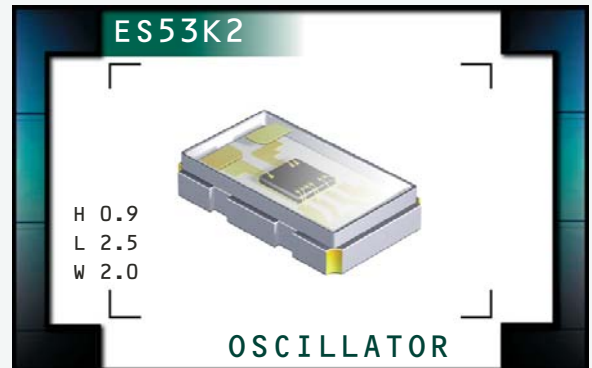


# ES53K2 Series



**ECLIPTEK**<sup>®</sup>  
CORPORATION

- Temperature Compensated Crystal Oscillators (TCXO)
- Clipped Sinewave Output
- +2.8V Supply Voltage
- External Voltage Control Option
- 4 Pad Ceramic SMD Package
- RoHS Compliant (Pb-Free)



## NOTES

### ELECTRICAL SPECIFICATIONS

<b>Nominal Frequency</b>	16.367667MHz, 16.368MHz, 16.369MHz, 19.200MHz, 26.000MHz, 38.400MHz, 40.000MHz	
<b>Frequency Stability</b>	vs. Frequency Tolerance (25°C ±2°C, V <sub>DD</sub> =2.8V <sub>DC</sub> )	±1.0ppm Maximum
	vs. Operating Temperature Range (V <sub>DD</sub> =2.8V <sub>DC</sub> )	See Table 1
	vs. Input Voltage (±5%)	±0.2ppm Maximum
	vs. Load (±1kΩ//±1pF)	±0.2ppm Maximum
	vs. Reflow (at 25°C, 1 hour after reflow, 2 times)	±1.0ppm Maximum
<b>Aging (at 25°C)</b>	±1.0ppm / Year Maximum	
<b>Operating Temperature Range</b>	See Table 1	
<b>Supply Voltage (V<sub>DD</sub>)</b>	2.8V <sub>DC</sub> ±5%	
<b>Input Current</b>	16.367667MHz to 25.999MHz	2.0mA Maximum
	26.000MHz to 40.000MHz	2.5mA Maximum
<b>Output Voltage</b>	External DC-Cut Capacitor Required, 150pF NPO Recommended	0.8V <sub>p-p</sub> Clipped Sinewave Minimum
<b>Load Drive Capability</b>	10k0hms // 10pF	
<b>Control Voltage</b>	1.4V <sub>DC</sub> ±1.0V <sub>DC</sub>	
<b>Frequency Deviation</b>	±5ppm Minimum	
<b>Linearity</b>	±10% Maximum	
<b>Transfer Function</b>	Positive Transfer Characteristic	
<b>Input Impedance</b>	500k0hms Minimum	
<b>Storage Temperature Range</b>	-55°C to 125°C	
<b>Start Up Time</b>	2mSec Maximum	
<b>Phase Noise</b>	At offset of 100Hz	-115dBc/Hz Typical
	At offset of 1kHz	-135dBc/Hz Typical
	At offset of 10kHz	-148dBc/Hz Typical

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
OSCILLATOR

SERIES  
ES53K2

PACKAGE  
CERAMIC

VOLTAGE  
2.8V

CLASS  
057R

REV. DATE  
01/10

## PART NUMBERING GUIDE

### ES53K2 C 25 V - 19.200M TR

**OPERATING TEMP. RANGE**  
One Letter Code Per Table 1

**FREQUENCY STABILITY**  
Two Digit Code Per Table 1

**CONTROL VOLTAGE**  
N=None (No Connection on Pin 1)  
V=1.4V<sub>DC</sub> ±1.0V<sub>DC</sub>

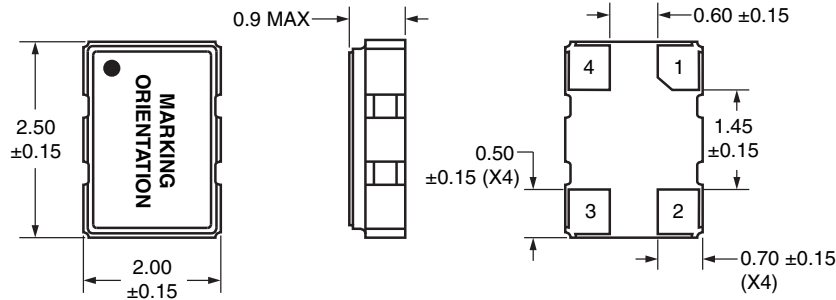
**FREQUENCY**

**PACKAGING OPTIONS**  
Blank=Bulk  
TR= Tape and Reel

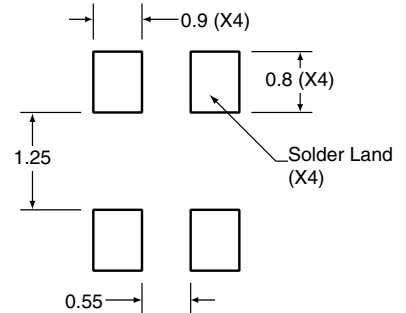
**TABLE 1: PART NUMBERING CODES**

Operating Temperature Range	Frequency Stability						
	X denotes availability for any valid frequency Y denotes availability for frequencies < 26.001MHz						
	Code	±0.5ppm	±1.0ppm	±1.5ppm	±2.0ppm	±2.5ppm	±3.0ppm
0°C to +50°C	A	Y	X	X	X	X	X
-10°C to 60°C	B	Y	X	X	X	X	X
-20°C to +70°C	C	Y	X	X	X	X	X
-30°C to +60°C	D		X	X	X	X	X
-30°C to +75°C	E		X	X	X	X	X
-30°C to +85°C	F		X	X	X	X	X
-40°C to +85°C	G			X	X	X	X

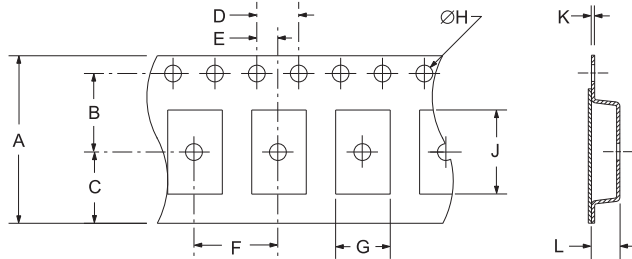
**MECHANICAL DIMENSIONS**  
ALL DIMENSIONS IN MILLIMETERS



**SUGGESTED SOLDER PAD LAYOUT**  
ALL DIMENSIONS IN MILLIMETERS



**TAPE AND REEL DIMENSIONS**  
ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E	
	8.0 ±.2	3.5 ±.1	2.75 ±.1	4 ±.1	2 ±.1	
F	G	H	J	K	L	
	4 ±.1	B0*	1.55 ±.05	A0*	.25 ±.05	K0*

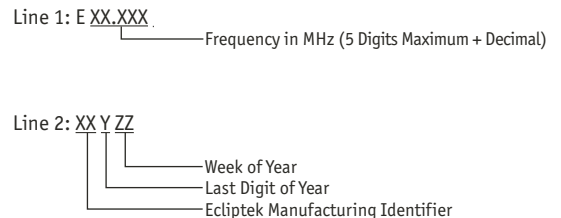
REEL	M	N	O	P	Q	
	1.5 MIN	50 MIN	20.2 MIN	13 ±.2	40 MIN	
R	S	T	U	V	QTY/REEL	
	2.5 MIN	10 MIN	14.4 MAX	360 MAX	8.4+1.5-0	1,000

\*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**



MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	ES53K2	CERAMIC	2.8V	OS7R	01/10