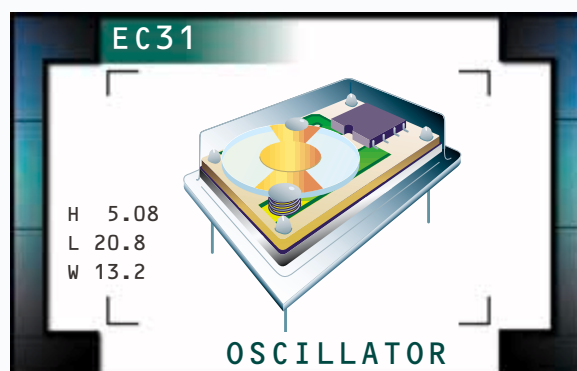


EC31 Series

- Voltage Controlled Crystal Oscillator (VCXO)
- 5.0V Supply Voltage
- HCMOS/TTL output
- 14 pin DIP package
- Stability to 20ppm
- Wide frequency and pull range



ELECTRICAL SPECIFICATIONS

Frequency Range		1.000MHz to 155.520MHz
Operating Temperature Range		0°C to 70°C or -40°C to 85°C
Storage Temperature Range		-55°C to 125°C
Supply Voltage (V_{DD})		5.0V _{DC} ±5%
Aging (at 25°C)		±5ppm / year Maximum
Load Drive Capability		10TTL Load or 15pF HCMOS Load Maximum
Start Up Time		10 mSeconds Maximum
Frequency Deviation / Pin 1 Control Voltage	2.5V _{DC} ±2.0V _{DC} Positive Transfer Characteristic,	±50ppm Minimum
	2.5V _{DC} ±2.0V _{DC} Positive Transfer Characteristic,	±100ppm Minimum
	2.5V _{DC} ±2.0V _{DC} Positive Transfer Characteristic,	±150ppm Minimum
	2.5V _{DC} ±2.5V _{DC} Positive Transfer Characteristic, or	±200ppm Minimum
Linearity		±20%, ±15%, ±10% Maximum, or ±5% Maximum (not avail. w/±200ppm Freq. Dev.)
Input Current	1.000MHz to 20.000MHz	20mA Maximum
	20.001MHz to 30.000MHz	40mA Maximum
	30.001MHz to 155.520MHz	50mA Maximum
Frequency Tolerance / Stability		Inclusive of Operating Temperature Range, Supply Voltage, and Load ±100ppm, ±50ppm, ±25ppm, or ±20ppm Maximum (0°C to 70°C only)
Output Voltage Logic High (V_{OH})	w/TTL Load	2.4V _{DC} Minimum
	w/HCMOS Load	V_{DD} -0.5V _{DC} Minimum
Output Voltage Logic Low (V_{OL})	w/TTL Load	0.4V _{DC} Maximum
	w/HCMOS Load	0.5V _{DC} Maximum
Duty Cycle	at 1.4V _{DC} w/TTL Load; at 50% of Waveform w/HCMOS Load	50 ±10(%) (Standard)
	at 1.4V _{DC} w/TTL Load and w/HCMOS Load	50 ±5(%) (Optional)
Rise Time / Fall Time		0.4V _{DC} to 2.4V _{DC} w/TTL Load; 20% to 80% of Waveform w/HCMOS Load 5 nSeconds Maximum
Period Jitter: Absolute	Freq. Deviation Options Blank, A or B	±100pSeconds Max ≤44.736MHz ±200pSeconds Max >44.736MHz
	Freq. Deviation Options C	±100pSeconds Max ≤30.000MHz ±200pSeconds Max >30.000MHz
Period Jitter: One Sigma	Freq. Deviation Options Blank, A or B	±25pSeconds Max ≤44.736MHz ±50pSeconds Max >44.736MHz
	Freq. Deviation Options C	±25pSeconds Max ≤30.000MHz ±50pSeconds Max >30.000MHz

PART NUMBERING GUIDE

EC31 00 T A 15 ET - 24.000M - G

FREQUENCY TOLERANCE / STABILITY

00=±100ppm Maximum (Standard)
45=±50ppm Maximum, 25=±25ppm Maximum
20=±20ppm Maximum

DUTY CYCLE

Blank=50 ±10(%) (Standard), T=50 ±5(%)

FREQUENCY DEVIATION

Blank=±50ppm Minimum (Standard)
A=±100ppm Minimum
B=±150ppm Minimum,
C=±200ppm Minimum (2.5V_{DC} ±2.5V_{DC})

AVAILABLE OPTIONS

Blank=None (Standard)
CLXXX=Custom Lead Length (See Page 123)
G=Full Size Gull Wing (See Page 122)

FREQUENCY

OPERATING TEMP. RANGE

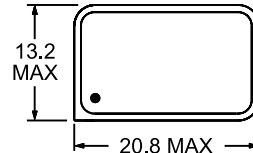
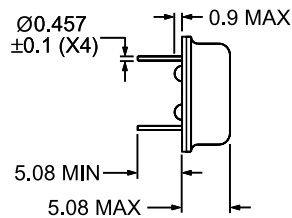
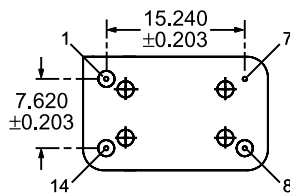
Blank=0°C to 70°C (Standard)
ET=-40°C to 85°C

LINEARITY

Blank=20% Maximum (Standard)
05=5% Maximum, 10=10% Maximum
15=15% Maximum

NOTES

MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



Pin 1: Control Voltage (V_C)
Pin 7: Case Ground

Pin 8: Output
Pin 14: Supply Voltage

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic	Specification
Seal Integrity	Bubble test in Perfluorocarbon at +125°C ±5°C for 60 seconds minimum.
Solderability	Sn63 Solder dip at +230°C ±5°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.

MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: EC31

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

Note: Pin 1 shall be designated with a dot

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EC31	14 pin DIP	5.0V	OS13	01/01