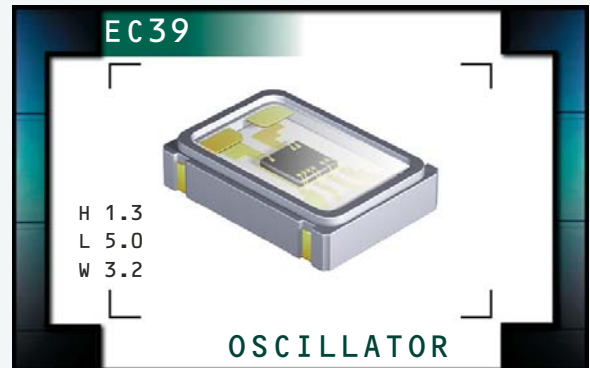


# EC39 Series



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)



## NOTES

### ELECTRICAL SPECIFICATIONS

<b>Frequency Range (F<sub>0</sub>)</b>	1.000MHz to 110.000MHz	
<b>Operating Temperature Range (OTR)</b>	-10°C to +70°C -40°C to +85°C	
<b>Storage Temperature Range (STR)</b>	-55°C to +125°C	
<b>Supply Voltage (V<sub>DD</sub>)</b>	1.8V <sub>DC</sub> ±5%	
<b>Input Current (I<sub>DD</sub>)</b>	1.000MHz to 9.999MHz	3mA Maximum
	10.000MHz to 34.999MHz	4mA Maximum
	35.000MHz to 49.999MHz	8mA Maximum
	50.000MHz to 69.999MHz	9mA Maximum
	70.000MHz to 89.999MHz	11mA Maximum
	90.000MHz to 110.000MHz	12mA Maximum
<b>Frequency Tolerance/Stability</b>	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, Shock, and Vibration	±100ppm Maximum ±50ppm Maximum ±25ppm Maximum ±20ppm Maximum
<b>Output Voltage Logic High (V<sub>OH</sub>)</b>	I <sub>OH</sub> = -4.0mA	90% of V <sub>DD</sub> Minimum
<b>Output Voltage Logic Low (V<sub>OL</sub>)</b>	I <sub>OL</sub> = +4.0mA	10% of V <sub>DD</sub> Maximum
<b>Rise Time / Fall Time (T<sub>R</sub>/T<sub>F</sub>)</b>	20% to 80% of Waveform, 1.000MHz to 39.999MHz	6nSeconds Maximum
	20% to 80% of Waveform, 40.000MHz to 79.999MHz	4nSeconds Maximum
	20% to 80% of Waveform, 80.000MHz to 110.000MHz	3nSeconds Maximum
<b>Duty Cycle (SYM)</b>	at 50% of Waveform	50 ±10(%) 50 ±5(%)
<b>Load Drive Capability (C<sub>LOAD</sub>)</b>	15pF Maximum	
<b>Output Logic Type</b>	CMOS	
<b>Tri-State Input Voltage</b>	No Connection V <sub>IH</sub> : 90% of V <sub>DD</sub> Minimum V <sub>IL</sub> : 10% of V <sub>DD</sub> Maximum	Enables Output Enables Output Disables Output: High Impedance
<b>Standby Current</b>	Disabled Output: High Impedance	10µA Maximum
<b>Start Up Time (T<sub>S</sub>)</b>	10 mSeconds Maximum	
<b>RMS Phase Jitter</b>	12kHz to 20MHz offset frequency	1pSeconds Maximum

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES EC39	PACKAGE CERAMIC	VOLTAGE 1.8V	CLASS OS1F	REV. DATE 10/11
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## PART NUMBERING GUIDE

### EC39 00 ET TS - 30.000M TR

#### FREQUENCY TOLERANCE / STABILITY

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

#### PACKAGING OPTIONS

Blank = Bulk  
 TR = Tape & Reel

#### FREQUENCY

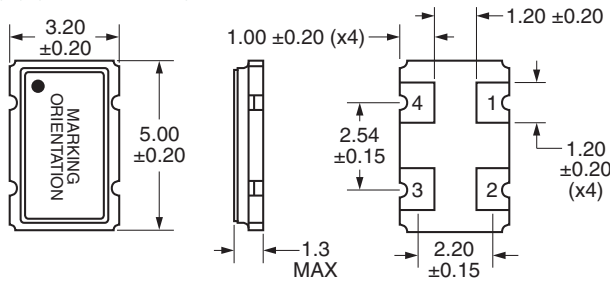
#### DUTY CYCLE

Blank = 50 ±10(%)  
 T = 50 ±5(%)

#### OPERATING TEMPERATURE RANGE

Blank = -10°C to +70°C  
 ET = -40°C to +85°C

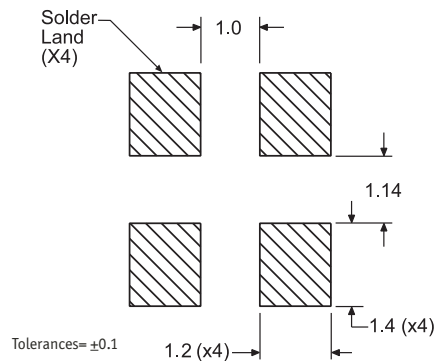
#### MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



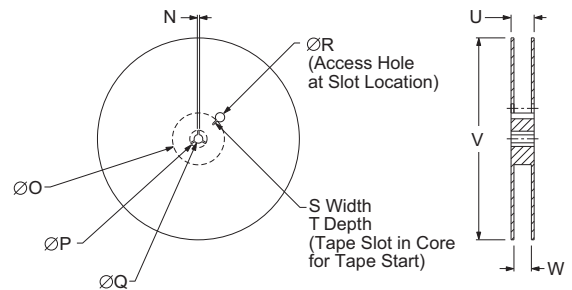
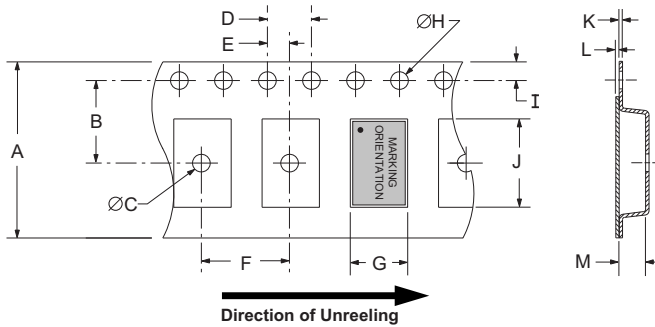
Note: Pin 1 Chamfer not shown.

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
	16.0 ±0.3	7.5 ±0.1	1.50 MIN	4.0 ±0.1	2.0 ±0.1	8.0 ±0.1
G	H	I	J	K	L	M
A0	1.5 +0.1/-0.0	1.75 ±0.10	B0	0.60 MAX	0.10 MAX	K0

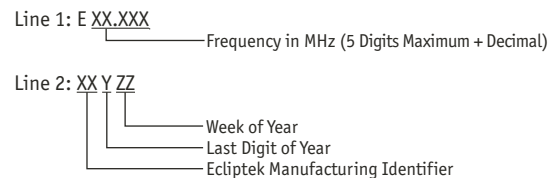
REEL	N	O	P	Q	R
	1.5 MIN	50 MIN	20.2 MIN	13.0 ±0.2	40 MIN
S	T	U	V	W	QTY/REEL
	2.5 MIN	10 MIN	22.4 MAX	180 MAX	16.4 +2.0/-0.0
					1,000

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



MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EC39	CERAMIC	1.8V	OS1F	10/11