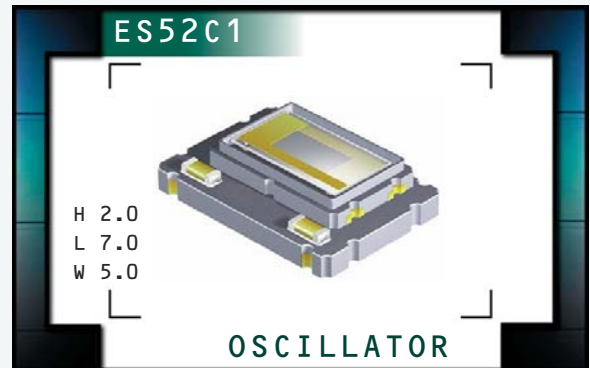


# ES52C1 Series



ECLIPTEK<sup>®</sup>  
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

<b>Nominal Frequency (MHz)</b>	10.000, 10.001355, 10.240, 10.245, 10.250, 11.0592, 11.200, 11.2896, 12.288, 12.352, 12.500, 12.504, 12.600, 12.800, 13.000, 13.560, 14.000, 14.31818, 14.400, 14.500, 14.7456, 14.850, 15.000, 15.359865, 15.360, 16.000, 16.03495, 16.320, 16.3676, 16.367667, 16.3677, 16.368, 16.384, 16.800, 17.500, 18.000, 18.414, 18.432, 18.601, 19.000, 19.200, 19.440, 19.680, 19.800, 20.000, 20.480, 21.250, 22.000, 23.090, 24.000, 24.5535, 24.576, 24.8064, 25.000, 25.48828, 26.000, 32.000, and 40.000MHz	
<b>Frequency Stability</b>	vs. Operating Temperature Range vs. Frequency Tolerance (25°C ±2°C, V <sub>DD</sub> = 3.3V <sub>DC</sub> , V <sub>C</sub> = 1.5V <sub>DC</sub> ) vs. Input Voltage (±5%) vs. Load (±1kΩ//±1pF)	See Part Numbering Guide ±1.0ppm Maximum ±0.2ppm Maximum ±0.2ppm Maximum
<b>Aging (at 25°C)</b>		±1ppm / Year Maximum
<b>Operating Temperature Range</b>		See Part Numbering Guide
<b>Supply Voltage (V<sub>DD</sub>)</b>		3.3V <sub>DC</sub> ±5%
<b>Input Current</b>	10.000MHz to 14.999999MHz 15.000MHz to 25.999999MHz 26.000MHz to 40.0000MHz	1.5mA Maximum 2.0mA Maximum 2.5mA Maximum
<b>Output Voltage</b>		0.8Vp-p Clipped Sinewave Minimum
<b>Load Drive Capability</b>		10kOhms // 10pF
<b>External Trim (Voltage Control Option)</b>	1.5V <sub>DC</sub> ±1.0V <sub>DC</sub> ; Positive Transfer Characteristic	±8ppm Minimum
<b>Linearity</b>		10% Maximum
<b>Modulation Bandwidth</b>	Measured at -3dB, V <sub>C</sub> = 1.5V <sub>DC</sub>	3kHz Minimum
<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 10kHz At offset of 100kHz	-80dBc/Hz -115dBc/Hz -135dBc/Hz -145dBc/Hz -145dBc/Hz
<b>Start Up Time</b>		5mSec Maximum
<b>Storage Temperature Range</b>		-55°C to 125°C

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES ES52C1	PACKAGE CERAMIC	VOLTAGE 3.3V	CLASS OS4K	REV. DATE 03/06
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## PART NUMBERING GUIDE

### 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

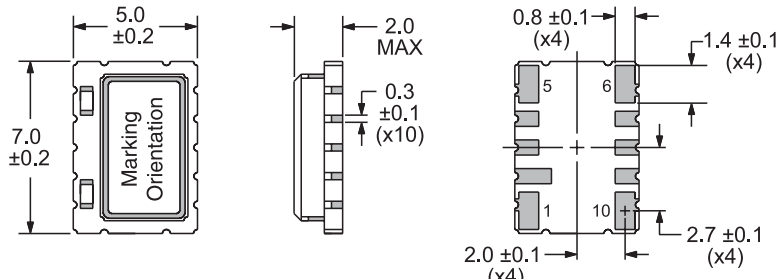
#### FREQUENCY

#### EXTERNAL TRIM

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

#### MECHANICAL DIMENSIONS

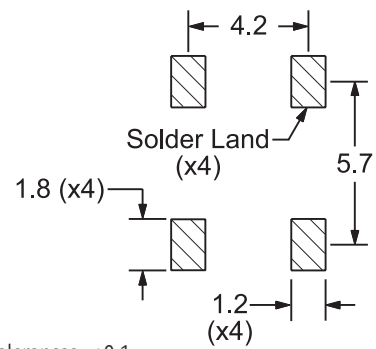
ALL DIMENSIONS IN MILLIMETERS



Pin 1: Control Voltage or No Connect  
 Pin 5: Case Ground  
 Pin 6: Output  
 Pin 10: Supply Voltage  
 Pin 2-4, 7-9: No Connection

#### SUGGESTED SOLDER PAD LAYOUT

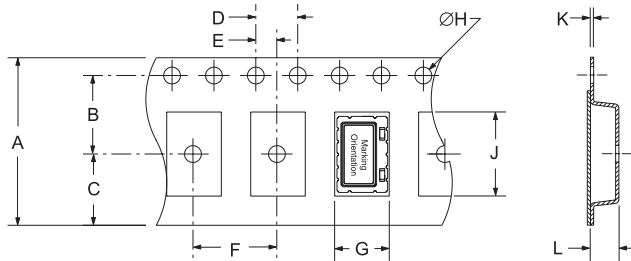
ALL DIMENSIONS IN MILLIMETERS



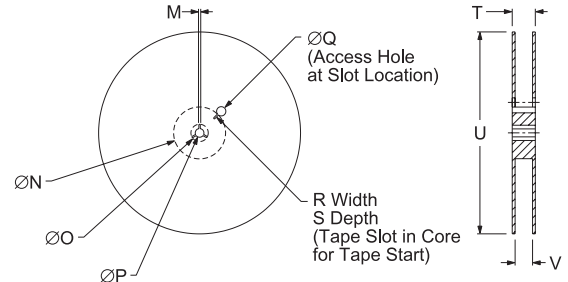
Tolerances = ±0.1

#### 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 2002
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	03/06