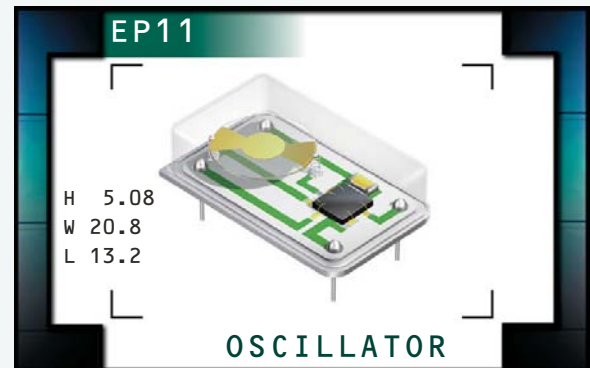


# EP11 Series



- 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 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/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 >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  
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

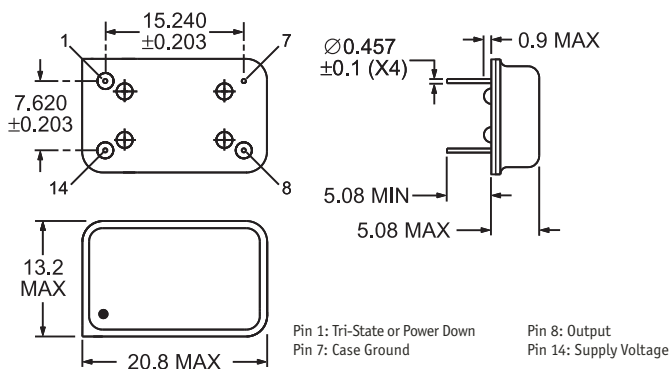
**FREQUENCY**

**OUTPUT TYPE**

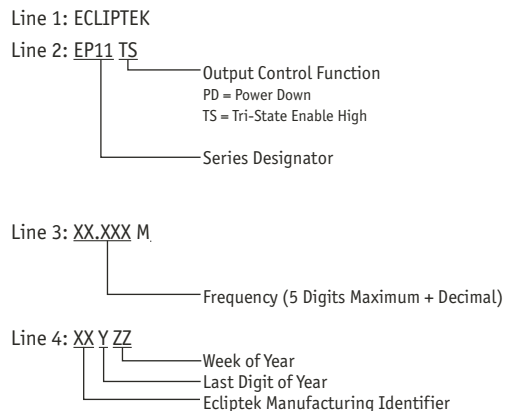
L=TTL, C=CMOS

### 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

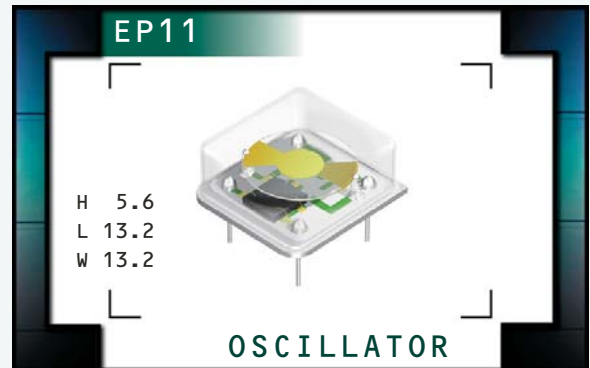
Characteristic	Specification
Solderability	MIL-STD-883, Method 2002
Temperature Cycling	MIL-STD-883, Method 1010
Resistance to Soldering Heat	MIL-STD-883, Method 210
Resistance to Solvents	MIL-STD-883, Method 215

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

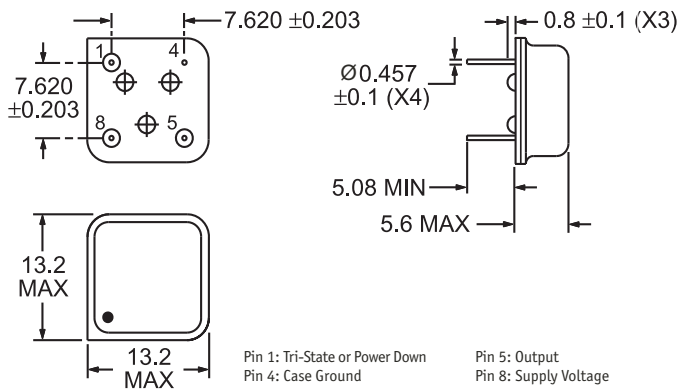
Blank=None  
CLXXX=Custom Lead Length  
G=Half Size Gull Wing  
G2=Half Size Gull Wing

#### FREQUENCY

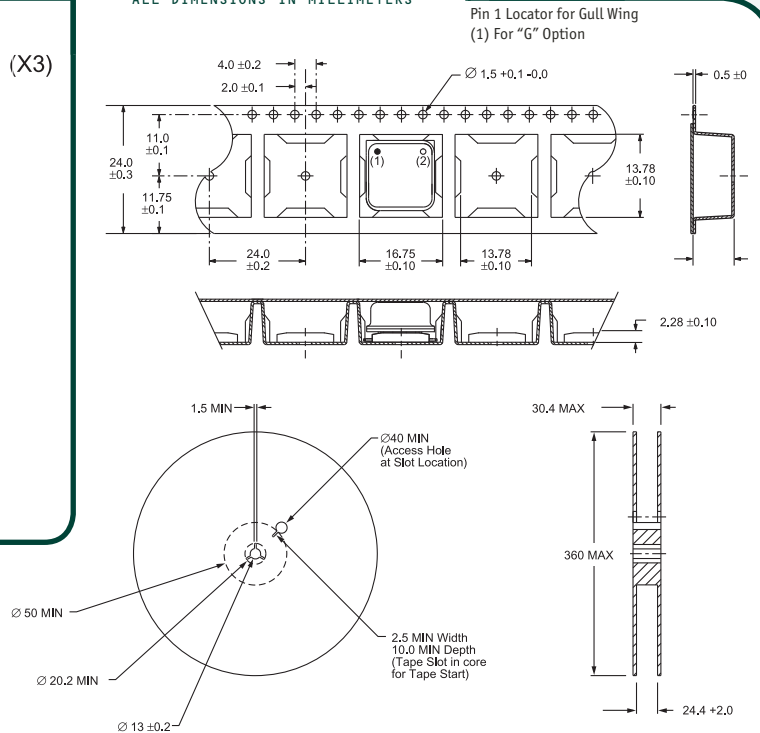
#### OUTPUT TYPE

L=TTL, C=CMOS

#### MECHANICAL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



#### TAPE AND REEL DIMENSIONS ALL DIMENSIONS IN MILLIMETERS



#### MARKING SPECIFICATIONS

Line 1: ECLIPTEK

Line 2: EP11 TS

Output Control Function

PD = Power Down

TS = Tri-State Enable High

Series Designator

Line 3: XX.XXX M

Frequency in MHz

(5 Digits Maximum + Decimal)

Line 4: XX Y ZZ

Week of Year

Last Digit of Year

Ecliptek Manufacturing Identifier

#### ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

##### Characteristic

Fine Leak Test  
Gross Leak Test  
Mechanical Shock  
Vibration  
Lead Integrity  
Solderability  
Temperature Cycling  
Resistance to Soldering Heat  
Resistance to Solvents

##### Specification

MIL-STD-883, Method 1014, Condition A  
MIL-STD-883, Method 1014, Condition C  
MIL-STD-202, Method 213, Condition C  
MIL-STD-883, Method 2007, Condition A  
MIL-STD-883, Method 2004  
MIL-STD-883, Method 2002  
MIL-STD-883, Method 1010  
MIL-STD-883, Method 210  
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