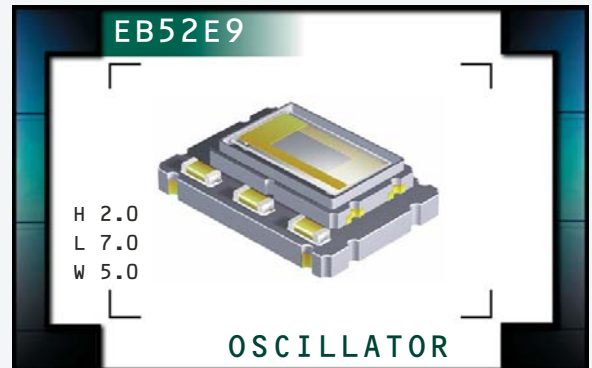


EB52E9 Series



- Temperature Compensated Crystal Oscillators (TCXO)
- LVCMOS Output
- +3.3V Supply Voltage
- Stratum 3
- External Voltage Control Option
- 10 Pad Ceramic SMD Package
- RoHS Compliant (Pb-Free)



ELECTRICAL SPECIFICATIONS

Nominal Frequency (MHz)	6.400, 6.500, 9.720, 10.000, 12.800, 13.000	
Frequency Stability	vs. Operating Temperature Range ($V_{DD} = 3.3V_{DC}$, $V_C = 1.65V_{DC}$)	± 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	10mA Maximum	
Output Voltage Logic High (V_{OH})	$I_{OH} = -4mA$	90% of V_{DD} Minimum
Output Voltage Logic Low (V_{OL})	$I_{OL} = +4mA$	10% of V_{DD} Maximum
Rise/Fall Time	Measured at 20% to 80% of Waveform	5nSec Maximum
Duty Cycle	Measured at 50% of Waveform	$50 \pm 5\%$
Load Drive Capability	15pF Maximum	
External Trim (Control Voltage Option)	$1.65V_{DC} \pm 1.65V_{DC}$: 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
Tri-State Input Voltage (V_{IH} and V_{IL})	No Connect $+0.9V_{DD}$ Minimum $+0.1V_{DD}$ Maximum	Enables Output Enables Output Disables Output: High Impedance
RMS Phase Jitter	$F_J = 12kHz$ to 20MHz	1pSec Maximum
Start Up Time	5mSec Maximum	
Storage Temperature Range	$-40^\circ C$ to $+125^\circ C$	

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EB52E9	CERAMIC	3.3V	OS5Q	07/07

PART NUMBERING GUIDE

EB52E9 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 & Reel

FREQUENCY STABILITY

1 = ±0.28ppm Maximum

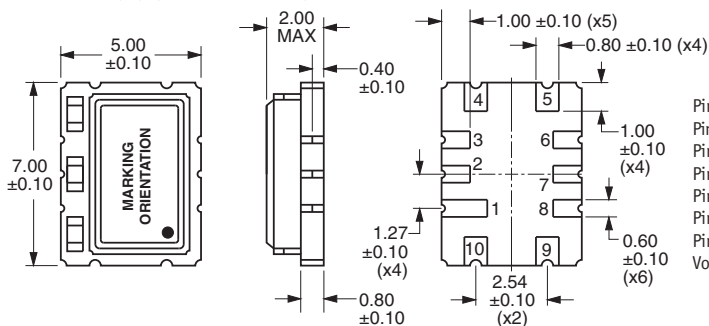
FREQUENCY

EXTERNAL TRIM

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

MECHANICAL DIMENSIONS

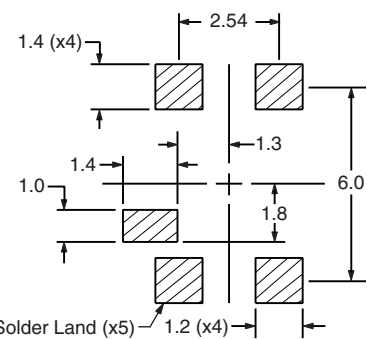
ALL DIMENSIONS IN MILLIMETERS



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

SUGGESTED SOLDER PAD LAYOUT

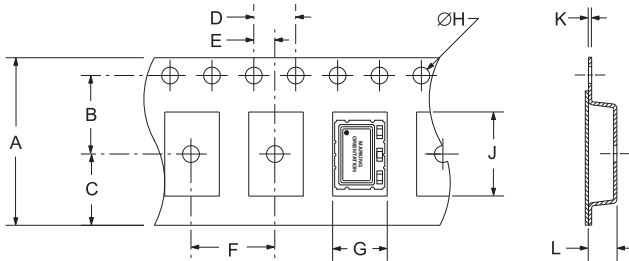
ALL DIMENSIONS IN MILLIMETERS



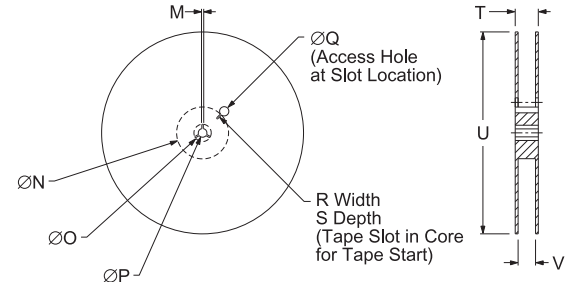
Tolerances = ±0.1

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	EB52E9	CERAMIC	3.3V	OS5Q	07/07