

EV31C6 Series



ECLIPTEK
CORPORATION

- RoHS Compliant (Pb-Free)
- Voltage Controlled Crystal Oscillator (VCXO)
- 5.0V Supply Voltage
- HCMOS output with Tri-State function
- Ceramic 6-pad SMD package
- APR Performance to ± 100 ppm
- Commercial and Industrial Temperature Range



ELECTRICAL SPECIFICATIONS

Frequency Range (F _o)	1.544MHz, 2.000MHz, 2.048MHz, 3.088MHz, 3.580MHz, 3.686MHz, 4.000MHz, 4.032MHz, 4.096MHz, 4.434MHz, 5.000MHz, 6.144MHz, 6.176MHz, 6.312MHz, 6.400MHz, 8.000MHz, 8.192MHz, 8.448MHz, 10.000MHz, 12.000MHz, 12.288MHz, 12.352MHz, 12.960MHz, 13.000MHz, 13.500MHz, 14.318MHz, 15.360MHz, 15.440MHz, 16.000MHz, 16.384MHz, 16.660MHz, 17.664MHz, 18.432MHz, 19.200MHz, 19.440MHz, 20.000MHz, 20.480MHz, 24.000MHz, 24.576MHz, 24.704MHz, 25.920MHz, 26.000MHz, 27.000MHz, 28.636MHz, 30.000MHz, 30.720MHz, 32.000MHz, 32.768MHz, 34.368MHz, 35.328MHz, 36.864MHz, 38.880MHz, 40.000MHz, 40.960MHz, 44.736MHz, 50.000MHz, 51.840MHz, 52.000MHz, 62.208MHz, 65.536MHz, 74.250MHz, 77.760MHz
Operating Temperature Range (OTR)	0°C to 70°C or -40°C to 85°C
Storage Temperature Range (STR)	-55°C to 125°C
Supply Voltage (V _{DD})	5.0V _{DC} $\pm 10\%$
Input Current (I _{DD})	≤ 27.000 MHz: 25mA Maximum > 27.000MHz: 35mA Maximum
Frequency Tolerance/Stability	Inclusive of All Conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, Shock, and Vibration ± 50 ppm Maximum
Output Voltage Logic High (V _{OH})	I _{OH} = -4mA: 90% of V _{DD} Minimum
Output Voltage Logic Low (V _{OL})	I _{OL} = +4mA: 10% of V _{DD} Maximum
Rise Time / Fall Time (T _R /T _F)	20% to 80% of Waveform w/HCMOS Load or w/TTL Load: 5 nSeconds Maximum
Duty Cycle (SYM)	at 50% of Waveform: 50 ± 5 (%) Typical, 50 ± 10 (%) Max.
Load Drive Capability (C _{LOAD})	10TTL Load or 30pF HCMOS Load Max.
Aging (at 25°C)	± 2 ppm/1st year Typical, ± 10 ppm/10 years Max.
Start Up Time (T _S)	10 mSeconds Maximum
Tri-State Input Voltage	V _{IH} : No Connection: Enables Output V _{IH} : $\geq 0.9V_{DD}$: Enables Output V _{IL} : $\leq 0.1V_{DD}$: Disables Output: High Impedance
RMS Phase Jitter	F _J = 12kHz to 20MHz: 1pSec Maximum
Absolute Pull Range (APR)	Inclusive of All Conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, Shock, Vibration, and Aging over Control Voltage (V _c) ± 50 ppm Minimum ± 80 ppm Minimum ≤ 51.840 MHz only ± 100 ppm Minimum ≤ 36.000 MHz only
Linearity	10% Typical, 20% Maximum
Control Voltage (V _c): Test Conditions for APR	0.5V _{DC} to 4.5V _{DC}
Control Voltage Range (V _{CR})	0.0V _{DC} to V _{DD}
Transfer Function	Positive Transfer Characteristic
Input Impedance (Z _i)	50kOhms Minimum
Input Leakage Current	10 μ A Maximum
Modulation Bandwidth (MBW)	-3dB, V _c = 2.5V _{DC} : 10kHz Minimum
Typical Phase Noise (F _o = 27.000MHz)	At offset of 10Hz: -70dBc/Hz At offset of 100Hz: -100dBc/Hz At offset of 1kHz: -130dBc/Hz At offset of 10kHz: -147dBc/Hz At offset of 100kHz: -152dBc/Hz

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
EV31C6

PACKAGE
CERAMIC

VOLTAGE
5.0V

CLASS
OS60

REV. DATE
11/06

PART NUMBERING GUIDE

EV31C6 B 3 A 1 - 35.328M TR

OPERATING TEMPERATURE RANGE

A=0°C to 70°C,
B=-40°C to 85°C

ABSOLUTE PULL RANGE (APR)

3=±50ppm Minimum, 4=±80ppm Minimum,
5=±100ppm Minimum

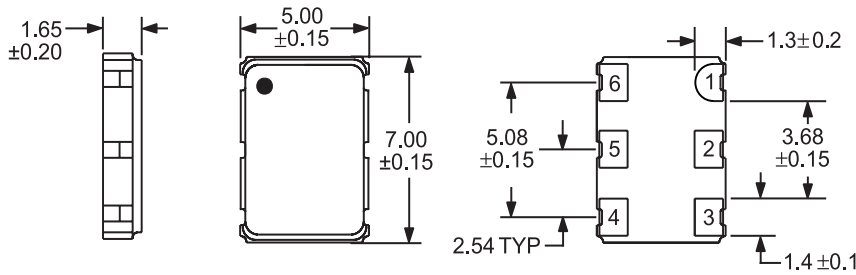
AVAILABLE OPTIONS

Blank=Bulk (Standard)
TR=Tape and Reel

FREQUENCY

MECHANICAL DIMENSIONS

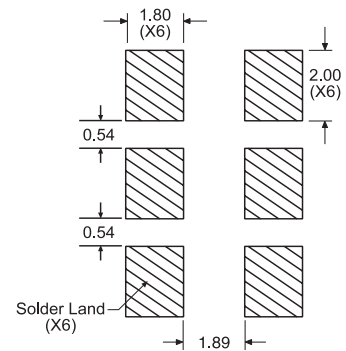
ALL DIMENSIONS IN MILLIMETERS



Pin 1: Control Voltage (V_i)
Pin 2: Tri-State
Pin 3: Case Ground
Pin 4: Output
Pin 5: No Connect
Pin 6: Supply Voltage

SUGGESTED SOLDER PAD LAYOUT

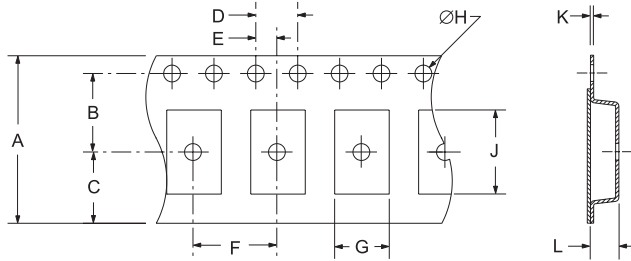
ALL DIMENSIONS IN MILLIMETERS



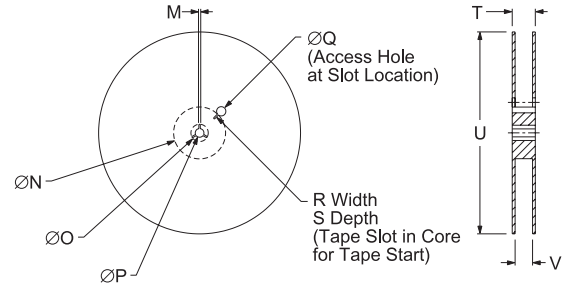
Tolerances = ±0.1

TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
	16±.3-.1	7.5±.1	6.75±.1	4±.1	2±.1
F	G	H	J	K	L
8±.1	B0*	1.5+1-0	A0*	.3±.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	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: ECLIPTEK

Line 2: XX.XXX M
Frequency in MHz (5 Digits Maximum + Decimal)

Line 3: XY ZZ
Week of Year
Last Digit of Year
Ecliptek Manufacturing Identifier

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EV31C6	CERAMIC	5.0V	OS60	11/06