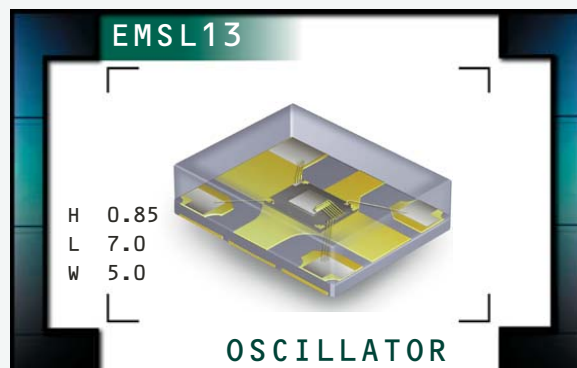


EMSL13 Series

- MEMS Clock Oscillator
- HCSL 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)



ECLIPTEK
CORPORATION



ELECTRICAL SPECIFICATIONS

Nominal Frequency (MHz) <i>Some frequencies within this range may not be available</i>		1.000MHz to 220.000MHz
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	70mA Maximum
Frequency Tolerance / Stability <i>Some tolerance stability options may not be available</i>	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
Output Voltage Logic High (V_{OH})		750mV _{DC} Typical, 600mV _{DC} Minimum
Output Voltage Logic Low (V_{OL})		25mV _{DC} Typical, 50mV _{DC} Maximum
Rise Time / Fall Time	20% to 80% of waveform	300pSec Typical, 350pSec Maximum
Duty Cycle	at 50% of waveform	50 ±5(%)
Load Drive Capability	Output and Complementary Output	50 Ohms to ground
Logic Control / Additional Output		Output Enable and Complementary Output, or Standby and Complementary Output
Output Control Input Voltage	V _{IH} of 70% of V _{CC} Minimum	Enables Outputs
	No Connection	Enables Outputs
	V _{IL} of 30% of V _{CC} Maximum	Disables Outputs: High Impedance
Output Enable Current	Without Load	65mA Maximum (OE)
Standby Current	Without Load	30µA Maximum (ST)
Aging	First Year at 25°C	±1ppm Maximum
Start Up Time		10mSeconds Maximum
Period Jitter	Deterministic	0.2pSec Typical
	Random	2.0pSec Typical
	RMS	1.5pSec Typical, 3.0pSec Maximum
	pk-pk	20pSec Typical, 25pSec Maximum
	Cycle to Cycle	10pSec Typical
RMS Phase Jitter (Random) Fj=637kHz to 10MHz	1.000MHz to 100.000MHz	1.7pSec Typical
	100.001MHz to 156.250MHz	1.6pSec Typical
	156.251MHz to 220.000MHz	1.6pSec Typical
RMS Phase Jitter (Random) Fj=1.5MHz to 22MHz	1.000MHz to 100.000MHz	0.8pSec Typical
	100.001MHz to 156.250MHz	0.6pSec Typical
	156.251MHz to 220.000MHz	0.4pSec Typical
RMS Phase Jitter (Random) Fj=1.875MHz to 20MHz	1.000MHz to 100.000MHz	0.7pSec Typical
	100.001MHz to 156.250MHz	0.5pSec Typical
	156.251MHz to 220.000MHz	0.4pSec Typical

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
EMSL13

PACKAGE
PLASTIC

VOLTAGE
3.3V

CLASS
OS7P

REV. DATE
10/11

PART NUMBERING GUIDE

EMSL13 C 2 H - 100.000M 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 & Reel

FREQUENCY

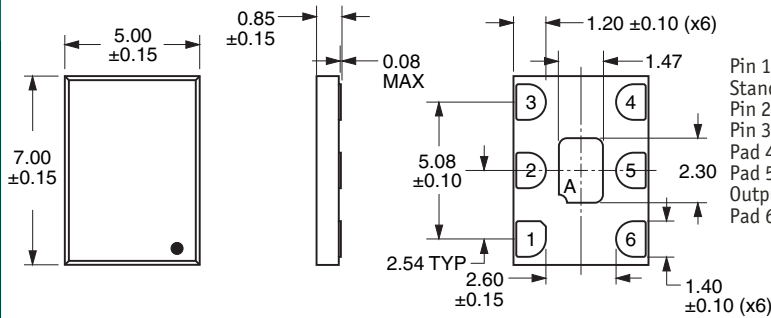
LOGIC CONTROL/ADDITIONAL OUTPUT

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

DUTY CYCLE

2=50 ±5(%)

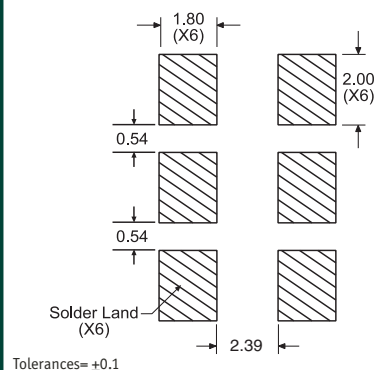
MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



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

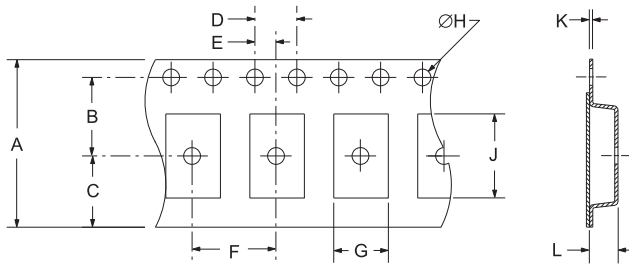
Note A: Center paddle is connected internally to oscillator ground (Pad 3).

SUGGESTED SOLDER PAD LAYOUT ALL DIMENSIONS IN MILLIMETERS

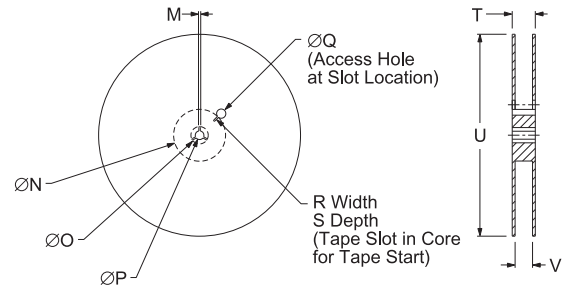


Tolerances= ±0.1

TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
	16±.3-1	7.5±.1	6.75±.1	4 ±.1	2±.1
F	G	H	J	K	L
8±.1	B0*	1.5 ±.1-0	A0*	.3 ±.05	K0*



REEL	M	N	O	P	Q
	1.5 MIN	50 MIN	20.2 MIN	13±.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 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 (Six 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 or XXXXX

Eclipsek Manufacturing Lot Code

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EMSL13	PLASTIC	3.3V	OS7P	10/11