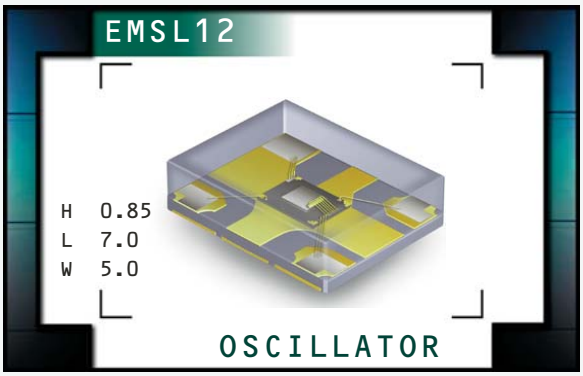
EMSL12 Series

- 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)



ELECTRICAL SPECIFICATIONS

Nominal Frequency (MHz) *Some frequencies within this range may not be available*		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 *Some tolerance stability options may not be available*	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 Stanby 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	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EMSL12	PLASTIC	2.5V	OS7P	10/11

PART NUMBERING GUIDE

EMSL12 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

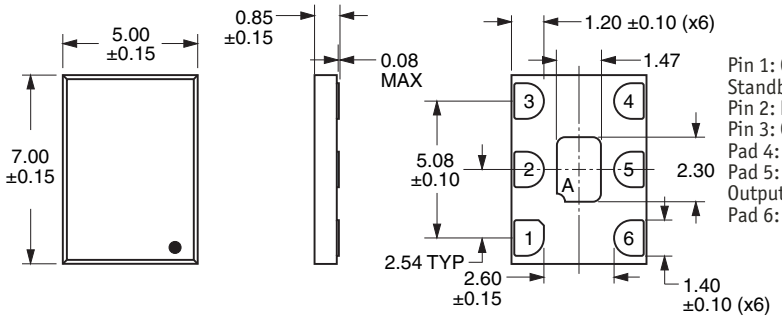
AVAILABLE OPTIONS
Blank=Bulk
TR=Tape & Reel

FREQUENCY

LOGIC CONTROL/ADDITIONAL OUTPUT
H=Output Enable (OE) and Complementary Output
J=Standby (ST) and Complementary Output

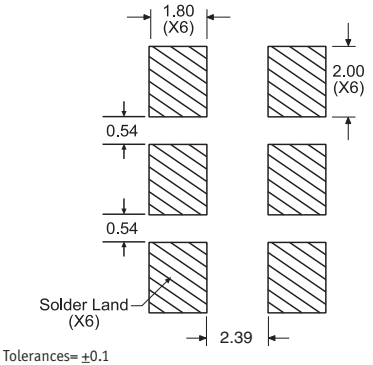
DUTY CYCLE
2=50 ±5(%)

MECHANICAL DIMENSIONS
ALL DIMENSIONS IN MILLIMETERS



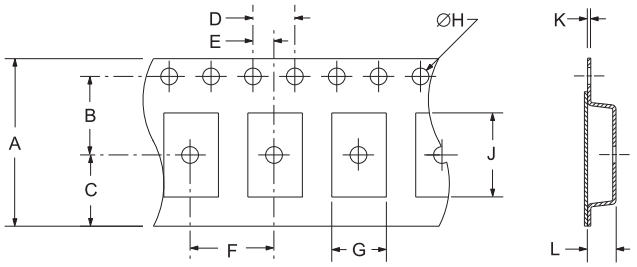
Note A: Center paddle is connected internally to oscillator ground (Pad 3).

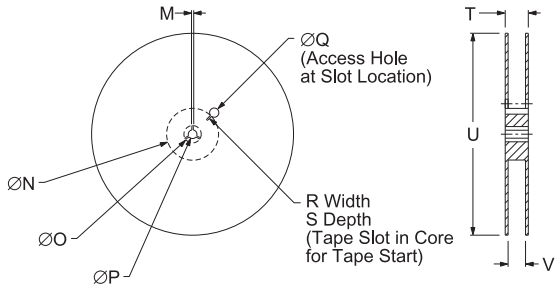
SUGGESTED SOLDER PAD LAYOUT
ALL DIMENSIONS IN MILLIMETERS



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
Ecliptek Manufacturing Lot Code

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
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