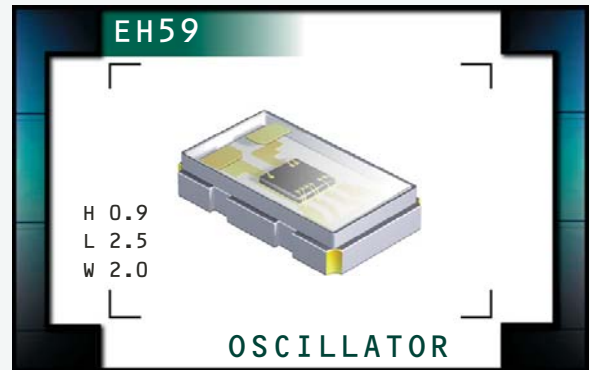


# EH59 Series



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> <i>Some frequencies within this range may not be available</i>		2.600MHz to 133.000MHz
<b>Operating Temperature Range</b>		0°C to +70°C or -40°C to +85°C
<b>Storage Temperature Range</b>		-55°C to +125°C
<b>Supply Voltage (V<sub>DD</sub>)</b>		1.8V <sub>DC</sub> ±5%
<b>Input Current (No Load)</b>	2.600MHz to 25.000MHz 25.001MHz to 75.000MHz 75.001MHz to 100.000MHz 100.001MHz to 133.000MHz	3.5mA Maximum 4mA Maximum 5mA Maximum 8mA Maximum
<b>Frequency Tolerance / Stability</b> <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, First Year Aging at 25°C, 260°C Reflow, Shock, and Vibration	±100ppm Maximum ±50ppm Maximum ±25ppm Maximum ±20ppm Maximum
<b>Output Voltage Logic High (V<sub>OH</sub>)</b>		90% of V <sub>DD</sub> Minimum I <sub>OH</sub> = -8mA
<b>Output Voltage Logic Low (V<sub>OL</sub>)</b>		10% of V <sub>DD</sub> Maximum I <sub>OL</sub> = +8mA
<b>Rise Time / Fall Time</b>	2.600MHz to 50.000MHz 20% to 80% of Waveform 50.001MHz to 75.000MHz 20% to 80% of Waveform 75.001MHz to 133.000MHz 20% to 80% of Waveform	6nSeconds Maximum 4nSeconds Maximum 2nSeconds Maximum
<b>Load Drive Capability</b>		15pF Maximum
<b>Output Logic Type</b>		CMOS
<b>Duty Cycle</b>	at 50% of Waveform at 50% of Waveform (Only available over 2.6MHz to 50MHz)	50 ±10(%) 50 ±5(%)
<b>Tri-State Input Voltage</b>	V <sub>IH</sub> : ≥90% of V <sub>DD</sub> or No Connection V <sub>IL</sub> : ≤10% of V <sub>DD</sub>	Enables Output Disables Output: High Impedance
<b>Standby Current</b>	Pin 1 = Ground	10µA Maximum
<b>Aging (at 25°C)</b>		±5ppm / year Maximum
<b>Start Up Time</b>		10mSeconds Maximum
<b>RMS Phase Jitter</b>	F <sub>j</sub> = 12kHz to 20MHz	20pSec Typical, 30pSec Maximum
<b>Period Jitter (RMS)</b>		15pSec Typical
<b>Period Jitter (pk-pk)</b>		100pSec Typical, 200pSec Maximum

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
OSCILLATOR

SERIES  
EH59

PACKAGE  
CERAMIC

VOLTAGE  
1.8V

CLASS  
056Z

REV. DATE  
09/11

## PART NUMBERING GUIDE

### EH59 00 ET TS - 24.000M TR

#### FREQUENCY TOLERANCE / STABILITY

00 = ±100ppm Maximum  
 45 = ±50ppm Maximum  
 25 = ±25ppm Maximum  
 20 = ±20ppm 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

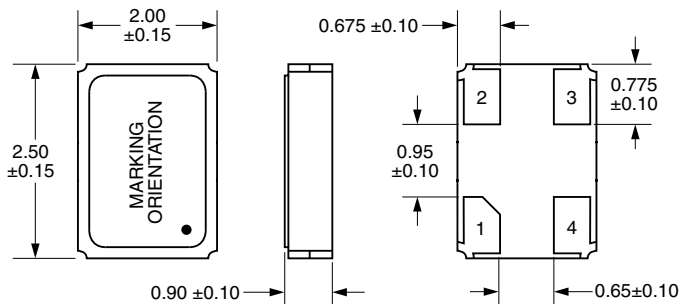
#### FREQUENCY

#### OUTPUT CONTROL FUNCTION

TS = Tri-State

#### MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS

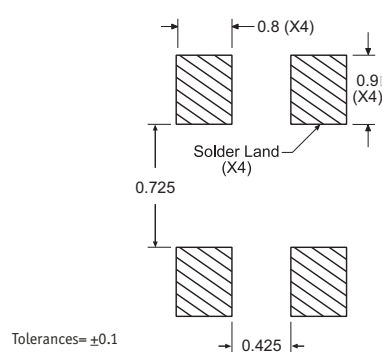


Pin 1: Tri-State  
 Pin 2: Case Ground

Pin 3: Output  
 Pin 4: Supply Voltage

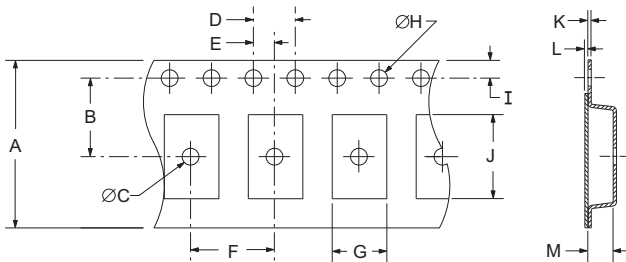
#### SUGGESTED SOLDER PAD LAYOUT

ALL DIMENSIONS IN MILLIMETERS

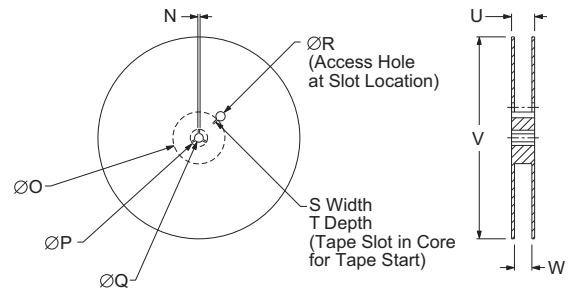


#### TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E	F
	8.0 ±0.3	3.50 ±0.05	1.0 MIN	4.0 ±0.1	2.00 ±0.05	4.0 ±0.1
G	H	I	J	K	L	M
A0	1.5 +0.1/-0.0	1.75 ±0.10	B0	0.6 MAX	0.10 MAX	K0



REEL	N	O	P	Q	R
	1.5 MIN	50 MIN	20.2 MIN	13.0 ±0.2	40 MIN
S	T	U	V	W	QTY/REEL
	2.5 MIN	10 MIN	14.4 MAX	8.4 ±1.5/-0.0	1,000

Note: Compliant to EIA-481

#### 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: EPO  
 Line 2: XXXXX  
 Ecliptek Manufacturing Identifier

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EH59	CERAMIC	1.8V	OS6Z	09/11