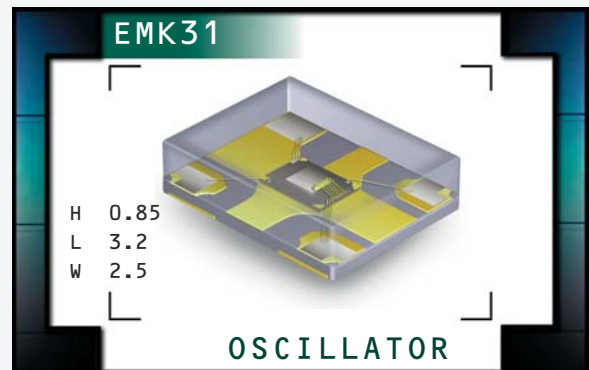


EMK31 Series



ECLIPTEK[®]
CORPORATION

- Utilizes a MEMS Silicon Resonator
- RoHS Compliant (Pb-Free)
- 2.5mm x 3.2mm Surface Mount Package
- LVHCMOS Output
- 1.8V Supply Voltage
- Stability to ± 50 ppm
- 30,000 G Shock Resistance
- Available on Tape & Reel
- Tri-State and Power Down Options



ELECTRICAL SPECIFICATIONS

Nominal Frequency		1.000MHz to 125MHz
Operating Temperature Range		-40°C to 85°C
Storage Temperature Range		-55°C to 125°C
Supply Voltage (V_{DD})		1.8V _{DC} $\pm 5\%$
Input Current	≤ 25.000 MHz	15mA Maximum
	> 25.000 MHz	18mA 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, 1st Year Aging at 25°C, 260°C Reflow, Shock, and Vibration	
Output Voltage Logic High (V_{OH})	$I_{OH} = -8$ mA	90% of V_{DD} Minimum
Output Voltage Logic Low (V_{OL})	$I_{OL} = +8$ mA	10% of V_{DD} Maximum
Rise Time / Fall Time	20% to 80% of waveform	2nSeconds Maximum
Duty Cycle	at 50% of waveform	50 ± 5 (%)
Load Drive Capability		15pF HCMOS Load Maximum
Output Control Function		Tri-State or Power Down
Output Control Input Voltage	V_{IH} of 70% of V_{DD} Minimum or No Connection V_{IL} of 30% of V_{DD} Maximum	Enables Output Disables Output: High Impedance State for Tri-state, Logic Low for Power Down
Standby Current		50 μ A Maximum
Peak to Peak Jitter (tPK)	1.000MHz to 12.287999MHz	500pSec Maximum, 200pSec Typical
	12.288MHz to 125.000MHz	250pSec Maximum, 100pSec Typical
Aging	First Year at 25°C	± 1 ppm Maximum
Start Up Time		50mSec Maximum

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EMK31	PLASTIC	1.8V	055K	11/07

PART NUMBERING GUIDE

EMK31 H 2 H - 50.000M TR

**FREQUENCY TOLERANCE & STABILITY/
OPERATING TEMPERATURE RANGE**

G=±100ppm Maximum over -40°C to +85°C
H=±50ppm Maximum over -40°C to +85°C

DUTY CYCLE

2=50% ±5%

LOGIC CONTROL

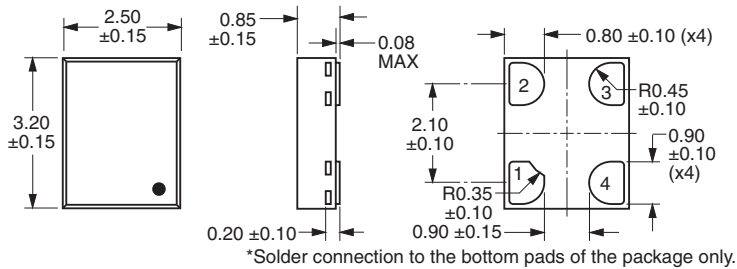
H=Tri-State (High Impedance)
J=Power Down (Logic Low)

AVAILABLE OPTIONS

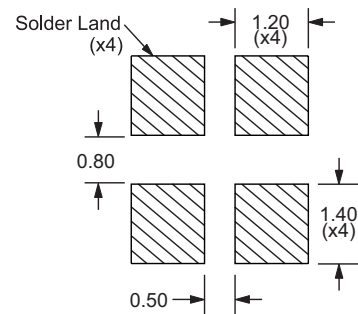
Blank=Bulk
TR=Tape and Reel (Standard)

FREQUENCY

MECHANICAL DIMENSIONS
ALL DIMENSIONS IN MILLIMETERS



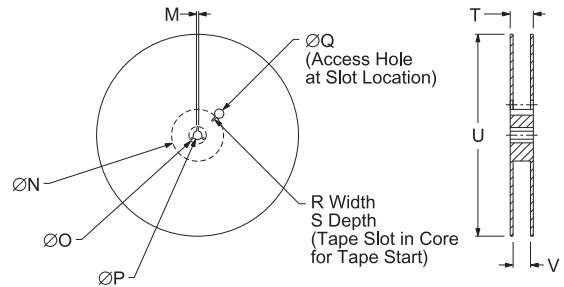
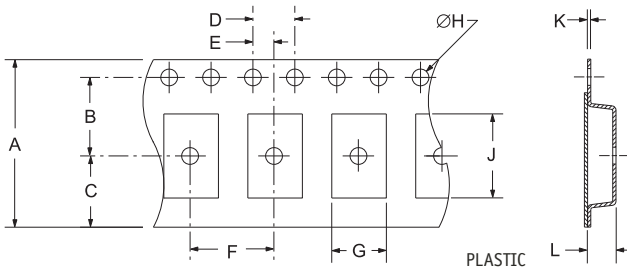
SUGGESTED SOLDER PAD LAYOUT
ALL DIMENSIONS IN MILLIMETERS



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

Tolerances=±0.1

TAPE AND REEL DIMENSIONS
ALL DIMENSIONS IN MILLIMETERS



	A	B	C	D	E
	12.0 ±0.3	5.5 ±0.05	4.75 ±0.05	4.0 ±0.1	2.0 ±0.1
	F	G	H	J	K
	4.0 ±0.2	A0*	1.5 ±1/-0	B0*	0.3 ±0.05
				L	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
	2.5 MIN	10 MIN	18.4 MAX	180 MAX	12.4 ±2/-0
					QTY/REEL
					1,000

*Compliant to EIA 481C

ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

Characteristic	Specification
ESD Susceptibility	MIL-STD-883, Method 3015, Class 2, HBM: 2000V
Flammability	UL94-V0
Mechanical Shock	MIL-STD-883, Method 2002, Condition G, 30,000G
Moisture Resistance	MIL-STD-883, Method 1004
Moisture Sensitivity Level	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 (Four I/O Pads on bottom of package only)
Temperature Cycling	MIL-STD-883, Method 1010, Condition B
Thermal Shock	MIL-STD-883, Method 1011, Condition B
Vibration	MIL-STD-883, Method 2007, Condition A, 20G

MARKING SPECIFICATIONS

Line 1: XXXX
Ecliptek Manufacturing Lot Code

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES EMK31	PACKAGE PLASTIC	VOLTAGE 1.8V	CLASS OS5K	REV. DATE 11/07
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