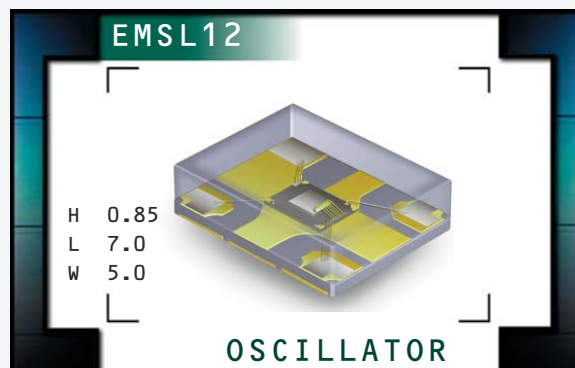


EMSL12 Series

- MEMS Clock Oscillator
- HCSL Output
- +2.5V 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})		+2.5V _{DC} ±0.125V _{DC}
Input Current	Excluding Load Termination Current	65mA 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 No Connection V_{IL} of 30% of V_{CC} Maximum Enables Outputs Enables Outputs Disables Outputs: High Impedance
Output Enable Current	Without Load	60mA 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 Random RMS pk-pk Cycle to Cycle 0.2pSec Typical 2.0pSec Typical 1.5pSec Typical, 3.0pSec Maximum 20pSec Typical, 25pSec Maximum 10pSec Typical
RMS Phase Jitter (Random) Fj=637kHz to 10MHz		1.000MHz to 100.000MHz 100.001MHz to 156.250MHz 156.251MHz to 220.000MHz 1.7pSec Typical 1.6pSec Typical 1.6pSec Typical
RMS Phase Jitter (Random) Fj=1.5MHz to 22MHz		1.000MHz to 100.000MHz 100.001MHz to 156.250MHz 156.251MHz to 220.000MHz 0.8pSec Typical 0.6pSec Typical 0.4pSec Typical
RMS Phase Jitter (Random) Fj=1.875MHz to 20MHz		1.000MHz to 100.000MHz 100.001MHz to 156.250MHz 156.251MHz to 220.000MHz 0.7pSec Typical 0.5pSec Typical 0.4pSec Typical

MANUFACTURER
ECLIPTEK CORP.

CATEGORY
OSCILLATOR

SERIES
EMSL12

PACKAGE
PLASTIC

VOLTAGE
2.5V

CLASS
OS7P

REV. DATE
10/11

EMSL12 C 2 H - 100.000M TR

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

Blank=Bulk
TR=Tape & Reel

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

$$2=50 \pm 5(\%)$$

ALL DIMENSIONS IN MILLIMETERS

Top View Dimensions:

- Package Width: 5.00 ± 0.15
- Package Height: 7.00 ± 0.15
- Pin Pitch (center-to-center): 1.20 ± 0.10 (x6)
- Pin 1 to Pin 4 Distance: 1.47
- Pin 1 to Pin 5 Distance: 2.30
- Pin 1 to Pin 6 Distance: 1.40 ± 0.10 (x6)

Side View Dimensions:

- Pin Height: 0.85 ± 0.15
- Maximum Pin Thickness: 0.08 MAX

Pin Detail View Dimensions:

- Pin 1 to Pin 2 Distance: 2.54 TYP
- Pin 2 to Pin 3 Distance: 2.60 ± 0.15
- Pin 3 to Pin 4 Distance: 5.08 ± 0.10
- Pin 4 to Pin 5 Distance: 2.30
- Pin 5 to Pin 6 Distance: 1.40 ± 0.10 (x6)

Pin 1 Standard Pin 2 Pin 3 Pad 4 Pad 5 Output Pad 6

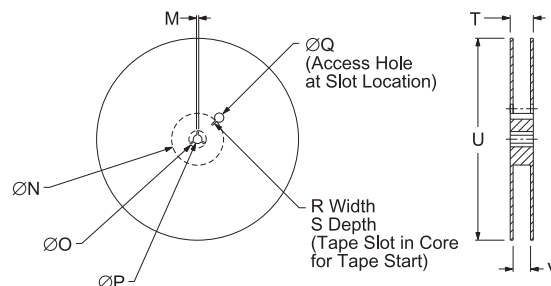
Note A: Center paddle is connected internally to oscillator ground (Pad 3).

Tolerances= +0.1

The drawing consists of three views of a mechanical component:

- Front View (Top):** Shows a rectangular part with a total width of A . It features a central horizontal slot of width B and a lower section of height C . There are four vertical rectangular features, each with a width of F and a height of J . The distance between the centers of these features is G . The top surface has a thickness of D , and the bottom surface has a thickness of E . A hole with diameter $\varnothing H$ is located on the right side.
- Top View (Bottom):** Shows the plan of the part with a total width of A and a total depth of L . It shows the four vertical features and the central slot.
- Side View (Right):** Shows the profile of the part with a total height of K . It shows the central slot and the four vertical features.

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	R0*	1.5 + 1-0	A0*	3 + 0.5	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

ESD Susceptibility
Flammability
Mechanical Shock
Moisture Resistance
Moisture Sensitivity Level
Resistance to Soldering Heat
Resistance to Solvents
Solderability

MIL-STD-883, Method 3015, Class 2, HBM: 2000V
UL94-V0
MIL-STD-883, Method 2002, Condition G, 30,000G
MIL-STD-883, Method 1004
J-STD-020, MSL 1
MIL-STD-202, Method 210, Condition K
MIL-STD-202, Method 215
MIL-STD-883, Method 2003 (Six I/O Pads on
bottom of package only)
MIL-STD-883, Method 1010, Condition B
MIL-STD-883, Method 1011, Condition B
MIL-STD-883, Method 2007, Condition A, 20G

Line 1: XXXX or XXXXX

– Ecliptek Manufacturing Lot Code

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EMSL12	PLASTIC	2.5V	0S7P	10/11