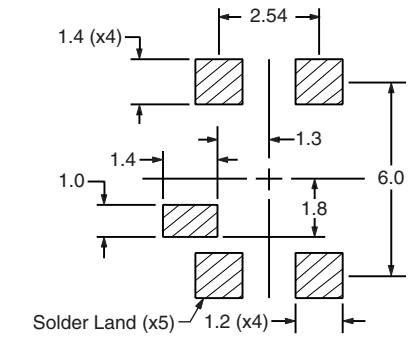
ALL DIMENSIONS IN MILLIMETERS



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

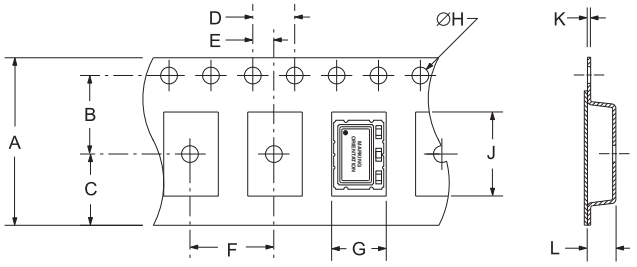
ALL DIMENSIONS IN MILLIMETERS

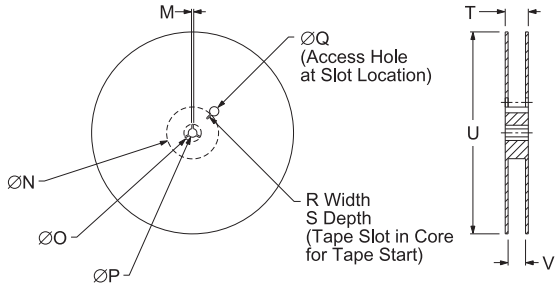


Tolerances= ±0.1

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	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 2003
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: 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