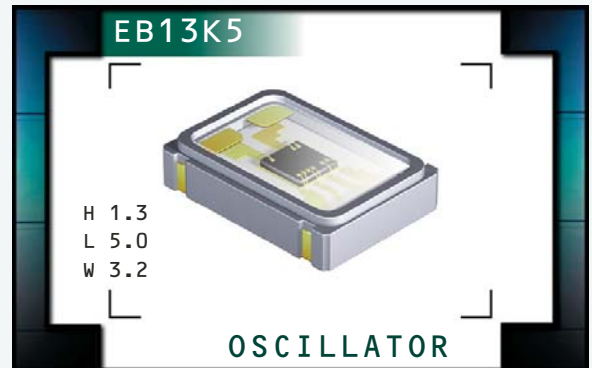


# EB13K5 Series



**ECLIPTEK**<sup>®</sup>  
CORPORATION

- Crystal Clock Oscillators
- LVCMOS Output
- +3.3V Supply Voltage
- Tri-State Output Function
- 4 Pad Ceramic SMD Package
- Low Stand-by Current
- RoHS Compliant (Pb-Free)



## NOTES

## ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>		32.768kHz
<b>Operating Temperature Range</b>		0°C to +70°C or -40°C to +85°C
<b>Storage Temperature Range</b>		-55°C to +125°C
<b>Supply Voltage (V<sub>DD</sub>)</b>		3.3V <sub>DC</sub> ±5%
<b>Input Current</b>		1mA 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, First Year Aging at 25°C, Shock, and Vibration	±100ppm Maximum ±50ppm Maximum ±25ppm Maximum ±20ppm Maximum
<b>Output Voltage Logic High (V<sub>OH</sub>)</b>		90% of V <sub>DD</sub> Minimum I <sub>OH</sub> = -2mA
<b>Output Voltage Logic Low (V<sub>OL</sub>)</b>		10% of V <sub>DD</sub> Maximum I <sub>OL</sub> = +2mA
<b>Rise Time / Fall Time</b>	20% to 80% of Waveform	0.5µSeconds Maximum
<b>Load Drive Capability</b>		15pF Maximum
<b>Duty Cycle</b>	at 50% of Waveform	50 ±5(%)
<b>Tri-State Input Voltage</b>	V <sub>IH</sub> : ≥90% of V <sub>DD</sub> or No Connection V <sub>IH</sub> : ≤10% of V <sub>DD</sub>	Enables Output Disables Output: High Impedance
<b>Standby Current</b>	Disabled Output: High Impedance	10µA Maximum
<b>Aging (at 25°C)</b>		±5ppm / year Maximum
<b>Start Up Time</b>		10mSeconds Maximum

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
OSCILLATOR

SERIES  
EB13K5

PACKAGE  
CERAMIC

VOLTAGE  
3.3V

CLASS  
057D

REV. DATE  
08/09

## PART NUMBERING GUIDE

### EB13K5 F 2 H - 32.768K TR

#### FREQUENCY TOLERANCE / STABILITY

C = ±100ppm Maximum over 0°C to +70°C  
 D = ±50ppm Maximum over 0°C to +70°C  
 E = ±25ppm Maximum over 0°C to +70°C  
 F = ±20ppm Maximum over 0°C to +70°C  
 G = ±100ppm Maximum over -40°C to +85°C  
 H = ±50ppm Maximum over -40°C to +85°C  
 J = ±25ppm Maximum over -40°C to +85°C

#### DUTY CYCLE

2 = 50 ±5(%)

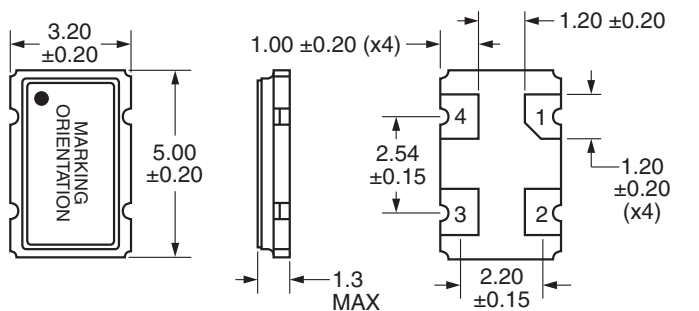
#### AVAILABLE OPTIONS

Blank = Bulk  
 TR = Tape & Reel

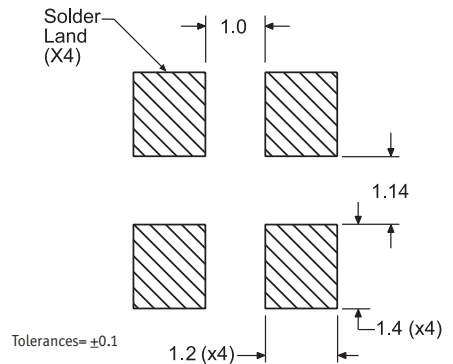
#### FREQUENCY

OUTPUT CONTROL FUNCTION  
 H = Tri-State (High Impedance)

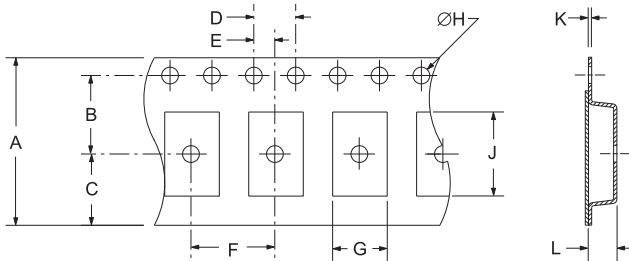
#### MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



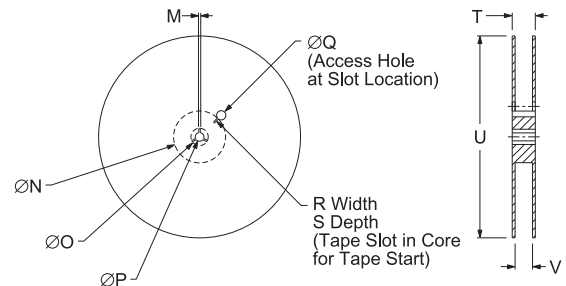
#### SUGGESTED SOLDER PAD LAYOUT ALL DIMENSIONS IN MILLIMETERS



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



REEL	A	B	C	D	E
	16.0 ±0.3	7.5 ±0.1	6.75 ±0.1	4.0 ±0.1	2.0 ±0.1
F	G	H	J	K	L
8.0 ±0.1	B0*	1.5 +0.1 -0.0	A0*	0.30 ±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

Line 1: EXX.XXX — Frequency in kHz (5 digits Maximum + Decimal)  
 Line 2: XXXXX — Ecliptek Manufacturing Identifier

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EB13K5	CERAMIC	3.3V	057D	08/09