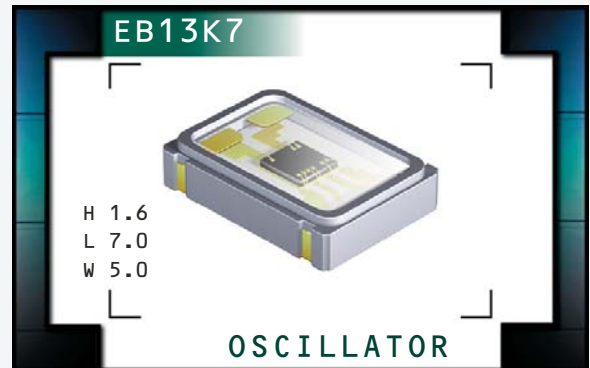


# EB13K7 Series



ECLIPTEK<sup>®</sup>  
CORPORATION

- RoHS Compliant (Pb-Free)
- Ceramic SMD package
- 3.3V supply voltage
- LVCMOS output
- Stability to  $\pm 20$ ppm
- Available on tape and reel



## 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 (<math>V_{DD}</math>)</b>		3.3V <sub>DC</sub> $\pm 5\%$
<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	$\pm 100$ ppm Maximum $\pm 50$ ppm Maximum $\pm 25$ ppm Maximum $\pm 20$ ppm Maximum
<b>Output Voltage Logic High (<math>V_{OH}</math>)</b>		90% of $V_{DD}$ Minimum $I_{OH} = -2$ mA
<b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>		10% of $V_{DD}$ Maximum $I_{OL} = +2$ mA
<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 $\pm 5$ (%)
<b>Tri-State Input Voltage</b>	$V_{IH} : \geq 90\%$ of $V_{DD}$ or No Connection $V_{IL} : \leq 10\%$ of $V_{DD}$	Enables Output Disables Output: High Impedance
<b>Standby Current</b>	Disabled Output: High Impedance	10µA Maximum
<b>Aging (at 25°C)</b>		$\pm 5$ ppm / year Maximum
<b>Start Up Time</b>		10mSeconds Maximum

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
OSCILLATOR

SERIES  
EB13K7

PACKAGE  
CERAMIC

VOLTAGE  
3.3V

CLASS  
057F

REV. DATE  
08/09

## PART NUMBERING GUIDE

### EB13K7 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 (Standard)  
 TR = Tape and Reel

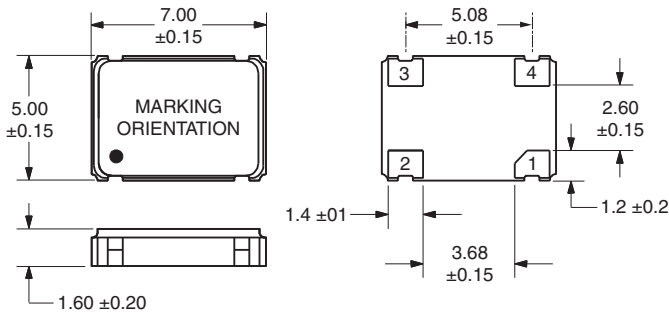
#### FREQUENCY

#### OUTPUT CONTROL FUNCTION

H = Tri-State (High Impedance)

#### MECHANICAL DIMENSIONS

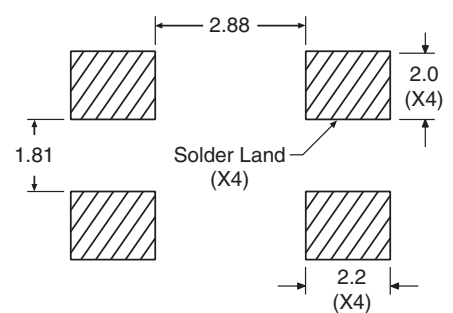
ALL DIMENSIONS IN MILLIMETERS



Pin 1: Tri-State  
 Pin 2: Case Ground  
 Pin 3: Output  
 Pin 4: Supply Voltage

#### SUGGESTED SOLDER PAD LAYOUT

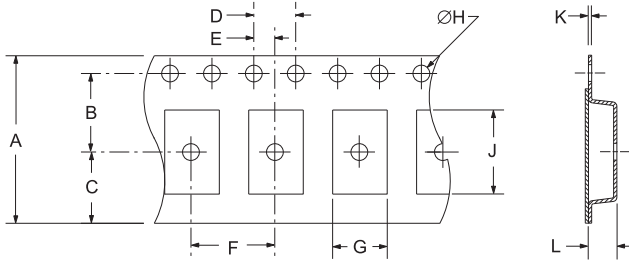
ALL DIMENSIONS IN MILLIMETERS



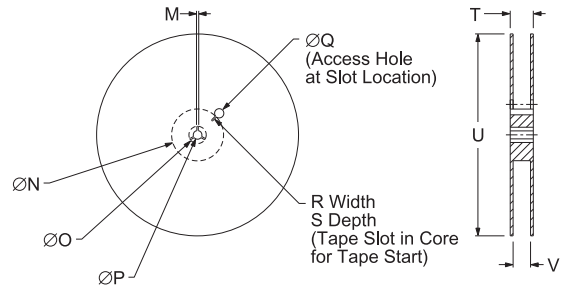
Tolerances = ±0.1

#### TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



REEL	A	B	C	D	E
	16+0.3-0.1	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*	0.3±0.05	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: ECLIPTEK  
 Line 2: XX.XXX K  
 Frequency in MHz (5 Digits Maximum + Decimal)  
 Line 3: XXXXX  
 Ecliptek Manufacturing Identifier

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EB13K7	CERAMIC	3.3V	OS7F	08/09