

## Marketing Bulletin

**DATE:** April 7, 2003  
**TO:** Affected Customers  
**FROM:** Mark Stoner  
**RE:** Product Termination

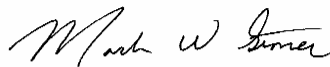
To all concerned parties,

This bulletin is to notify all customers of the termination of the following Ecliptek series effective April 7<sup>th</sup>, 2003:

<b>Series</b>	<b>Description</b>	<b>Recommended Replacement</b>
E11F4	5 pin DIP PECL Oscillator, 5V	E11F1
E13F4	5 pin DIP PECL Oscillator, 3.3V	E13F1
E31F4	5 pin DIP PECL VCXO, 5V	E31F1
E32F4	5 pin DIP PECL VCXO, 3.3V	E32F1

Because of the circumstances surrounding this termination, there will be no end-of-life policy exercised. The series will be terminated with no purchasing or lifetime buy window available. All of us at Ecliptek Corporation apologize for any inconvenience this may have caused and can assure you we are taking measures to insure this will not happen again in the future.

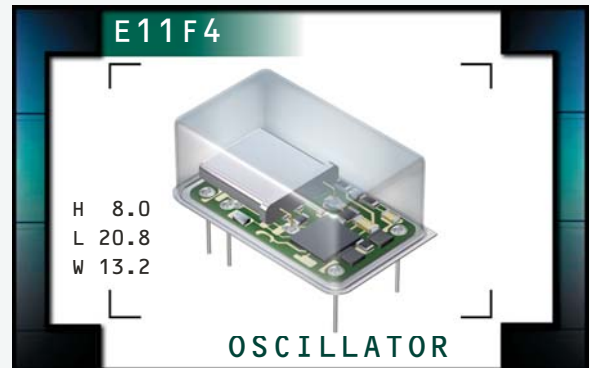
Best Regards,



Mark W. Stoner  
Director of Marketing  
Ecliptek Corporation

# E11F4 Series

- PECL Output Oscillators
- 5.0V supply voltage
- 14 pin DIP package (5 pin)
- Stability to 20ppm
- Output Enable/Disable available
- Complementary Output available



## NOTES

OBSOLETE

### ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>		19.440MHz to 250.000MHz
<b>Operating Temperature Range</b>		0°C to 70°C
	Available at Frequencies $\leq$ 212.500MHz	-40°C to 85°C
<b>Storage Temperature Range</b>		-55°C to 125°C
<b>Supply Voltage (<math>V_{CC}</math>)</b>		5.0V <sub>DC</sub> $\pm$ 5%
<b>Input Current</b>		100mA Maximum
<b>Logic Type</b>		100KH
<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, Aging, Shock, and Vibration	$\pm$ 100ppm, $\pm$ 50ppm, $\pm$ 25ppm, or $\pm$ 20ppm Maximum
<b>Output Voltage Logic High (<math>V_{OH}</math>)</b>		$V_{CC}$ -1.025V <sub>DC</sub> Minimum
<b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>		$V_{CC}$ -1.620V <sub>DC</sub> Maximum
<b>Rise Time / Fall Time</b>	20% to 80% of waveform	2 nSeconds Maximum
<b>Duty Cycle</b>	at 50% of waveform	50 $\pm$ 10(%) 50 $\pm$ 5(%)
<b>Load Drive Capability</b>		50 Ohms into $V_{CC}$ -2.0V <sub>DC</sub>
<b>Logic Control / Additional Output</b>		No Connect, Enable/Disable, Complementary Output, or Complementary Output and Enable/Disable
<b>Enable/Disable Input Voltage</b>	$V_{IL}$ of $V_{CC}$ -1.475V <sub>DC</sub> Maximum No Connection $V_{IH}$ of $V_{CC}$ -1.165V <sub>DC</sub> Minimum	Enables Output Enables Output Disables Output: Logic Low Disables Complementary Output: Logic High
<b>Start Up Time</b>		10 mSeconds Maximum
<b>RMS Phase Jitter</b>	FJ = 12kHz to 20MHz	1 pSec Maximum

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	E11F4	14 pin DIP	5.0V	OS86	01/03

## PART NUMBERING GUIDE

**E11F4 F 2 C - 155.520M**

**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

**DUTY CYCLE**

1=50% ±10%, 2=50% ±5%

**FREQUENCY**

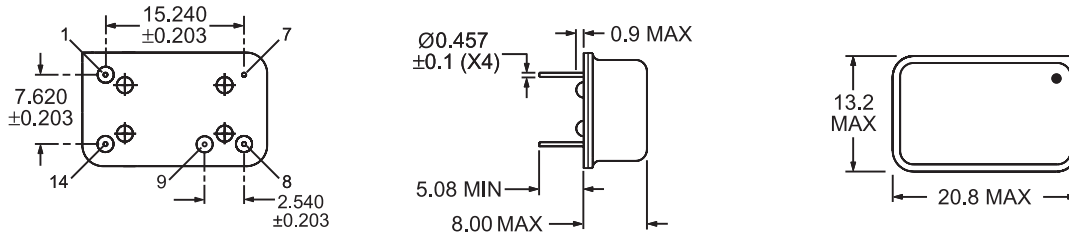
**LOGIC CONTROL/ADDITIONAL OUTPUT**

A=No Connect  
 B=Enable/Disable  
 C=Complementary Output  
 D=Complementary Output and Enable/Disable

**NOTES**

OBSOLETE

**MECHANICAL DIMENSIONS**  
ALL DIMENSIONS IN MILLIMETERS



Pin 1: Enable/Disable or No Connect    Pin 9: Complementary Output or No Connect  
 Pin 7: Case Ground    Pin 14: Supply Voltage  
 Pin 8: Output

**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-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)

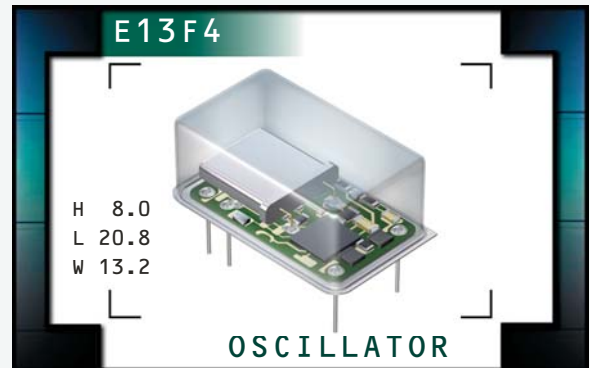
Line 3: XX YY ZZ  
 Week of Year  
 Last Digit of Year  
 Ecliptek Manufacturing Identifier

Note: Pin 1 shall be designated with a dot

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES E11F4	PACKAGE 14 pin DIP	VOLTAGE 5.0V	CLASS OS86	REV. DATE 01/03
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# E13F4 Series

- LVPECL Output Oscillators
- 3.3V supply voltage
- 14 pin DIP package (5 pin)
- Stability to 20ppm
- Output Enable/Disable available
- Complementary Output available



NOTES

OBSOLETE

## ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>		19.440MHz to 250.000MHz
<b>Operating Temperature Range</b>		0°C to 70°C
	Available at Frequencies $\leq$ 212.500MHz	-40°C to 85°C
<b>Storage Temperature Range</b>		-55°C to 125°C
<b>Supply Voltage (<math>V_{CC}</math>)</b>		3.3V <sub>DC</sub> $\pm$ 5%
<b>Input Current</b>		75mA Maximum
<b>Logic Type</b>		100KH
<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, Aging, Shock, and Vibration	$\pm$ 100ppm, $\pm$ 50ppm, $\pm$ 25ppm, or $\pm$ 20ppm Maximum
<b>Output Voltage Logic High (<math>V_{OH}</math>)</b>		$V_{CC}$ -1.025V <sub>DC</sub> Minimum
<b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>		$V_{CC}$ -1.620V <sub>DC</sub> Maximum
<b>Rise Time / Fall Time</b>	20% to 80% of waveform	2 nSeconds Maximum
<b>Duty Cycle</b>	at 50% of waveform	50 $\pm$ 10(%) 50 $\pm$ 5(%)
<b>Load Drive Capability</b>		50 Ohms into $V_{CC}$ -2.0V <sub>DC</sub>
<b>Logic Control / Additional Output</b>		No Connect, Enable/Disable, Complementary Output, or Complementary Output and Enable/Disable
<b>Enable/Disable Input Voltage</b>	$V_{IL}$ of $V_{CC}$ -1.475V <sub>DC</sub> Maximum No Connection $V_{IH}$ of $V_{CC}$ -1.165V <sub>DC</sub> Minimum	Enables Output Enables Output Disables Output: Logic Low Disables Complementary Output: Logic High
<b>Start Up Time</b>		10 mSeconds Maximum
<b>RMS Phase Jitter</b>	FJ = 12kHz to 20MHz	1 pSec Maximum

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES E13F4	PACKAGE 14 pin DIP	VOLTAGE 3.3V	CLASS OS85	REV. DATE 01/03
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## PART NUMBERING GUIDE

### E13F4 F 2 C - 155.520M

**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

**DUTY CYCLE**

1=50% ±10%, 2=50% ±5%

**FREQUENCY**

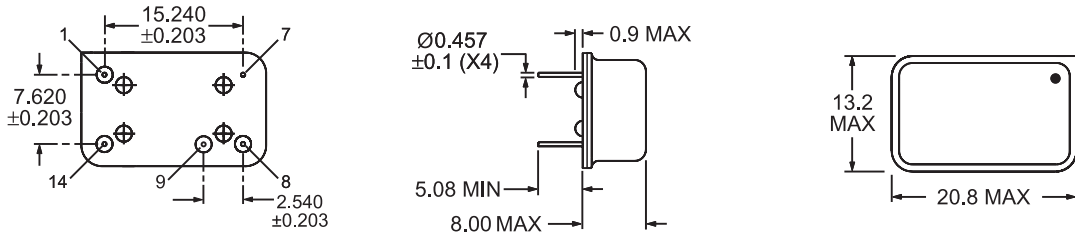
**LOGIC CONTROL/ADDITIONAL OUTPUT**

A=No Connect  
 B=Enable/Disable  
 C=Complementary Output  
 D=Complementary Output and Enable/Disable

### NOTES

OBSOLETE

**MECHANICAL DIMENSIONS**  
ALL DIMENSIONS IN MILLIMETERS



Pin 1: Enable/Disable or No Connect    Pin 9: Complementary Output or No Connect  
 Pin 7: Case Ground    Pin 14: Supply Voltage  
 Pin 8: Output

**MARKING SPECIFICATIONS**

Line 1: ECLIPTEK

Line 2: XX.XXX M  
 Frequency in MHz  
 (5 Digits Maximum + Decimal)

Line 3: XXYZZ  
 Week of Year  
 Last Digit of Year  
 Ecliptek Manufacturing Identifier

Note: Pin 1 shall be designated with a dot

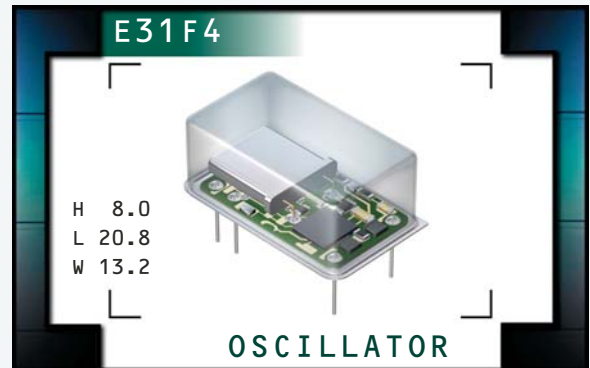
**ENVIRONMENTAL/MECHANICAL SPECIFICATIONS**

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
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

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES E13F4	PACKAGE 14 pin DIP	VOLTAGE 3.3V	CLASS OS85	REV. DATE 01/03
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# E31F4 Series

- PECL Output VCXO
- 5.0V supply voltage
- 14 pin DIP package (5 pin)
- Stability to 20ppm
- Complementary Output available
- Custom lead length



## NOTES

OBSOLETE

### ELECTRICAL SPECIFICATIONS

Frequency Range		19.440MHz to 212.500MHz
Operating Temperature Range		0°C to 70°C or -40°C to 85°C
Storage Temperature Range		-55°C to 125°C
Supply Voltage ( $V_{CC}$ )		5.0V <sub>DC</sub> ±5%
Input Current		100mA Maximum
Logic Type		100KH
Frequency Tolerance / Stability	Inclusive of Operating Temp Range, Supply Voltage, Load, and Aging @25°C over 10 years	±50ppm, ±25ppm, or ±20ppm Maximum
Output Voltage Logic High ( $V_{OH}$ )		$V_{CC}$ -1.025V <sub>DC</sub> Minimum
Output Voltage Logic Low ( $V_{OL}$ )		$V_{CC}$ -1.620V <sub>DC</sub> Maximum
Rise Time / Fall Time	20% to 80% of waveform	2 nSeconds Maximum
Duty Cycle	at 50% of waveform	50 ±10(%) 50 ±5(%)
Load Drive Capability		50 Ohms into $V_{CC}$ -2.0V <sub>DC</sub>
Additional Output		Complementary Output or No Connect
Start Up Time		10 mSeconds Maximum
RMS Phase Jitter	FJ = 12kHz to 20MHz	1 pSec Maximum
Absolute Pull Range (APR)	Inclusive of Operating Temp Range, Supply Voltage, Load, and Aging @25°C over 10 years	±50ppm Minimum
Linearity		20%, 15%, or 10% Maximum
Control Voltage ( $V_C$ ): Test Conditions for APR		2.5V <sub>DC</sub> ±2.0V <sub>DC</sub>
Control Voltage Range ( $V_{CR}$ )		0.0V <sub>DC</sub> to $V_{CC}$
Center Control Voltage		2.5V <sub>DC</sub>
Transfer Function		Positive Transfer Characteristic
Input Impedance		50kOhms Typical
Modulation Bandwidth	at -3dB with Control Voltage of +2.5V <sub>DC</sub>	10kHz Minimum

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	E31F4	14 pin DIP	5.0V	OS88	01/03

## PART NUMBERING GUIDE

**E31F4 F 3 A 2 C - 155.520M - CL125**

**FREQUENCY TOLERANCE & STABILITY/  
OPERATING TEMPERATURE RANGE**

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  
 H=±50ppm Maximum over -40°C to +85°C

**APR**

3=±50ppm Minimum

**LINEARITY**

A=20%  
 B=15%  
 C=10%

**AVAILABLE OPTIONS**

Blank=None (Standard)  
 CLXX=Custom Lead Length (See Page 153)  
 G=Full Size Gull Wing (See Page 152)

**FREQUENCY**

**ADDITIONAL OUTPUT**

A=No Connect  
 C=Complementary Output

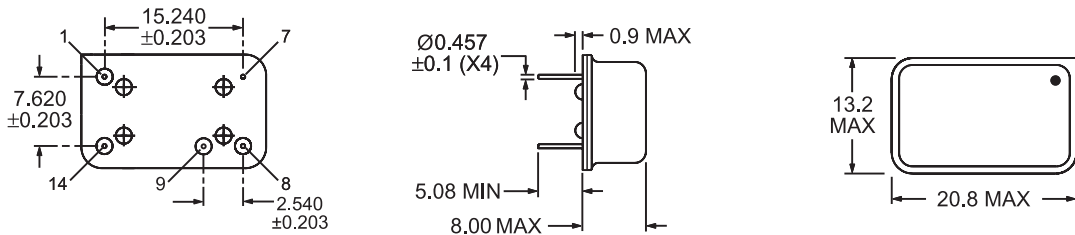
**DUTY CYCLE**

1=50 ±10(%)  
 2=50 ±5(%)

NOTES

OBSOLETE

**MECHANICAL DIMENSIONS**  
ALL DIMENSIONS IN MILLIMETERS



Pin 1: Voltage Control  
 Pin 7: Case Ground  
 Pin 8: Output

Pin 9: Complementary Output or No Connect  
 Pin 14: Supply Voltage

**MARKING SPECIFICATIONS**

Line 1: ECLIPTEK

Line 2: XX.XXX M

Frequency in MHz  
 (5 Digits Maximum + Decimal)

Line 3: XX Y ZZ

Week of Year  
 Last Digit of Year  
 Ecliptek Manufacturing Identifier

Note: Pin 1 shall be designated with a dot

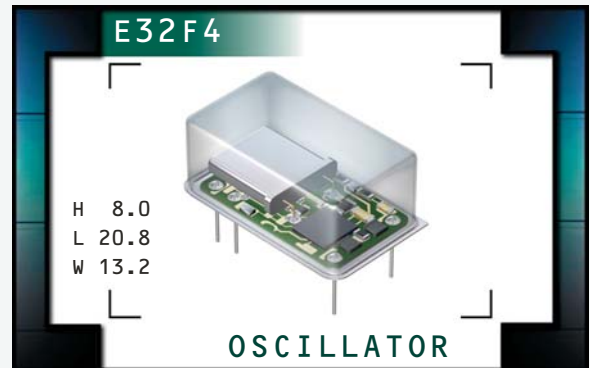
**ENVIRONMENTAL/MECHANICAL SPECIFICATIONS**

Characteristic	Specification
Seal Integrity	Bubble test in Perfluorocarbon at +125°C ±5°C for 60 seconds minimum.
Solderability	Sn63 Solder dip at +230°C ±5°C for 5 seconds/95% coverage.
Marking Permanency	10 Strokes with brush after 1 minute soak in solvent, 3 times.
Shock	Random drop on hard wooden plate 3 times from a height of 20cm.
Vibration	Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X, Y and Z) for a total of 6 hours.

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES E31F4	PACKAGE 14 pin DIP	VOLTAGE 5.0V	CLASS OS88	REV. DATE 01/03
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# E32F4 Series

- LVPECL Output VCXO
- 3.3V supply voltage
- 14 pin DIP package (5 pin)
- Stability to 20ppm
- Complementary Output available
- Custom lead length



OBSOLETE

## ELECTRICAL SPECIFICATIONS

<b>Frequency Range</b>		19.440MHz to 212.500MHz
<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>CC</sub>)</b>		3.3V <sub>DC</sub> ±5%
<b>Input Current</b>		75mA Maximum
<b>Logic Type</b>		100KH
<b>Frequency Tolerance / Stability</b>	Inclusive of Operating Temp Range, Supply Voltage, Load, and Aging @25°C over 10 years	±50ppm, ±25ppm, or ±20ppm Maximum
<b>Output Voltage Logic High (V<sub>OH</sub>)</b>		V <sub>CC</sub> -1.025V <sub>DC</sub> Minimum
<b>Output Voltage Logic Low (V<sub>OL</sub>)</b>		V <sub>CC</sub> -1.620V <sub>DC</sub> Maximum
<b>Rise Time / Fall Time</b>	20% to 80% of waveform	2 nSeconds Maximum
<b>Duty Cycle</b>	at 50% of waveform	50 ±10(%) 50 ±5(%)
<b>Load Drive Capability</b>		50 Ohms into V <sub>CC</sub> -2.0V <sub>DC</sub>
<b>Additional Output</b>		Complementary Output or No Connect
<b>Start Up Time</b>		10 mSeconds Maximum
<b>RMS Phase Jitter</b>	FJ = 12kHz to 20MHz	1 pSec Maximum
<b>Absolute Pull Range (APR)</b>	Inclusive of Operating Temp Range, Supply Voltage, Load, and Aging @25°C over 10 years	±50ppm Minimum
<b>Linearity</b>		20%, 15%, or 10% Maximum
<b>Control Voltage (V<sub>C</sub>): Test Conditions for APR</b>		1.65V <sub>DC</sub> ±1.35V <sub>DC</sub>
<b>Control Voltage Range (V<sub>CR</sub>)</b>		0.0V <sub>DC</sub> to V <sub>CC</sub>
<b>Center Control Voltage</b>		1.65V <sub>DC</sub>
<b>Transfer Function</b>		Positive Transfer Characteristic
<b>Input Impedance</b>		50kOhms Typical
<b>Modulation Bandwidth</b>	at -3dB with Control Voltage of +1.65V <sub>DC</sub>	10kHz Minimum

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES E32F4	PACKAGE 14 pin DIP	VOLTAGE 3.3V	CLASS OS87	REV. DATE 01/03
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## PART NUMBERING GUIDE

**E32F4 F 3 A 2 C - 155.520M - CL125**

**FREQUENCY TOLERANCE & STABILITY/  
OPERATING TEMPERATURE RANGE**

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  
 H=±50ppm Maximum over -40°C to +85°C

**APR**

3=±50ppm Minimum

**LINEARITY**

A=20%  
 B=15%  
 C=10%

**AVAILABLE OPTIONS**

Blank=None (Standard)  
 CLXX=Custom Lead Length (See Page 153)  
 G=Full Size Gull Wing (See Page 152)

**FREQUENCY**

**ADDITIONAL OUTPUT**

A=No Connect  
 C=Complementary Output

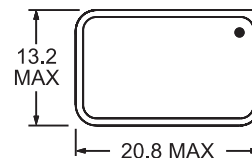
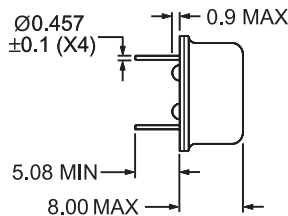
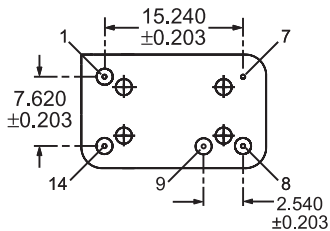
**DUTY CYCLE**

1=50 ±10(%)  
 2=50 ±5(%)

NOTES

OBSOLETE

**MECHANICAL DIMENSIONS**  
ALL DIMENSIONS IN MILLIMETERS



Pin 1: Voltage Control  
 Pin 7: Case Ground  
 Pin 8: Output

Pin 9: Complementary Output or No Connect  
 Pin 14: Supply Voltage

**MARKING SPECIFICATIONS**

Line 1: ECLIPTEK

Line 2: XX.XXX M

Frequency in MHz  
 (5 Digits Maximum + Decimal)

Line 3: XX Y ZZ

Week of Year  
 Last Digit of Year  
 Ecliptek Manufacturing Identifier

Note: Pin 1 shall be designated with a dot

**ENVIRONMENTAL/MECHANICAL SPECIFICATIONS**

Characteristic	Specification
Seal Integrity	Bubble test in Perfluorocarbon at +125°C ±5°C for 60 seconds minimum.
Solderability	Sn63 Solder dip at +230°C ±5°C for 5 seconds/95% coverage.
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Vibration	Frequency with an amplitude of 1.5mm sweeping between 10Hz to 55Hz within 1 minute (approximately) for 2 hours minimum on each axis (X, Y and Z) for a total of 6 hours.

MANUFACTURER ECLIPTEK CORP.	CATEGORY OSCILLATOR	SERIES E32F4	PACKAGE 14 pin DIP	VOLTAGE 3.3V	CLASS OS87	REV. DATE 01/03
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