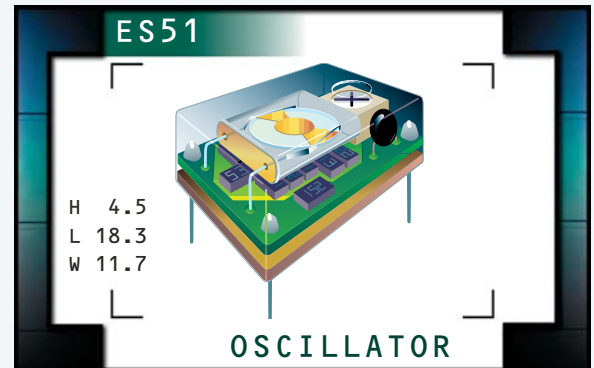


ES51 Series

- Temperature Compensated Crystal Oscillator (TCXO)
- Clipped Sinewave Output
- 5.0V Supply Voltage
- 14 pin DIP package
- Stability to 1.5ppm
- Internal or external voltage control option available



NOTES

ELECTRICAL SPECIFICATIONS

Frequency Range	9.600MHz to 35.000MHz	
Storage Temperature Range	-40°C to 85°C	
Operating Temperature Range	See Table 1	
Supply Voltage (V_{DD})	5.0V _{DC} ±5%	
Load Drive Capability	10kOhms // 10pF	
Internal Trim (Top of Can)	±3ppm Minimum	
Control Voltage (External)	2.5V _{DC} ±2.0V _{DC} Positive Transfer Characteristic	
Output Voltage	1.0Vp-p Minimum	
Frequency Deviation	±5ppm Minimum Over Control Voltage	
Aging (at 25°C)	±1ppm / year Maximum	
Input Current	9.600MHz to 20.000MHz	1.5mA Maximum
	20.001MHz to 29.999MHz	2.0mA Maximum
	30.000MHz to 35.000MHz	3.0mA Maximum
Frequency Stability	vs. Operating Temperature Range	See Table 1
	vs. Input Voltage (±5%)	±0.3ppm Maximum
	vs. Load (±2kΩ // ±2pF)	±0.3ppm Maximum

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES ES51	PACKAGE METAL	VOLTAGE 5.0V	CLASS OS22	REV. DATE 04/02
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PART NUMBERING GUIDE

ES51 25 E V - 12.800M

FREQUENCY STABILITY
Two Digit Code Per Table 1

OPERATING TEMP. RANGE
One Letter Code Per Table 1

FREQUENCY

EXTERNAL TRIM
Blank=None (No Connection on Pin 1,
Pin 1 Not Present)
V=External Control Voltage

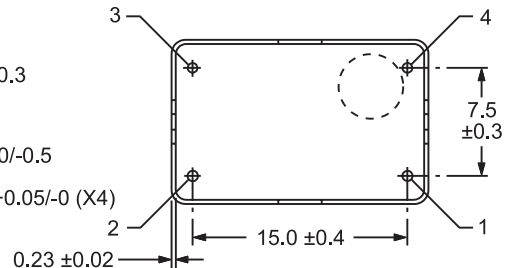
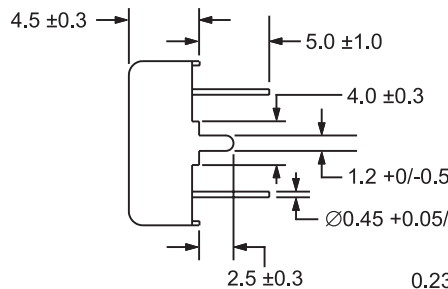
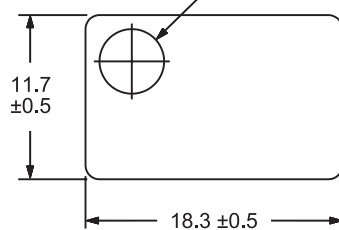
NOTES

TABLE 1: PART NUMBERING CODES

Operating Temperature Range	Code	Frequency Stability					
		X Denotes Availability from 9.6MHz to 25MHz Y Denotes Availability for Frequencies above 25MHz					
		±1.5ppm	±2.0ppm	±2.5ppm	±3.0ppm	±3.5ppm	±5.0ppm
0°C to +50°C	A	X, Y	X, Y	X, Y	X, Y	X, Y	X, Y
-10°C to +60°C	B	X, Y	X, Y	X, Y	X, Y	X, Y	X, Y
-20°C to +70°C	C	X	X, Y	X, Y	X, Y	X, Y	X, Y
-30°C to +60°C	D		X	X, Y	X, Y	X, Y	X, Y
-30°C to +75°C	E		X	X	X, Y	X, Y	X, Y
-35°C to +80°C	F			X	X	X, Y	X, Y
-40°C to +85°C	G				X	X	X, Y

MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS

Internal Trim Access
Hole $\varnothing 3.5 \pm 0.5$



Pin 1: Voltage Control or No Connection
(Pin 1 Not present when Voltage Control is specified as "No Connect")
Pin 2: Case Ground
Pin 3: Output
Pin 4: Supply Voltage

MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: ES51 15 A V

External Trim
Blank=None (No Connection on Pin 1)
V=External Voltage Control

Operating Temperature Code (°C)
A= 0 to 50, B= -10 to 60, C= -20 to 70,
D= -30 to 60, E= -30 to 75, F= -35 to 80,
G= -40 to 85

Frequency Stability Code (±ppm)
15=1.5, 20=2.0, 25=2.5, 30=3.0, 35=3.5, 50=5.0

Series Designator

Line 3: XX.XXX M

Frequency in MHz (5 Digits Maximum + Decimal)

Line 4: XX Y ZZ

Week of Year
Last Digit of Year
Ecliptek Manufacturing Identifier

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Parameter Specification

Seal Integrity	Bubble test in Perfluorocarbon at $+125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 60 seconds minimum (internal crystal).
Solderability	Sn63 Solder dip at $+230^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 5 seconds/95% coverage.
Marking Permanency	10 Strokes with brush after 1 minute soak in solvent, 3 times.
Shock	Random drop on hard wooden plate 3 times from a height of 20cm.
Vibration	Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X, Y and Z) for a total of 6 hours.

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
ES51

PACKAGE
METAL

VOLTAGE
5.0V

CLASS
0522

REV. DATE
04/02