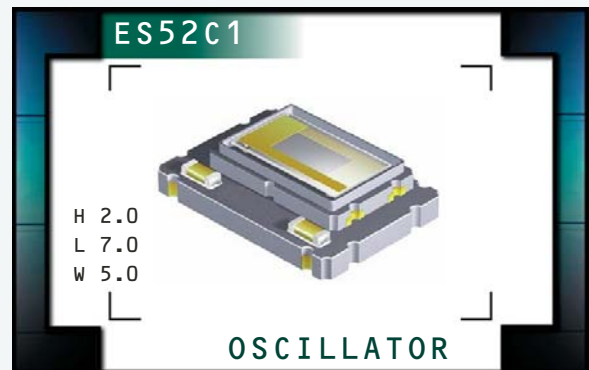


ES52C1 Series



www.DataSheet4U.com®
ECLIPTEK CORPORATION

- RoHS Compliant (Pb-free)
- Temperature Compensated Crystal Oscillator (TCXO)
- Clipped Sinewave Output
- 3.3V Supply Voltage
- Ceramic 10-pad SMD package
- Stability to 1.0ppm
- External voltage control option available



ELECTRICAL SPECIFICATIONS

Nominal Frequency (MHz)	10.000, 10.240, 10.245, 11.0592, 12.000, 12.288, 12.800, 13.000, 14.000, 14.400, 14.7456, 15.360, 16.000, 16.03495, 16.3676, 16.367667, 16.3677, 16.368, 16.384, 16.800, 17.500, 18.414, 18.432, 19.200, 19.440, 19.680, 19.800, 20.000, 20.480, 24.000, 24.5535, 25.000, and 26.000MHz										
Frequency Stability	<table border="0"> <tr> <td>vs. Operating Temperature Range</td> <td>See Part Numbering Guide</td> </tr> <tr> <td>vs. Frequency Tolerance (25°C ±2°C, V_{DD} = 3.3V_{DC}, V_C = 1.5V_{DC})</td> <td>±1.0ppm Maximum</td> </tr> <tr> <td>vs. Input Voltage (±5%)</td> <td>±0.2ppm Maximum</td> </tr> <tr> <td>vs. Load (±1kΩ//±1pF)</td> <td>±0.2ppm Maximum</td> </tr> </table>	vs. Operating Temperature Range	See Part Numbering Guide	vs. Frequency Tolerance (25°C ±2°C, V _{DD} = 3.3V _{DC} , V _C = 1.5V _{DC})	±1.0ppm Maximum	vs. Input Voltage (±5%)	±0.2ppm Maximum	vs. Load (±1kΩ//±1pF)	±0.2ppm Maximum		
vs. Operating Temperature Range	See Part Numbering Guide										
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vs. Input Voltage (±5%)	±0.2ppm Maximum										
vs. Load (±1kΩ//±1pF)	±0.2ppm Maximum										
Aging (at 25°C)	±1ppm / Year Maximum										
Operating Temperature Range	See Part Numbering Guide										
Supply Voltage (V_{DD})	3.3V _{DC} ±5%										
Input Current	<table border="0"> <tr> <td>10.000MHz to 14.999999MHz</td> <td>1.5mA Maximum</td> </tr> <tr> <td>15.000MHz to 25.999999MHz</td> <td>2.0mA Maximum</td> </tr> <tr> <td>26.000MHz to 26.0000MHz</td> <td>2.5mA Maximum</td> </tr> </table>	10.000MHz to 14.999999MHz	1.5mA Maximum	15.000MHz to 25.999999MHz	2.0mA Maximum	26.000MHz to 26.0000MHz	2.5mA Maximum				
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Output Voltage	0.8Vp-p Clipped Sinewave Minimum										
Load Drive Capability	10kOhms // 10pF										
External Trim (Voltage Control Option)	1.5V _{DC} ±1.0V _{DC} ; Positive Transfer Characteristic ±8ppm Minimum										
Linearity	10% Maximum										
Modulation Bandwidth	Measured at -3dB, V _C = 1.5V _{DC} 3kHz Minimum										
Input Impedance	100kOhms Minimum										
Typical Phase Noise (at 12.800MHz)	<table border="0"> <tr> <td>At offset of 10Hz</td> <td>-80dBc/Hz</td> </tr> <tr> <td>At offset of 100Hz</td> <td>-115dBc/Hz</td> </tr> <tr> <td>At offset of 1kHz</td> <td>-135dBc/Hz</td> </tr> <tr> <td>At offset of 10kHz</td> <td>-145dBc/Hz</td> </tr> <tr> <td>At offset of 100kHz</td> <td>-145dBc/Hz</td> </tr> </table>	At offset of 10Hz	-80dBc/Hz	At offset of 100Hz	-115dBc/Hz	At offset of 1kHz	-135dBc/Hz	At offset of 10kHz	-145dBc/Hz	At offset of 100kHz	-145dBc/Hz
At offset of 10Hz	-80dBc/Hz										
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At offset of 1kHz	-135dBc/Hz										
At offset of 10kHz	-145dBc/Hz										
At offset of 100kHz	-145dBc/Hz										
Start Up Time	5mSec Maximum										
Storage Temperature Range	-55°C to 125°C										

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES ES52C1	PACKAGE CERAMIC	VOLTAGE 3.3V	CLASS OS4K	REV. DATE 09/07
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PART NUMBERING GUIDE

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ES52C1 C 25 V - 13.000M TR

OPERATING TEMPERATURE RANGE

- A=0°C to 50°C
- B=0°C to 70°C
- C=-20°C to 70°C
- D=-30°C to 85°C
- E=-40°C to 85°C

FREQUENCY STABILITY

- 10 = ±1.0ppm Maximum
- 15 = ±1.5ppm Maximum
- 20 = ±2.0ppm Maximum
- 25 = ±2.5ppm Maximum

PACKAGING OPTIONS

- Blank=Bulk
- TR=Tape and Reel

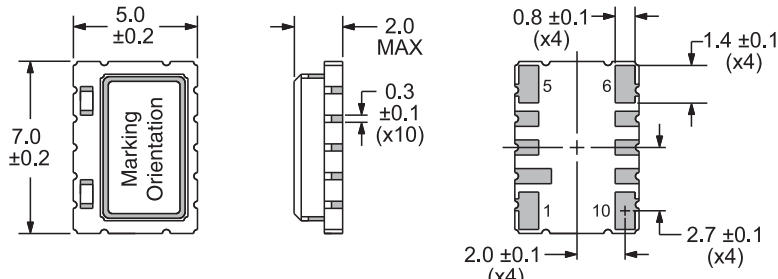
FREQUENCY

EXTERNAL TRIM

- N=None (No Connection on Pin 1)
- V=Voltage Control

MECHANICAL DIMENSIONS

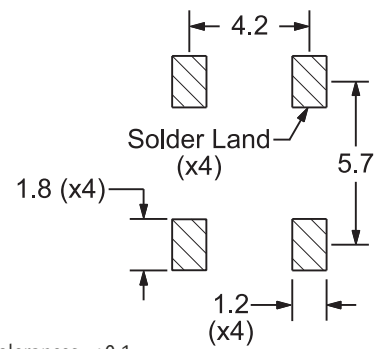
ALL DIMENSIONS IN MILLIMETERS



- Pin 1: Control Voltage or No Connect
- Pin 5: Case Ground
- Pin 6: Output
- Pin 10: Supply Voltage
- Pin 2-4, 7-9: Do Not Connect

SUGGESTED SOLDER PAD LAYOUT

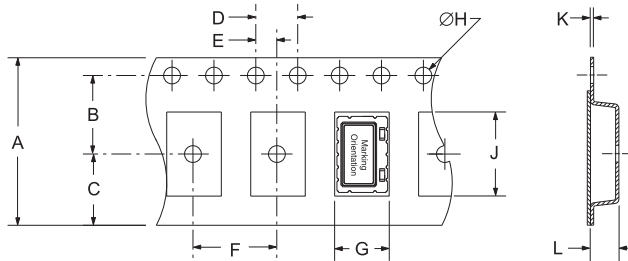
ALL DIMENSIONS IN MILLIMETERS



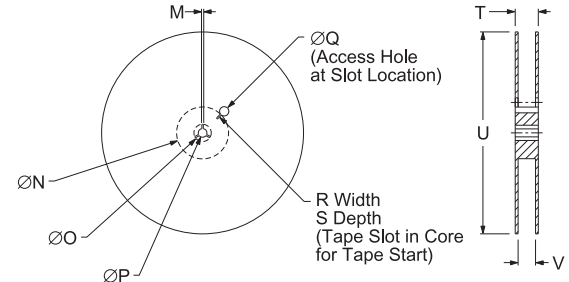
Tolerances = ±0.1

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*	0.30±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	ES52C1	CERAMIC	3.3V	OS4K	09/07