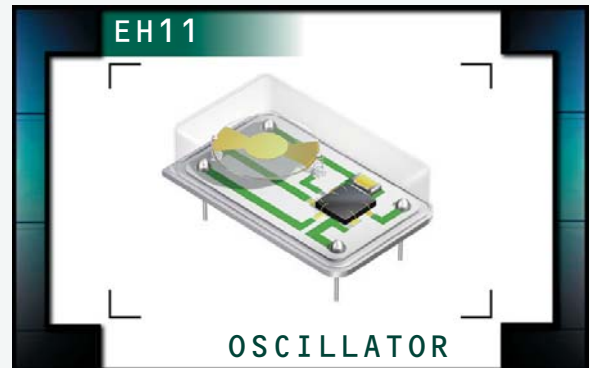


# EH11 Series



- Crystal Clock Oscillators
- CMOS/TTL Output
- +5.0V Supply Voltage
- Tri-State Output Function
- Custom Lead Length & Gull Wing Options
- 14 pin DIP Metal Package
- RoHS Compliant (Pb-free)



## ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>	1.000MHz to 155.520MHz		
<b>Operating Temperature Range</b>	0°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>	50mA Maximum (Unloaded)		
<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, ±50ppm, ±25ppm, or ±20ppm 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	0.4V <sub>DC</sub> Maximum	I <sub>OL</sub> = +16mA
	w/CMOS Load	0.5V <sub>DC</sub> Maximum	I <sub>OL</sub> = +16mA
<b>Duty Cycle (V<sub>DD</sub>=5.0V<sub>DC</sub>)</b>	at 1.4V <sub>DC</sub> w/TTL Load; at 50% of waveform w/CMOS Load (≤70.000MHz)	50 ±10(%) (Standard)	
	at 50% of waveform w/ TTL Load or w/CMOS Load (>70.000MHz)	50 ±10(%) (Standard)	
	at 50% of waveform w/TTL Load or w/CMOS Load	50 ±5(%) (Optional)	
<b>Rise Time / Fall Time</b>	0.8V <sub>DC</sub> to 2.0V <sub>DC</sub> w/TTL Load or 20% to 80% of Waveform w/CMOS Load (≤70.000MHz)	6 nSeconds Maximum	
	0.8V <sub>DC</sub> to 2.0V <sub>DC</sub> w/TTL Load or 20% to 80% of Waveform w/CMOS Load (>70.000MHz)	4 nSeconds Maximum	
<b>Tri-State Input Voltage</b>	V <sub>IH</sub> :No Connection	Enables Output	
	V <sub>IH</sub> :≥2.2V <sub>DC</sub>	Enables Output	
	V <sub>IL</sub> :≤0.8V <sub>DC</sub>	Disables Output: High Impedance	
<b>Aging (at 25°C)</b>	±5ppm / year Maximum		
<b>Start Up Time</b>	10 mSeconds Maximum		
<b>Load Drive Capability</b>	≤70.000MHz	10TTL Load or 50pF CMOS Load Maximum	
	>70.000MHz	5TTL Load or 15pF CMOS Load Maximum	
<b>Period Jitter: Absolute</b>	±250pSec Maximum, ±100pSec Typical		
<b>Period Jitter: One Sigma</b>	±50pSec Maximum, ±30pSec Typical		

MANUFACTURER  
ECLIPTEK CORP.

CATEGORY  
OSCILLATOR

SERIES  
EH11

PACKAGE  
14 Pin DIP

VOLTAGE  
5.0V

CLASS  
OS44

REV. DATE  
12/05

## PART NUMBERING GUIDE

**EH11 00 ET TS - 70.000M - G**

**FREQUENCY TOLERANCE / STABILITY**

00=±100ppm Max., 45=±50ppm Max.  
25=±25ppm Max., 20=±20ppm Max.

**OPERATING TEMP. RANGE**

Blank=0°C to 70°C, ET=-40°C to 85°C

**DUTY CYCLE**

Blank=50 ±10(%), T=50 ±5(%)

**AVAILABLE OPTIONS**

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

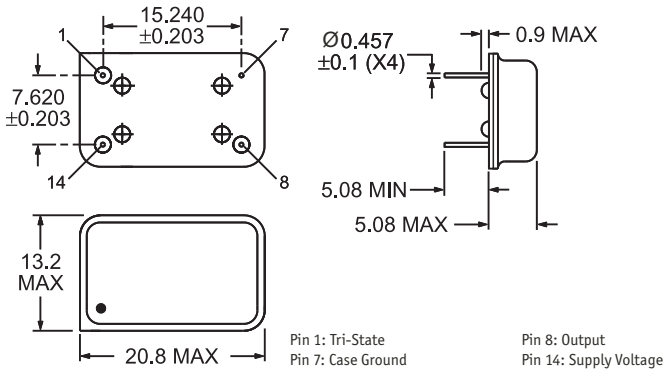
**FREQUENCY**

**OUTPUT CONTROL FUNCTION**

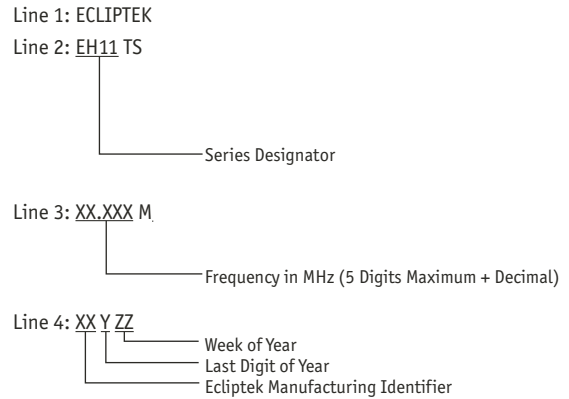
TS=Tri-State Enable High

### 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

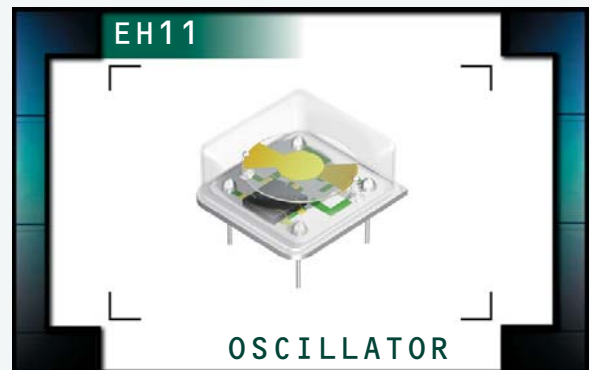
Characteristic	Specification
Solderability	MIL-STD-883, Method 2002
Temperature Cycling	MIL-STD-883, Method 1010
Resistance to Soldering Heat	MIL-STD-883, Method 210
Resistance to Solvents	MIL-STD-883, Method 215

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EH11	14 Pin DIP	5.0V	OS44	12/05

# EH11 Series



- Crystal Clock Oscillators
- CMOS/TTL Output
- +5.0V Supply Voltage
- Tri-State Output Function
- Custom Lead Length & Gull Wing Options
- 8 pin DIP Metal Package
- RoHS Compliant (Pb-free)



## ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>	1.000MHz to 155.520MHz		
<b>Operating Temperature Range</b>	0°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>	50mA Maximum (Unloaded)		
<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, ±50ppm, ±25ppm, or ±20ppm 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	0.4V <sub>DC</sub> Maximum	I <sub>OL</sub> = +16mA
	w/CMOS Load	0.5V <sub>DC</sub> Maximum	I <sub>OL</sub> = +16mA
<b>Duty Cycle (V<sub>DD</sub>=5.0V<sub>DC</sub>)</b>	at 1.4V <sub>DC</sub> w/TTL Load; at 50% of waveform w/CMOS Load (≤70.000MHz)	50 ±10(%) (Standard)	
	at 50% of waveform w/ TTL Load or w/CMOS Load (>70.000MHz)	50 ±10(%) (Standard)	
	at 50% of waveform w/TTL Load or w/CMOS Load	50 ±5(%) (Optional)	
<b>Rise Time / Fall Time</b>	0.8V <sub>DC</sub> to 2.0V <sub>DC</sub> w/TTL Load or 20% to 80% of Waveform w/CMOS Load (≤70.000MHz)	6 nSeconds Maximum	
	0.8V <sub>DC</sub> to 2.0V <sub>DC</sub> w/TTL Load or 20% to 80% of Waveform w/CMOS Load (>70.000MHz)	4 nSeconds Maximum	
<b>Tri-State Input Voltage</b>	V <sub>IH</sub> :No Connection	Enables Output	
	V <sub>IH</sub> :≥2.2V <sub>DC</sub>	Enables Output	
	V <sub>IL</sub> :≤0.8V <sub>DC</sub>	Disables Output: High Impedance	
<b>Aging (at 25°C)</b>	±5ppm / year Maximum		
<b>Start Up Time</b>	10 mSeconds Maximum		
<b>Load Drive Capability</b>	≤70.000MHz	10TTL Load or 50pF CMOS Load Maximum	
	>70.000MHz	5TTL Load or 15pF CMOS Load Maximum	
<b>Period Jitter: Absolute</b>	±250pSec Maximum, ±100pSec Typical		
<b>Period Jitter: One Sigma</b>	±50pSec Maximum, ±30pSec Typical		

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES EH11	PACKAGE 8 Pin DIP	VOLTAGE 5.0V	CLASS OS45	REV. DATE 08/05
--------------------------------	------------------------	----------------	----------------------	-----------------	---------------	--------------------

## PART NUMBERING GUIDE

### EH11 00 HS ET TS - 70.000M - G TR

**FREQUENCY TOLERANCE / STABILITY**

00=±100ppm Max., 45=±50ppm Max.  
25=±25ppm Max., 20=±20ppm Max.

**PACKAGE**

HS=Half Size 8 Pin DIP

**OPERATING TEMP. RANGE**

Blank=0°C to 70°C, ET=-40°C to 85°C

**DUTY CYCLE**

Blank=50 ±10(%), T=50 ±5(%)

**PACKAGING OPTIONS**

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

**AVAILABLE OPTIONS**

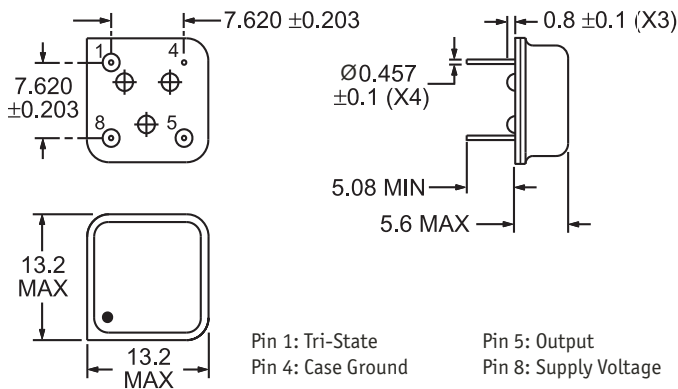
Blank=None (Standard)  
CLXXX=Custom Lead Length  
G=Half Size Gull Wing  
G2=Half Size Gull Wing

**FREQUENCY**

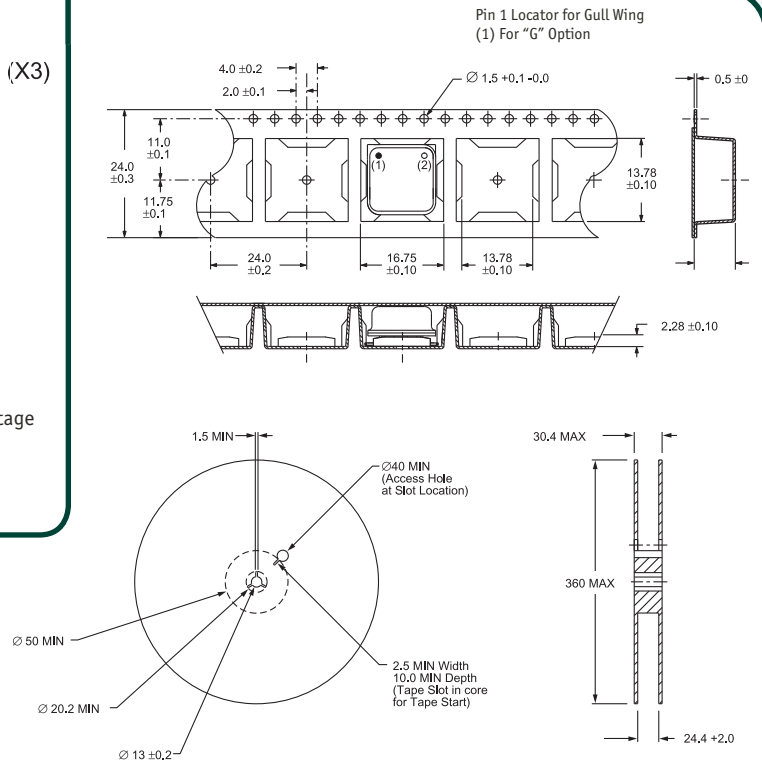
**OUTPUT CONTROL FUNCTION**

TS=Tri-State Enable High

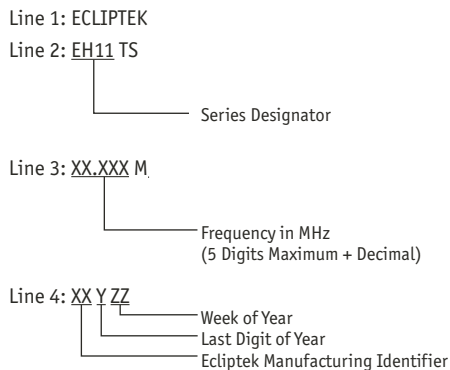
**MECHANICAL DIMENSIONS**  
ALL DIMENSIONS IN MILLIMETERS



**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

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EH11	8 pin DIP	5.0V	OS45	08/05