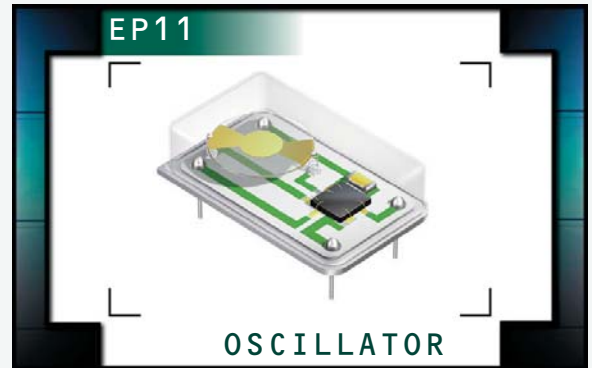


# EP11 Series



- Programmable Crystal Oscillators
- HCMOS/TTL Output
- +5.0V Supply Voltage
- Tri-State and Power Down Options
- Custom Lead Length & Gull Wing Options
- 14 pin DIP Metal Package
- RoHS Compliant (Pb-free)



## ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>		1.000MHz to 125.000MHz
<b>Operating Temperature Range</b>		-20°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>		5.0V <sub>DC</sub> ±10%
<b>Input Current</b>		45mA Maximum (Unloaded)
<b>Disable Current (TS Option)</b>		30mA Maximum (Pin 1=Ground)
<b>Standby Current (PD Option)</b>		50µA Maximum (Pin 1=Ground)
<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 or ±50ppm Maximum
<b>Output Voltage Logic High (V<sub>OH</sub>)</b>	w/TTL Load	2.4V <sub>DC</sub> Minimum I <sub>OH</sub> =-16mA
	w/CMOS Load	V <sub>DD</sub> -0.4V <sub>DC</sub> Minimum I <sub>OH</sub> =-16mA
<b>Output Voltage Logic Low (V<sub>OL</sub>)</b>	w/TTL Load or w/CMOS Load	0.4V <sub>DC</sub> Maximum I <sub>OL</sub> =+16mA
<b>Rise Time / Fall Time</b>	0.8V <sub>DC</sub> to 2.0 V <sub>DC</sub> w/TTL Load or 20% to 80% of Waveform w/CMOS Load	4 nSeconds Maximum
<b>Duty Cycle</b>	at 1.4V <sub>DC</sub> w/TTL Load; at 50% of waveform w/CMOS Load at 1.4V <sub>DC</sub> w/TTL Load (≤27.000MHz only), or 50% of waveform w/CMOS Load (≤50.000MHz only)	50 ±10(%) (Standard) 50 ±5(%) (Optional)
<b>Load Drive Capability / Output Type-CMOS</b>	≤50.000MHz	50pF CMOS Load Maximum
	>50.000MHz	15pF CMOS Load Maximum
<b>Load Drive Capability / Output Type-TTL</b>	≤40.000MHz	10TTL Load Maximum
	>40.000MHz	5TTL Load Maximum
<b>Output Control Function</b>	TS	Tri-State
	PD	Power Down
<b>Output Control Function Input Voltage</b>	V <sub>IH</sub> : No Connection or ≥2.0V <sub>DC</sub> V <sub>IL</sub> : (TS Option) ≤0.8V <sub>DC</sub> V <sub>IL</sub> : (PD Option) ≤0.8V <sub>DC</sub>	Enables Output Disables Output: High Impedence Disables Output: Logic Low
<b>Aging (at 25°C)</b>		±5ppm / year Maximum
<b>Start Up Time</b>		10 mSeconds Maximum
<b>RMS Jitter</b>	<12.000MHz	50pSec Maximum, 13pSec Typical
	≥12.000MHz	13pSec Maximum, 8pSec Typical
<b>Peak to Peak Jitter</b>	<12.000MHz	500pSec Maximum, 90pSec Typical
	≥12.000MHz	100pSec Maximum, 50pSec Typical

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
OSCILLATOR

SERIES  
EP11

PACKAGE  
14 pin DIP

VOLTAGE  
5.0V

CLASS  
OS44

REV. DATE  
12/05

## PART NUMBERING GUIDE

### EP11 00 ET TTS L - 24.000M - CL125

**FREQUENCY TOLERANCE / STABILITY**

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

**OPERATING TEMP. RANGE**

Blank=-20°C to 70°C, ET=-40°C to 85°C

**DUTY CYCLE**

Blank=50 ±10(%), T=50 ±5(%)

**OUTPUT CONTROL FUNCTION**

TS=Tri-State Enable High, PD=Power Down

**AVAILABLE OPTIONS**

Blank=None  
CLXXX=Custom Lead Length  
G=Full Size Gull Wing

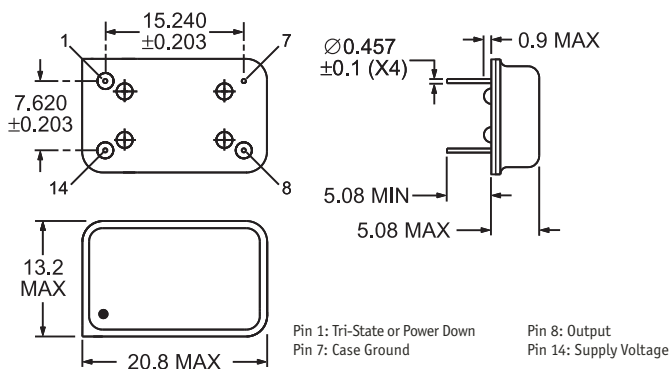
**FREQUENCY**

**OUTPUT TYPE**

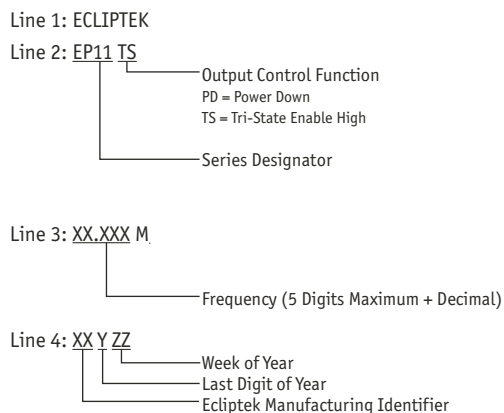
L=TTL, C=CMOS

### NOTES

**MECHANICAL DIMENSIONS**  
ALL DIMENSIONS IN MILLIMETERS



**MARKING SPECIFICATIONS**



Note: Pin 1 shall be designated with a dot

**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
Lead Integrity	MIL-STD-883, Method 2004

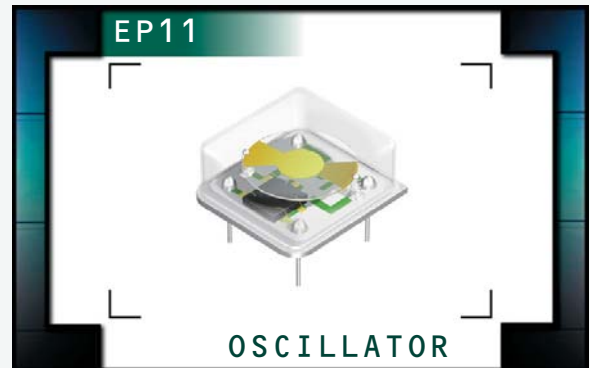
Characteristic	Specification
Solderability	MIL-STD-883, Method 2002
Temperature Cycling	MIL-STD-883, Method 1010
Resistance to Soldering Heat	MIL-STD-883, Method 210
Resistance to Solvents	MIL-STD-883, Method 215

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EP11	14 pin DIP	5.0V	OS44	12/05

# EP11 Series



- Programmable Crystal Oscillators
- HCMOS/TTL Output
- +5.0V Supply Voltage
- Tri-State and Power Down Options
- Custom Lead Length & Gull Wing Options
- 8 pin DIP Metal Package
- RoHS Compliant (Pb-free)



## ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>		1.000MHz to 125.000MHz
<b>Operating Temperature Range</b>		-20°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>		5.0V <sub>DC</sub> ±10%
<b>Input Current</b>		45mA Maximum (Unloaded)
<b>Disable Current (TS Option)</b>		30mA Maximum (Pin 1=Ground)
<b>Standby Current (PD Option)</b>		50µA Maximum (Pin 1=Ground)
<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 or ±50ppm Maximum
<b>Output Voltage Logic High (V<sub>OH</sub>)</b>	w/TTL Load w/CMOS Load	2.4V <sub>DC</sub> Minimum I <sub>OH</sub> =-16mA V <sub>DD</sub> -0.4V <sub>DC</sub> Minimum I <sub>OH</sub> =-16mA
<b>Output Voltage Logic Low (V<sub>OL</sub>)</b>	w/TTL Load or w/HCMOS Load	0.4V <sub>DC</sub> Maximum I <sub>OL</sub> =+16mA
<b>Rise Time / Fall Time</b>	0.8V <sub>DC</sub> to 2.0 V <sub>DC</sub> w/TTL Load or 20% to 80% of Waveform w/CMOS Load	4 nSeconds Maximum
<b>Duty Cycle</b>	at 1.4V <sub>DC</sub> w/TTL Load; at 50% of waveform w/CMOS Load at 1.4V <sub>DC</sub> w/TTL Load (≤27.000MHz only), or 50% of waveform w/CMOS Load (≤50.000MHz only)	50 ±10(%) (Standard) 50 ±5(%) (Optional)
<b>Load Drive Capability / Output Type-HCMOS</b>	≤50.000MHz >50.000MHz	50pF CMOS Load Maximum 15pF CMOS Load Maximum
<b>Load Drive Capability / Output Type-TTL</b>	≤40.000MHz >40.000MHz	10TTL Load Maximum 5TTL Load Maximum
<b>Output Control Function</b>	TS PD	Tri-State Power Down
<b>Output Control Function Input Voltage</b>	V <sub>IH</sub> : No Connection or ≥2.0V <sub>DC</sub> V <sub>IL</sub> : (TS Option) ≤0.8V <sub>DC</sub> V <sub>IL</sub> : (PD Option) ≤0.8V <sub>DC</sub>	Enables Output Disables Output: High Impedence Disables Output: Logic Low
<b>Aging (at 25°C)</b>		±5ppm / year Maximum
<b>Start Up Time</b>		10 mSeconds Maximum
<b>RMS Jitter</b>	<12.000MHz ≥12.000MHz	50pSec Maximum, 13pSec Typical 13pSec Maximum, 8pSec Typical
<b>Peak to Peak Jitter</b>	<12.000MHz ≥12.000MHz	500pSec Maximum, 90pSec Typical 100pSec Maximum, 50pSec Typical

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
OSCILLATOR

SERIES  
EP11

PACKAGE  
8 pin DIP

VOLTAGE  
5.0V

CLASS  
OS45

REV. DATE  
08/05

## PART NUMBERING GUIDE

### EP11 00 HS ET TS L - 24.000M - G TR

**FREQUENCY TOLERANCE / STABILITY**

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

**PACKAGE**

HS=Half Size 8 Pin DIP

**OPERATING TEMP. RANGE**

Blank=-20°C to 70°C, ET=-40°C to 85°C

**DUTY CYCLE**

Blank=50 ±10(%), T=50 ±5(%)

**OUTPUT CONTROL FUNCTION**

TS=Tri-State Enable High, PD=Power Down

**PACKAGING OPTIONS**

Blank=Bulk  
TR=Tape & Reel (only offered with Half Size G and Half Size G2 Options)

**AVAILABLE OPTIONS**

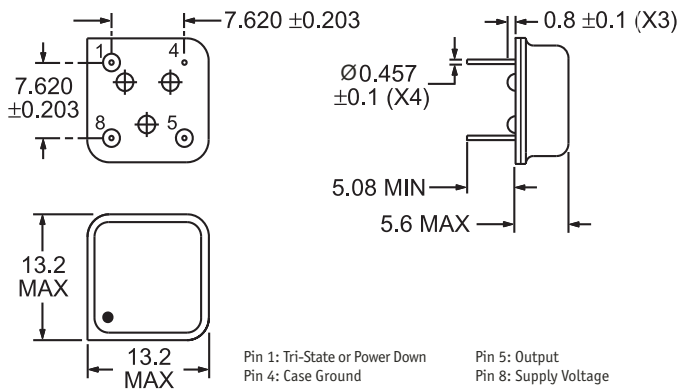
Blank=None  
CLXXX=Custom Lead Length  
G=Half Size Gull Wing  
G2=Half Size Gull Wing

**FREQUENCY**

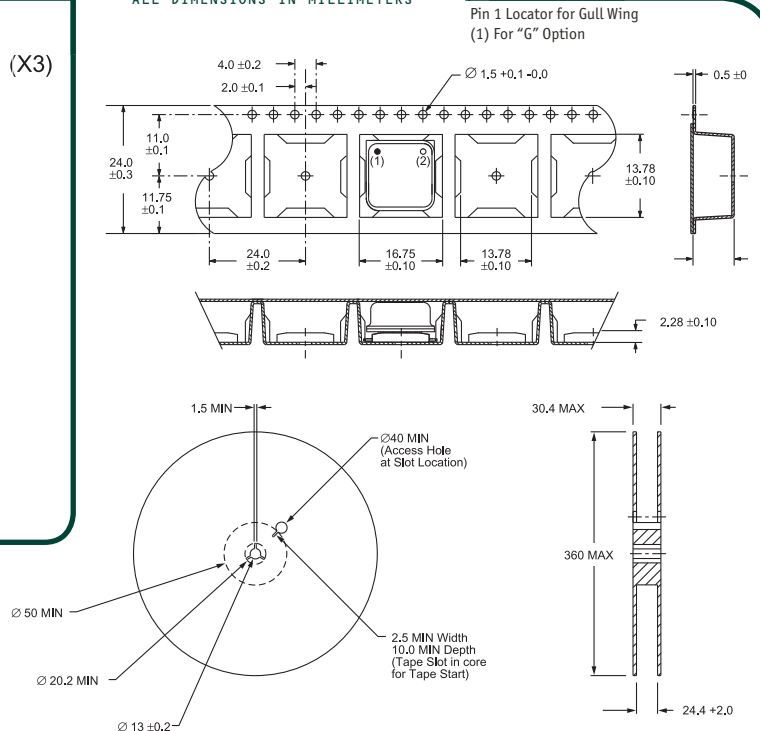
**OUTPUT TYPE**

L=TTL, C=CMOS

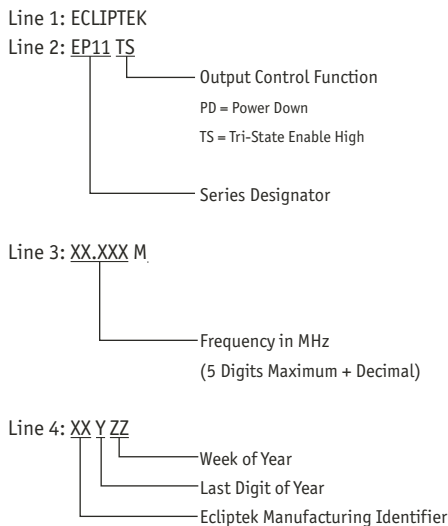
**MECHANICAL DIMENSIONS**  
ALL DIMENSIONS IN MILLIMETERS



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



**MARKING SPECIFICATIONS**



**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
Lead Integrity	MIL-STD-883, Method 2004
Solderability	MIL-STD-883, Method 2002
Temperature Cycling	MIL-STD-883, Method 1010
Resistance to Soldering Heat	MIL-STD-883, Method 210
Resistance to Solvents	MIL-STD-883, Method 215

700 Pieces Per Reel  
Compliant to EIA-481A

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EP11	8 pin DIP	5.0V	OS45	08/05

## Product EOL Announcement

The Product EOL Announcement signifies that a product series has entered the final phase of the Ecliptek Product Life Cycle, and serves as advance notice of product termination per the Ecliptek End of Life (EOL) policy.

Ecliptek Corporation announces End of Life initiation for the following product series with the intent of discontinuing its availability.

EOL Series	Description
EP11 (8 Pin Dip)	Quartz Crystal Clock Oscillators XO (SPXO) HCMOS/TTL (CMOS) 5.0Vdc 8 Pin DIP Metal Thru-Hole
EP11 (14 Pin Dip)	Quartz Crystal Clock Oscillators XO (SPXO) HCMOS/TTL (CMOS) 5.0Vdc 14 Pin DIP Metal Thru-Hole

### EOL Timeline

The last date Ecliptek will accept orders (Stage 2) and the last date orders may be scheduled for shipment (Stage 3) are listed in the table below.

Stage 1 EOL Announce Date	Stage 2 Last Date to Order	Stage 3 Last Date to Ship
1-July-2012	31-December-2012	31-January-2013

### Alternative Products

In order to fulfill your requirements beyond this product's discontinuation, we invite you to evaluate the recommended alternative Ecliptek product series referenced below. Please click on the link to view the data sheet.

Alternative Series	Description
<a href="#">EPH11</a>	Quartz Crystal Clock Oscillators XO (SPXO) HCMOS/TTL (CMOS) 5.0Vdc 8 Pin DIP Metal Thru-Hole
<a href="#">EPF11</a>	Quartz Crystal Clock Oscillators XO (SPXO) HCMOS/TTL (CMOS) 5.0Vdc 14 Pin DIP Metal Thru-Hole

### Automated EOL Notification

Ecliptek offers automated notification of Product EOL Announcements. Place part numbers for which you'd like to receive EOL Notifications into your personalized [Parts List](#) on our website and we'll email you when EOL is announced.

Please do not hesitate to contact us if you have any questions or need further assistance.

Ecliptek Global Customer Support Team  
 (800) 433-1280 x300  
[customersupport@ecliptek.com](mailto:customersupport@ecliptek.com)