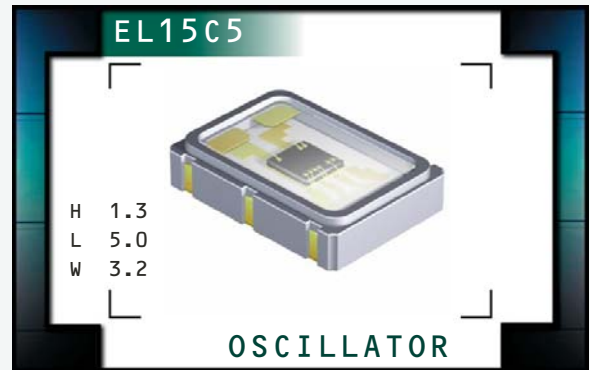


# EL15C5 Series



- Crystal Clock Oscillators
- LVDS Output
- +2.5V Supply Voltage
- Complementary Output
- Tri-State Output Function
- 6 Pad Ceramic SMD Package
- Low Stand-by Current
- RoHS Compliant (Pb-Free)



## ELECTRICAL SPECIFICATIONS

**Nominal Frequency (MHz)** 80MHz, 80.157MHz, 85MHz, 87.125MHz, 90MHz, 100MHz, 106.25MHz, 110MHz, 119MHz, 120MHz, 122.888MHz, 124.4MHz, 125MHz, 127MHz, 128MHz, 131.072MHz, 133MHz, 133.33MHz, 133.333MHz, 135MHz, 137.472MHz, 150MHz, 155.52MHz, 156.25MHz, 159.375MHz, or 161.1328MHz

**Operating Temperature Range** 0°C to +70°C, or -40°C to +85°C

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

**Supply Voltage ( $V_{CC}$ )** 2.5V<sub>DC</sub> ±5%

**Input Current** 63mA Maximum

**Frequency Tolerance / Stability** Inclusive of All Conditions: Calibration Tolerance at 25°C, ±100ppm, ±50ppm, ±25ppm, or  
Frequency Stability over the Operating Temperature Range, ±20ppm Maximum  
Supply Voltage Change, Output Load Change, 1st Year  
Aging at 25°C, Shock, and Vibration

**Output Voltage Logic High ( $V_{OH}$ )** 1.43V<sub>DC</sub> Typical, 1.6V<sub>DC</sub> Maximum

**Output Voltage Logic Low ( $V_{OL}$ )** 1.1V<sub>DC</sub> Typical, 0.9V<sub>DC</sub> Minimum

**Differential Output Voltage ( $V_{OD}$ )** 247mV Minimum, 330mV Typical, 454mV Maximum

**Offset Voltage ( $V_{OS}$ )** 1.125V Minimum, 1.250V Typical, 1.375V Maximum

**Rise Time / Fall Time** 20% to 80% of waveform 300pSec Typical, 700pSec Maximum

**Differential Output Error ( $V_{ODD}$ )** 50mV Maximum

**Duty Cycle** at 50% of waveform or at the crossing point 50 ±5(%)

**Offset Error ( $V_{OS}$ )** 150mV Maximum

**Output Swing ( $V_{OPP}$ )** 250mVdc Minimum

**Load Drive Capability** Between Output and Complementary Output 100 Ohms

**Logic Control / Additional Output** Tri-State and Complementary Output

**Tri-State Input Voltage**  $V_{IH}$  of 70% of  $V_{CC}$  Minimum Enables Outputs  
No Connection Enables Outputs  
 $V_{IL}$  of 30% of  $V_{CC}$  Maximum Disables Outputs: High Impedance

**Standby Current** Without Load 30µA Maximum

**Start Up Time** 10 mSeconds Maximum

**RMS Phase Jitter** FJ = 12kHz to 20MHz 0.4pSec Typical, 1 pSec Maximum

**Typical Phase Noise** Fo=156.250MHz  
-60dBc/Hz at 10Hz Offset  
-95dBc/Hz at 100Hz Offset  
-125dBc/Hz at 1kHz Offset  
-143dBc/Hz at 10kHz Offset  
-145dBc/Hz at 100kHz Offset  
-145dBc/Hz at 1MHz Offset  
-146dBc/Hz at 10MHz Offset

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
OSCILLATOR

SERIES  
EL15C5

PACKAGE  
CERAMIC

VOLTAGE  
2.5V

CLASS  
OS6Y

REV. DATE  
12/09

## PART NUMBERING GUIDE

### EL15C5 E 2 F - 155.520M 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

#### AVAILABLE OPTIONS

Blank=Bulk  
 TR=Tape & Reel

#### FREQUENCY

#### LOGIC CONTROL/ADDITIONAL OUTPUT

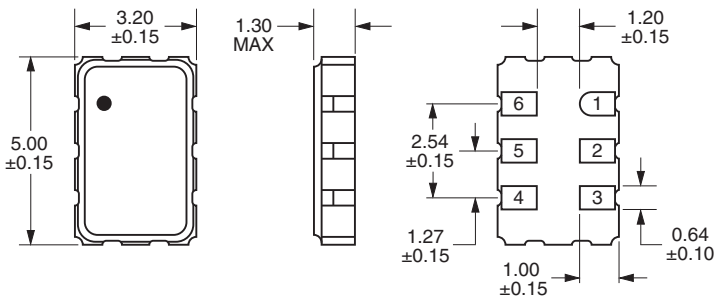
F=Tri-State and Complementary Output

#### DUTY CYCLE

2=50 ±5(%)

#### MECHANICAL DIMENSIONS

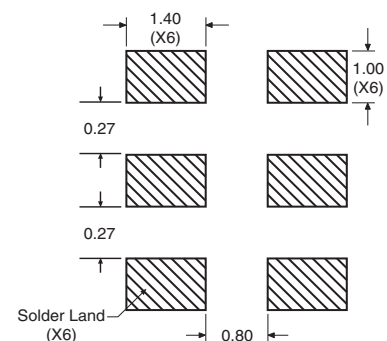
ALL DIMENSIONS IN MILLIMETERS



Pin 1: Tri-State  
 Pin 2: No Connect  
 Pin 3: Case Ground  
 Pin 4: Output  
 Pin 5: Complementary Output  
 Pin 6: Supply Voltage

#### SUGGESTED SOLDER PAD LAYOUT

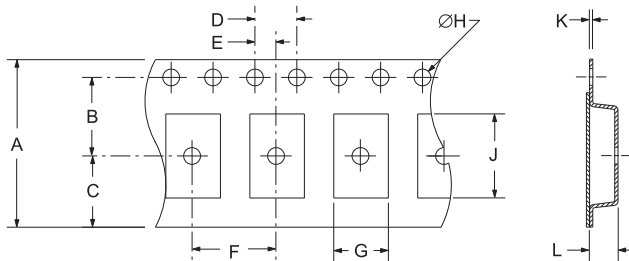
ALL DIMENSIONS IN MILLIMETERS



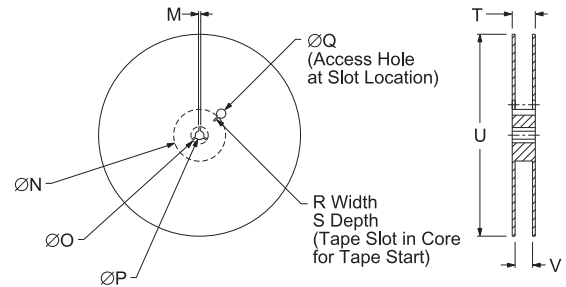
Tolerances=±0.1

#### TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



TAPE	A	B	C	D	E
	16±0.3	7.5±0.1	6.75±0.1	4.0±0.1	2.0±0.1
F	G	H	J	K	L
	8.0±0.1	B0*	1.5+0.1-0.0	A0*	0.3±0.1



REEL	M	N	O	P	Q
	1.5 MIN	50 MIN	20.2 MIN	13.0±0.2	40 MIN
R	S	T	U	V	QTY/REEL
	2.5 MIN	10 MIN	18.4 MAX	180 MAX	12.4+2-0

\*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.XXX — Frequency in MHz (5 Digits Maximum + Decimal)

Line 2: XX Y ZZ  
 — Week of Year  
 — Last Digit of Year  
 — Ecliptek Manufacturing Identifier

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EL15C5	CERAMIC	2.5V	OS6Y	12/09