

# EV32C4 Series



ECLIPTEK<sup>®</sup>  
CORPORATION

- Voltage Controlled Crystal Oscillators (VCX0)
- LVCMOS Output
- +3.3V Supply Voltage
- Tri-State Output Function (Pad 5)
- External Voltage Control Function
- 6 Pad Ceramic SMD Package
- RoHS Compliant (Pb-Free)



## ELECTRICAL SPECIFICATIONS

<b>Frequency Range (F<sub>0</sub>)</b>	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, 25.000MHz, 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, 49.152MHz, 50.000MHz, 51.840MHz, 52.000MHz, 62.208MHz, 65.536MHz, 74.250MHz, 77.760MHz
<b>Operating Temperature Range (OTR)</b>	0°C to +70°C or -40°C to +85°C
<b>Storage Temperature Range (STR)</b>	-55°C to +125°C
<b>Supply Voltage (V<sub>DD</sub>)</b>	3.3V <sub>DC</sub> ±10%
<b>Input Current (I<sub>DD</sub>)</b>	15mA Maximum
<b>Frequency Tolerance/Stability</b>	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 ±50ppm Maximum
<b>Output Voltage Logic High (V<sub>OH</sub>)</b>	I <sub>OH</sub> = -4mA 90% of V <sub>DD</sub> Minimum
<b>Output Voltage Logic Low (V<sub>OL</sub>)</b>	I <sub>OL</sub> = +4mA 10% of V <sub>DD</sub> Maximum
<b>Rise Time / Fall Time (T<sub>R</sub>/T<sub>F</sub>)</b>	20% to 80% of Waveform 5 nSeconds Maximum
<b>Duty Cycle (SYM)</b>	at 50% of Waveform 50 ±5(%) Typical, 50 ±10(%) Maximum
<b>Load Drive Capability (C<sub>LOAD</sub>)</b>	15pF Maximum
<b>Aging (at 25°C)</b>	±2ppm/1st year typical, ±10ppm/10 years Max.
<b>Start Up Time (T<sub>S</sub>)</b>	10 mSeconds Maximum
<b>Tri-State Input Voltage</b>	V <sub>IH</sub> : No Connection Enables Output V <sub>IH</sub> : ≥0.9V <sub>DD</sub> Enables Output V <sub>IL</sub> : ≤0.1V <sub>DD</sub> Disables Output: High Impedance
<b>RMS Phase Jitter</b>	F <sub>J</sub> =12kHz to 20MHz 1pSec Maximum
<b>Absolute Pull Range (APR)</b>	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 <sub>c</sub> ) ±50ppm Minimum ±80ppm Minimum ≤ 51.840MHz only ±100ppm Minimum ≤ 36.000MHz only
<b>Linearity</b>	10% Typical, 20% Maximum
<b>Control Voltage (V<sub>c</sub>)</b>	Test Condition for APR 0.3V <sub>DC</sub> to 3.0V <sub>DC</sub>
<b>Control Voltage Range (V<sub>CR</sub>)</b>	0.0V <sub>DC</sub> to V <sub>DD</sub>
<b>Transfer Function</b>	Positive Transfer Characteristic
<b>Input Impedance (Z<sub>i</sub>)</b>	50kOhms Minimum
<b>Input Leakage Current</b>	10µA Maximum
<b>Modulation Bandwidth (MBW)</b>	-3dB, V <sub>c</sub> = 1.65V <sub>DC</sub> 10kHz Minimum
<b>Typical Phase Noise (Fo = 27.000MHz)</b>	At offset of 10Hz -65dBc/Hz At offset of 100Hz -95dBc/Hz At offset of 1kHz -120dBc/Hz At offset of 10kHz -142dBc/Hz At offset of 100kHz -152dBc/Hz At offset of 1MHz -154dBc/Hz

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
OSCILLATOR

SERIES  
EV32C4

PACKAGE  
CERAMIC

VOLTAGE  
3.3V

CLASS  
OS7K

REV. DATE  
09/09

## PART NUMBERING GUIDE

### EV32C4 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

#### LINEARITY

A=10% Typical, 20% Maximum

#### AVAILABLE OPTIONS

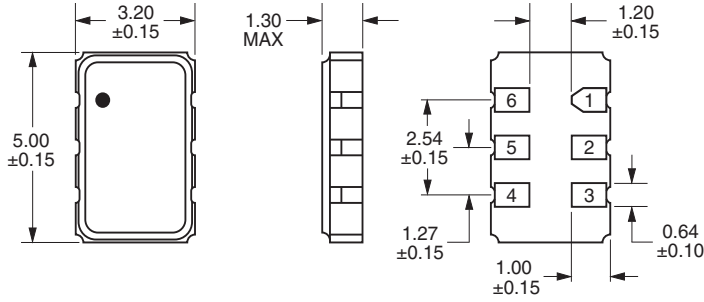
Blank=Bulk  
TR=Tape & Reel

#### FREQUENCY

#### DUTY CYCLE

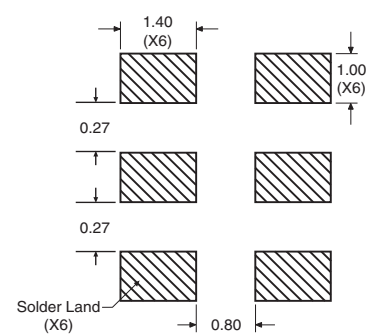
1=50 ±5(%) Typical, 50 ±10(%) Maximum

#### MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



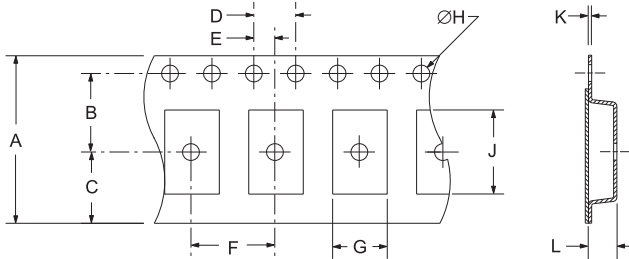
Pin 1: Control Voltage (V<sub>c</sub>)  
Pin 2: No Connect  
Pin 3: Case Ground  
Pin 4: Output  
Pin 5: Tri-State  
Pin 6: Supply Voltage

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

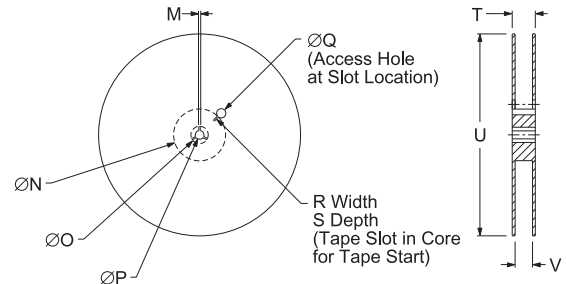


Tolerances = ±0.1

#### TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
	16.0 ±0.3	7.5 ±0.1	6.75 ±0.1	4.0 ±0.1	2.0 ±0.05
F	G	H	J	K	L
8.0 ±0.1	B0*	1.5 +0.1-0.0	A0*	0.3 ±0.1	K0*



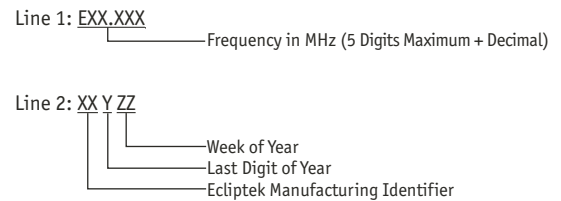
REEL	M	N	O	P	Q
	1.5 MIN	50 MIN	20.2 MIN	13.0 ±0.2	40 MIN
R	S	T	U	V	QTY/REEL
2.5 MIN	10 MIN	22.4 MAX	360 MAX	16.4 ±2-0	1,000

\*Compliant to EIA 481A

#### ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic	Specification
ESD Susceptibility	MIL-STD-883, Method 3015, Class 1, HBM: 1500V
Fine Leak Test	MIL-STD-883, Method 1014, Condition A
Flammability	UL94-V0
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
Moisture Resistance	MIL-STD-883, Method 1004
Moisture Sensitivity	J-STD-020, MSL 1
Resistance to Soldering Heat	MIL-STD-202, Method 210, Condition K
Resistance to Solvents	MIL-STD-202, Method 215
Solderability	MIL-STD-883, Method 2003
Temperature Cycling	MIL-STD-883, Method 1010, Condition B
Vibration	MIL-STD-883, Method 2007, Condition A

#### MARKING SPECIFICATIONS



MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EV32C4	CERAMIC	3.3V	057K	09/09