

EV31C6 Series

- 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



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ECLIPTEK
CORPORATION



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
	> 27.000 MHz	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})	$I_{OH} = -4$ mA	90% of V_{DD} Minimum
Output Voltage Logic Low (V_{OL})	$I_{OL} = +4$ mA	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	$F_J = 12$ kHz 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 ($F_o = 27.000$ MHz)	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

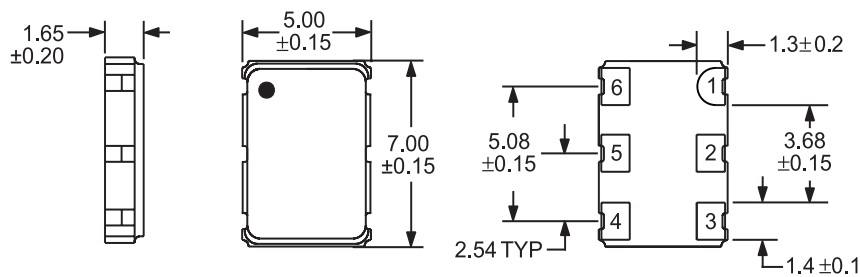
AVAILABLE OPTIONS

Blank=Bulk (Standard)
TR=Tape and Reel

FREQUENCY

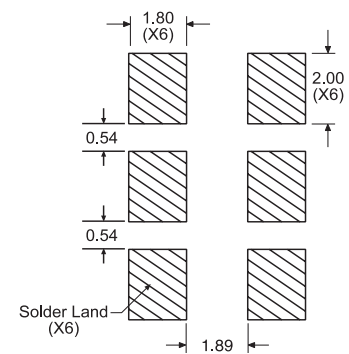
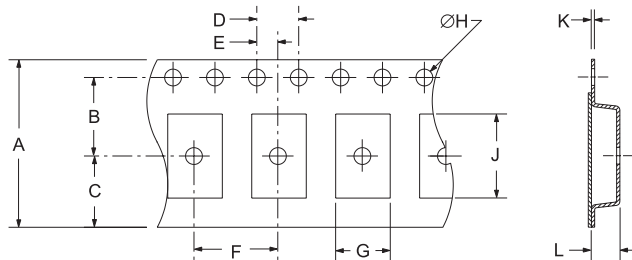
ABSOLUTE PULL RANGE (APR)

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

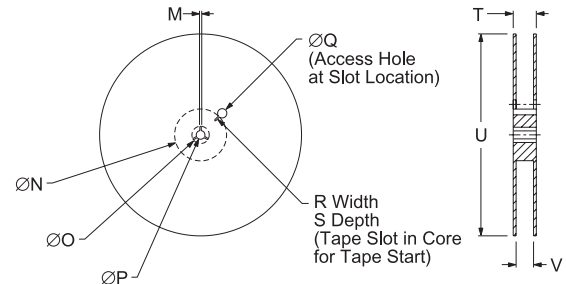
MECHANICAL DIMENSIONS
ALL DIMENSIONS IN MILLIMETERS

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 MILLIMETERSTAPE 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

Fine Leak Test
Gross Leak Test
Mechanical Shock
Vibration
Solderability
Temperature Cycling
Resistance to Soldering Heat
Resistance to Solvents

Specification

MIL-STD-883, Method 1014, Condition A
MIL-STD-883, Method 1014, Condition C
MIL-STD-202, Method 213, Condition C
MIL-STD-883, Method 2007, Condition A
MIL-STD-883, Method 2002
MIL-STD-883, Method 1010
MIL-STD-202, Method 210
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
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
EV31C6

PACKAGE
CERAMIC

VOLTAGE
5.0V

CLASS
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