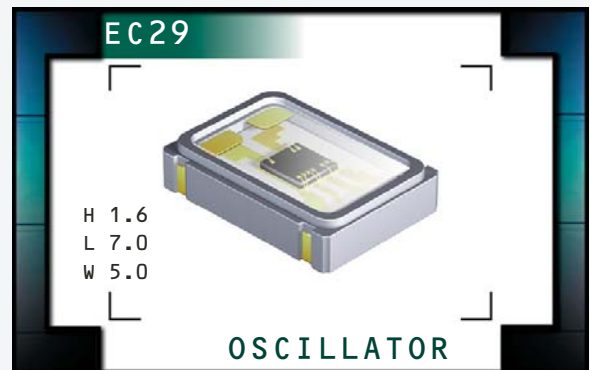


# EC29 Series



**ECLIPTEK**<sup>®</sup>  
CORPORATION

- RoHS Compliant (Pb-Free)
- LVCMOS output
- 1.8V Supply Voltage
- Ceramic SMD package
- Stability to  $\pm 20$ ppm
- Standby Function
- Available on Tape and Reel



## ELECTRICAL SPECIFICATIONS

**Frequency Range ( $F_0$ )** 1.544MHz to 80.000MHz and 98.304MHz, 100.000MHz, 106.250MHz, 110.000MHz, 125.000MHz

**Operating Temperature Range (OTR)** 0°C to 70°C  
-40°C to 85°C

**Storage Temperature Range (STR)** -55°C to 125°C

**Supply Voltage ( $V_{DD}$ )** 1.8V<sub>DC</sub>  $\pm 5\%$

<b>Input Current (<math>I_{DD}</math>)</b>	1.544MHz to 10.000MHz	2mA Maximum
	10.001MHz to 25.000MHz	3mA Maximum
	25.001MHz to 40.000MHz	4mA Maximum
	40.001MHz to 50.000MHz	8mA Maximum
	50.001MHz to 70.000MHz	10mA Maximum
	70.001MHz to 100.000MHz	18mA Maximum
	100.001MHz to 110.000MHz	20mA Maximum
110.001MHz to 125.000MHz	25mA Maximum	

**Frequency Tolerance/Stability** Inclusive of all conditions: Calibration Tolerance at 25°C,  $\pm 100$ ppm,  $\pm 50$ ppm,  $\pm 25$ ppm, or  
Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change,  $\pm 20$ ppm  
First Year Aging at 25°C, Shock, and Vibration

<b>Output Voltage Logic High (<math>V_{OH}</math>)</b>	$I_{OH} = -2.8$ mA, 1.544MHz to 40.000MHz	90% of $V_{DD}$ Minimum
	$I_{OH} = -8$ mA, 40.001MHz to 125.000MHz	90% of $V_{DD}$ Minimum

<b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>	$I_{OL} = 2.8$ mA, 1.544MHz to 40.000MHz	10% of $V_{DD}$ Maximum
	$I_{OL} = 8$ mA, 40.001MHz to 125.000MHz	10% of $V_{DD}$ Maximum

<b>Rise Time / Fall Time (<math>T_R/T_F</math>)</b>	< 40.000MHz 10% to 90% of Waveform	6 nSeconds Maximum
	$\geq 40.000$ MHz 10% to 90% of Waveform	3 nSeconds Maximum

<b>Duty Cycle (SYM)</b>	at 50% of Waveform	50 $\pm 10$ (%) (Standard)
	at 50% of Waveform	50 $\pm 5$ (%) (Optional)

**Load Drive Capability ( $C_{LOAD}$ )** 15pF Maximum

<b>Tri-State Input Voltage</b>	No Connection	Enables Output
	$V_{IH} \geq 90\%$ of $V_{DD}$	Enables Output
	$V_{IL} \leq 10\%$ of $V_{DD}$	Disables Output: High Impedance

<b>Standby Current</b>	Disabled Output: High Impedance, 1.544MHz to 40MHz	10 $\mu$ A Maximum
	Disabled Output: High Impedance, 40.001MHz to 70MHz	100 $\mu$ A Maximum
	Disabled Output: High Impedance, 70.001MHz to 125MHz	10 $\mu$ A Maximum

**Start Up Time ( $T_S$ )** 10 mSeconds Maximum

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

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES EC29	PACKAGE CERAMIC	VOLTAGE 1.8V	CLASS OS1B	REV. DATE 01/06
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## PART NUMBERING GUIDE

### EC29 00 ET TS - 30.000M TR

#### FREQUENCY TOLERANCE / STABILITY

00=±100ppm Maximum (Standard)  
 45=±50ppm Maximum, 25=±25ppm Maximum  
 20=±20ppm Maximum

#### OPERATING TEMPERATURE RANGE

Blank=0°C to 70°C (Standard)  
 ET=-40°C to 85°C

#### PACKAGING OPTIONS

Blank=Bulk (Standard)  
 TR=Tape and Reel

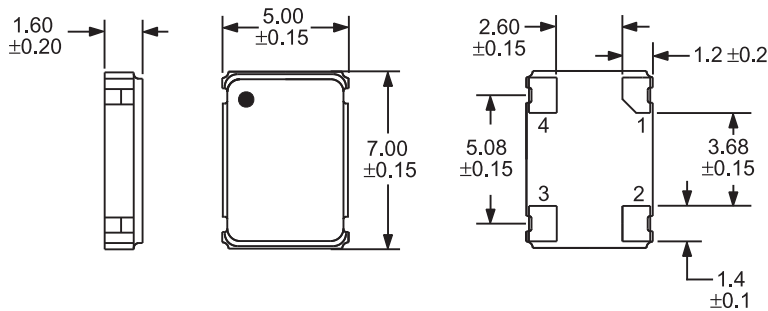
#### FREQUENCY

#### DUTY CYCLE

Blank=50 ±10(%) (Standard)  
 T=50 ±5(%)

#### MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS

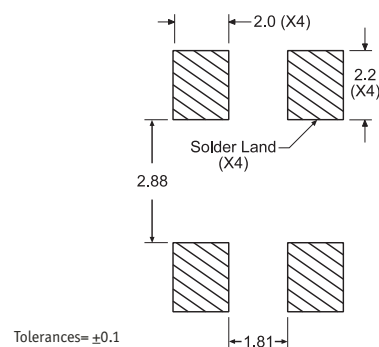


Pin 1: Tri-State  
 Pin 2: Case Ground

Pin 3: Output  
 Pin 4: Supply Voltage

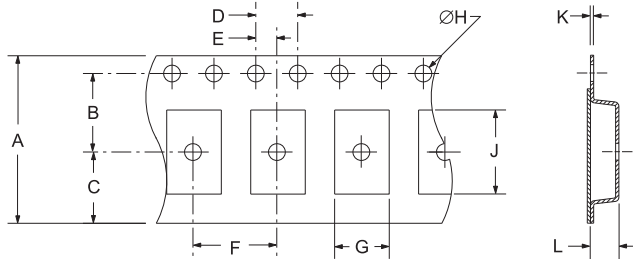
#### SUGGESTED SOLDER PAD LAYOUT

ALL DIMENSIONS IN MILLIMETERS

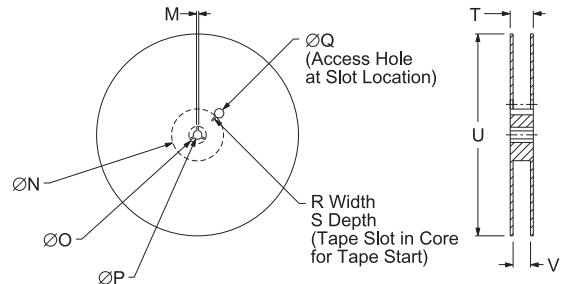


#### TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
	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
Fine Leak Test	MIL-STD-883, Method 1014, Condition A
Gross Leak Test	MIL-STD-883, Method 1014, Condition C
Mechanical Shock	MIL-STD-202, Method 213, Condition C
Vibration	MIL-STD-883, Method 2007, Condition A
Solderability	MIL-STD-883, Method 2002
Temperature Cycling	MIL-STD-883, Method 1010
Resistance to Soldering Heat	MIL-STD-202, Method 210
Resistance to Solvents	MIL-STD-202, Method 215

#### MARKING SPECIFICATIONS

Line 1: ECLIPTEK  
 Line 2: XX.XXX M  
 Frequency in MHz (5 Digits Maximum + Decimal)  
 Line 3: XXY ZZ  
 Week of Year  
 Last Digit of Year  
 Ecliptek Manufacturing Identifier

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EC29	CERAMIC	1.8V	OS1B	01/06