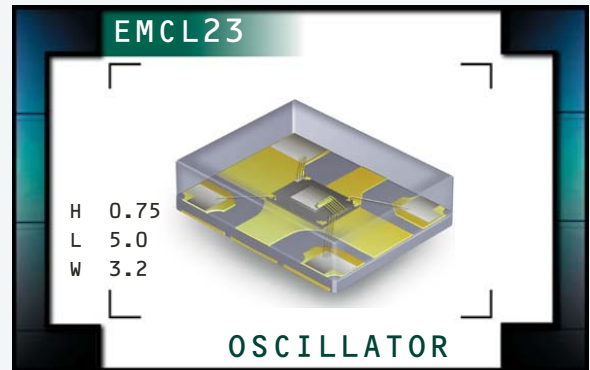


EMCL23 Series



ECLIPTEK[®]
CORPORATION

- MEMS Clock Oscillators
- LVPECL Output
- +3.3V Supply Voltage
- Complementary Output
- Output Enable and Standby Options
- 6 Pad Plastic SMD Package
- 30,000 G Shock Resistance
- RoHS Compliant (Pb-free)



ELECTRICAL SPECIFICATIONS

Nominal Frequency (MHz)		1.000MHz to 220.000MHz
<i>Some frequencies within this range may not be available</i>		
Operating Temperature Range		0°C to +70°C, -20°C to +70°C, or -40°C to +85°C
Storage Temperature Range		-55°C to +125°C
Supply Voltage (V_{cc})		3.3V _{DC} ±0.3V _{DC}
Input Current	Excluding Load Termination Current	80mA 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, Reflow, Shock, and Vibration	±100ppm, ±50ppm, ±25ppm, or ±20ppm Maximum
<i>Some tolerance stability options may not be available</i>		
Output Voltage Logic High (V_{OH})		2.35V _{DC} Typical, V _{CC} -1.025V _{DC} Minimum
Output Voltage Logic Low (V_{OL})		1.6V _{DC} Typical, V _{CC} -1.62V _{DC} Maximum
Rise Time / Fall Time	20% to 80% of waveform	150pSec Typical, 300pSec Maximum
Duty Cycle	at 50% of waveform	50 ±5(%)
Load Drive Capability		50 Ohms into V _{CC} -2.0V _{DC}
Logic Control / Additional Output		Output Enable (OE) and Complementary Output, or Standby (ST) and Complementary Output
Output Control Input Voltage	V _{IH} of 70% of V _{CC} Minimum No Connection V _{IL} of 30% of V _{CC} Maximum	Enables Outputs Enables Outputs Disables Outputs: High Impedance
Output Enable Current	Without Load	75mA Maximum (OE)
Standby Current	Without Load	30µA Maximum (ST)
Aging	First Year at 25°C	±1ppm Maximum
Start Up Time		10 mSeconds Maximum
Period Jitter	Deterministic Random RMS pk-pk	0.2pSec Typical 2.0pSec Typical 1.5pSec Typical, 3.0pSec Maximum 20pSec Typical, 25pSec Maximum
RMS Phase Jitter (Random)	1.000MHz to 100.000MHz	1.7pSec Typical
Fj=637kHz to 10MHz	100.001MHz to 156.250MHz	1.6pSec Typical
	156.251MHz to 220.000MHz	1.6pSec Typical
RMS Phase Jitter (Random)	1.000MHz to 100.000MHz	1.4pSec Typical
Fj=1MHz to 20MHz	100.001MHz to 156.250MHz	1.0pSec Typical
	156.251MHz to 220.000MHz	0.7pSec Typical
RMS Phase Jitter (Random)	1.000MHz to 100.000MHz	1.1pSec Typical
Fj=1.875MHz to 20MHz	100.001MHz to 156.250MHz	0.5pSec Typical
	156.251MHz to 220.000MHz	0.4pSec Typical

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
EMCL23

PACKAGE
PLASTIC

VOLTAGE
3.3V

CLASS
OS8H

REV. DATE
10/11

PART NUMBERING GUIDE

EMCL23 C 2 H - 155.520M TR

FREQUENCY TOLERANCE & STABILITY/ OPERATING TEMPERATURE RANGE

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
 L = ±100ppm Maximum over -20°C to +70°C
 M = ±50ppm Maximum over -20°C to +70°C
 N = ±25ppm Maximum over -20°C to +70°C

AVAILABLE OPTIONS

Blank = Bulk
 TR = Tape and Reel

FREQUENCY

LOGIC CONTROL/ADDITIONAL OUTPUT

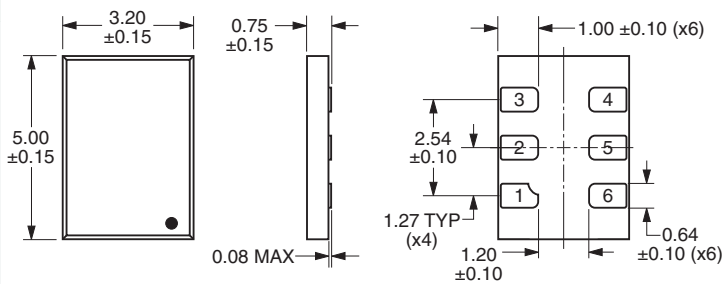
H = Output Enable (OE) and Complementary Output
 J = Standby (ST) and Complementary Output

DUTY CYCLE

2 = 50 ±5(%)

MECHANICAL DIMENSIONS

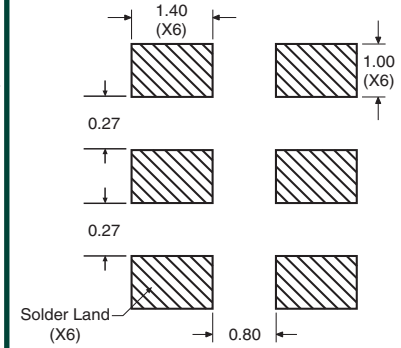
ALL DIMENSIONS IN MILLIMETERS



Pin 1: Output Enable (OE) or Standby (ST)
 Pin 2: No Connect
 Pin 3: Case Ground
 Pad 4: Output
 Pad 5: Complementary Output
 Pad 6: Supply Voltage

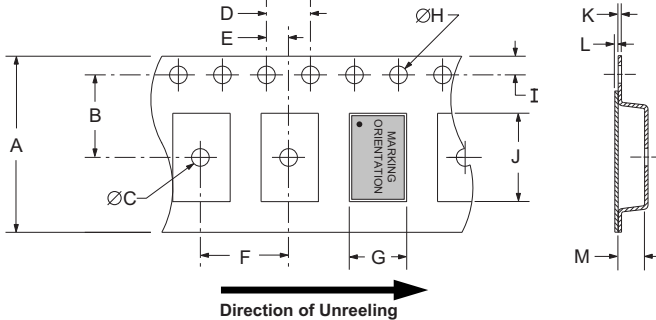
SUGGESTED SOLDER PAD LAYOUT

ALL DIMENSIONS IN MILLIMETERS

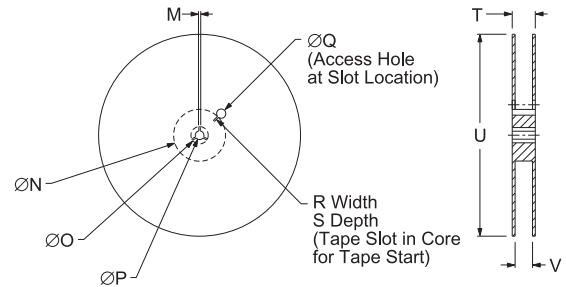


TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E	F
	16.0 ±0.3	7.5 ±0.1	1.50 MIN	4.0 ±0.1	2.0 ±0.1	8.0 ±0.1
G	H	I	J	K	L	M
A0*	1.5 ±0.1/-0.0	1.75 ±0.10	B0*	0.60 MAX	0.10 MAX	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	180 MAX	16.4 ±2/-0	1,000

*Compliant to EIA 481

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 (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: XXXXX
 Ecliptek Manufacturing Lot Code

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EMCL23	PLASTIC	3.3V	OS8H	10/11