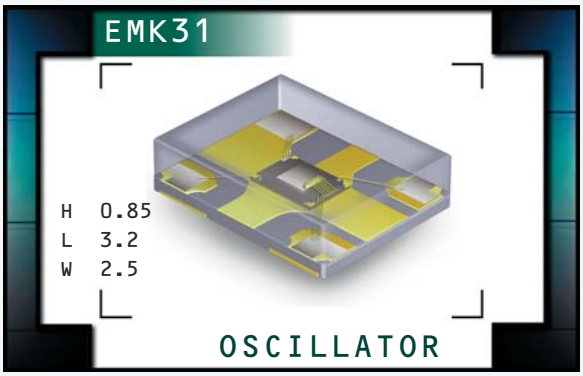
EMK31 Series

- MEMS First™ Resonator Technology
- RoHS Compliant (Pb-Free)
- 2.5mm x 3.2mm Surface Mount Package
- LVHCMOS Output
- 1.8V Supply Voltage
- Stability to ±50ppm
- 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} ±5%
Input Current	≤ 25.000MHz > 25.000MHz	15mA Maximum 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	±50ppm or ±100ppm Maximum
Output Voltage Logic High (V_{OH})	I_{OH} = -8mA	90% of V_{DD} Minimum
Output Voltage Logic Low (V_{OL})	I_{OL} = +8mA	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		50µA Maximum
Peak to Peak Jitter (tPK)	1.000MHz to 12.287999MHz 12.288MHz to 125.000MHz	500pSec Maximum, 200pSec Typical 250pSec Maximum, 100pSec Typical
Aging	First Year at 25°C	±1ppm Maximum
Start Up Time		50mSec Maximum

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

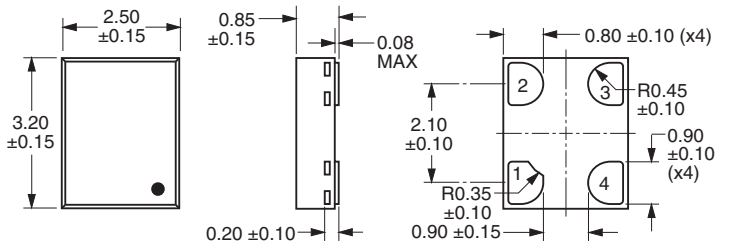
DUTY CYCLE
2=50% ±5%

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

AVAILABLE OPTIONS
Blank=Bulk
TR=Tape and Reel (Standard)

FREQUENCY

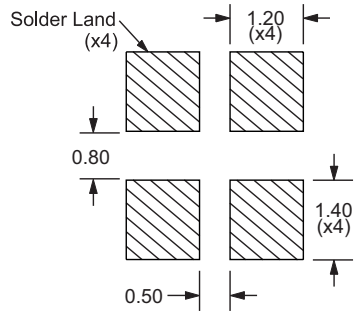
MECHANICAL DIMENSIONS
ALL DIMENSIONS IN MILLIMETERS



*Solder connection to the bottom pads of the package only.

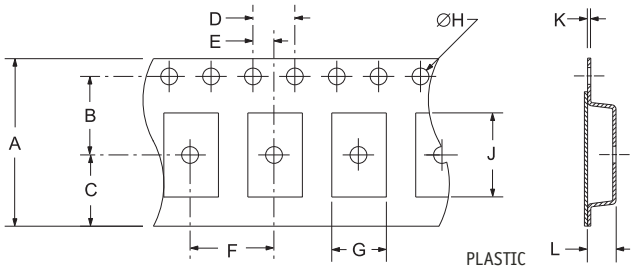
Pin 1: Tri-State or Power Down
Pin 2: Case Ground
Pin 3: Output
Pin 4: Supply Voltage

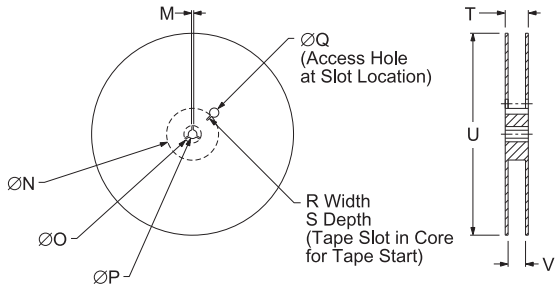
SUGGESTED SOLDER PAD LAYOUT
ALL DIMENSIONS IN MILLIMETERS



Tolerances= ±0.1

TAPE AND REEL DIMENSIONS
ALL DIMENSIONS IN MILLIMETERS





	A	B	C	D	E
	12.0 ±0.3	5.5 ±0.05	4.75 ±.05	4.0 ±0.1	2.0 ±0.1
F	G	H	J	K	L
4.0 ±0.2	A0*	1.5 +.1/-0	B0*	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	18.4 MAX	180 MAX	12.4 +2/-0	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

MEMS First™ is a registered trademark of SiTime Corporation.

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