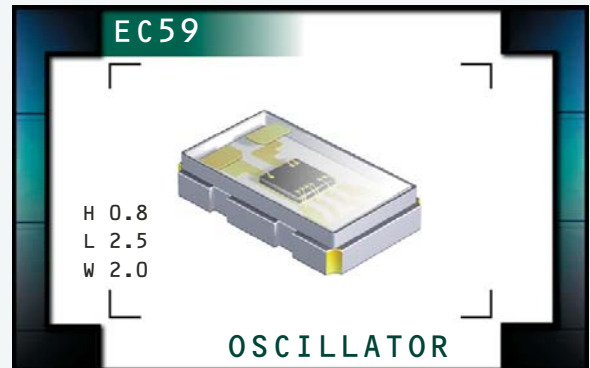


# EC59 Series



ECLIPTEK<sup>®</sup>  
CORPORATION

- Crystal Clock Oscillators
- LVCMOS Output
- +1.8V Supply Voltage
- Tri-State Output Function
- 4 Pad Ceramic SMD Package
- Low Stand-by Current
- RoHS Compliant (Pb-Free)



## ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>	1.000MHz	1.125MHz	1.250MHz	1.500MHz	1.536MHz	1.5625MHz	1.625MHz
	1.6875MHz	1.789773MHz	1.875MHz	2.000MHz	2.250MHz	2.500MHz	3.000MHz
	3.072MHz	3.125MHz	3.250MHz	3.375MHz	3.579545MHz	3.750MHz	4.000MHz
	4.500MHz	5.000MHz	6.000MHz	6.144MHz	6.250MHz	6.500MHz	6.750MHz
	7.15909MHz	7.500MHz	8.000MHz	9.000MHz	10.000MHz	12.000MHz	12.288MHz
	12.500MHz	13.000MHz	13.500MHz	14.31818MHz	15.000MHz	16.000MHz	18.000MHz
	20.000MHz	24.000MHz	24.576MHz	25.000MHz	26.000MHz	27.000MHz	28.63636MHz
	30.000MHz	32.000MHz	36.000MHz	40.000MHz	48.000MHz	49.152MHz	50.000MHz

**Frequency Tolerance / Stability** Inclusive of all conditions: Calibration Tolerance at 25°C, ±100ppm Maximum  
 Frequency Stability over the Operating Temperature Range, ±50ppm Maximum  
 Supply Voltage Change, Output Load Change, First Year Aging at 25°C, 260°C Reflow, Shock, and Vibration

**Operating Temperature Range** -10°C to 70°C or -40°C to 85°C

**Supply Voltage (V<sub>DD</sub>)** 1.8V<sub>DC</sub> ±5%

**Input Current (No Load)** 1.000MHz to 19.999MHz 2.5mA Maximum  
 20.000MHz to 39.999MHz 3mA Maximum  
 40.000MHz to 50.000MHz 3.5mA Maximum

**Output Voltage Logic High (V<sub>OH</sub>)** 90% of V<sub>DD</sub> Minimum I<sub>OH</sub> = -4mA

**Output Voltage Logic Low (V<sub>OL</sub>)** 10% of V<sub>DD</sub> Maximum I<sub>OL</sub> = +4mA

**Rise Time / Fall Time** 20% to 80% of Waveform 10 nSeconds Maximum

**Duty Cycle** at 50% of Waveform 50 ±10% (Standard) or 50 ±5% (Optional)

**Load Drive Capability** 15pF Maximum

**Tri-State Input Voltage** V<sub>TH</sub>: ≥90% of V<sub>DD</sub> or No Connection Enables Output  
 V<sub>IL</sub>: ≤10% of V<sub>DD</sub> Disables Output: High Impedance

**Standby Current** 10µA Maximum

**RMS Phase Jitter** 12kHz to 20MHz offset frequency 1pSec Maximum

**Start Up Time** 10mSeconds Maximum

**Storage Temperature Range** -55°C to 125°C

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES EC59	PACKAGE CERAMIC	VOLTAGE 1.8V	CLASS 057W	REV. DATE 01/10
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## PART NUMBERING GUIDE

### EC59 00 ETTTS - 24.000M TR

**FREQUENCY TOLERANCE / STABILITY**

00=±100ppm Maximum  
45=±50ppm Maximum

**OPERATING TEMP. RANGE**

Blank=0°C to 70°C  
ET=-40°C to 85°C

**DUTY CYCLE**

Blank=50±10(%)  
T=50±5(%)

**AVAILABLE OPTIONS**

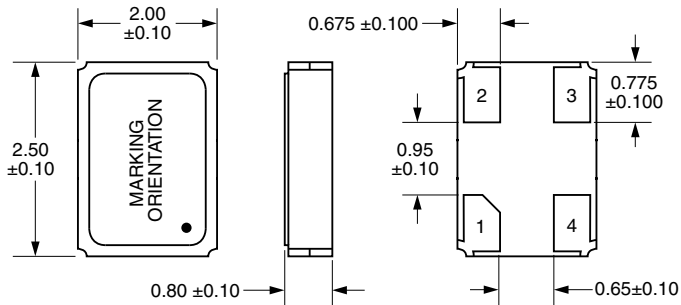
Blank=Bulk  
TR=Tape & Reel

**FREQUENCY**

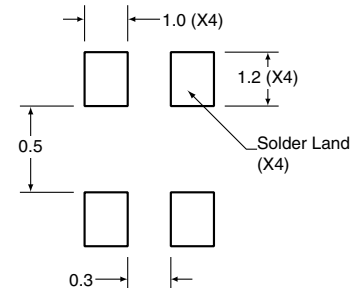
**OUTPUT CONTROL FUNCTION**

TS=Tri-State

**MECHANICAL DIMENSIONS**  
ALL DIMENSIONS IN MILLIMETERS

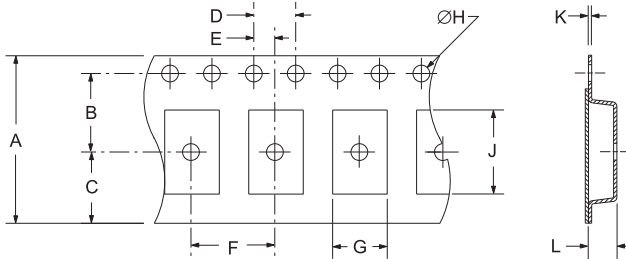


**SUGGESTED SOLDER PAD LAYOUT**  
ALL DIMENSIONS IN MILLIMETERS

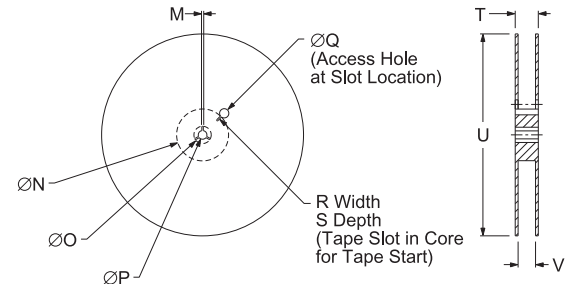


All Tolerances are ±0.1

**TAPE AND REEL DIMENSIONS**  
ALL DIMENSIONS IN MILLIMETERS



REEL	A	B	C	D	E
	8.0 ±.2	3.5 ±.1	2.75 ±.1	4 ±.1	2 ±.1
F	G	H	J	K	L
4 ±.1	B0*	1.55 ±.05	A0*	.25 ±.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	14.4 MAX	360 MAX	8.4 ±1.5-0	1,000

\*Compliant to EIA 481A

**ENVIRONMENTAL/MECHANICAL SPECIFICATIONS**

Characteristic	Specification
ESD Susceptibility	MIL-STD-883, Method 3015, Class 1, HBM: 1500V
Fine Leak Test	MIL-STD-883, Method 1014, Condition A
Flammability	UL94-V0
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
Mechanical Shock	MIL-STD-883, Method 2002, Condition B
Moisture Resistance	MIL-STD-883, Method 1004
Moisture Sensitivity	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
Temperature Cycling	MIL-STD-883, Method 1010, Condition B
Vibration	MIL-STD-883, Method 2007, Condition A

**MARKING SPECIFICATIONS**

Line 1: EXX.X  
Nominal Frequency in MHz

Line 2: XXXXX  
Ecliptek Manufacturing Identifier

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EC59	CERAMIC	1.8V	OS7W	01/10