

## Marketing Bulletin

**DATE:** August 25, 2005  
**TO:** All Sales Personnel  
**FROM:** Mark Stoner  
**RE:** Product Termination

To all concerned parties,

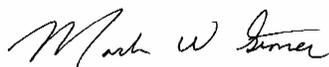
This bulletin is to notify all customers of the discontinuation of the following Ecliptek series effective August 25<sup>th</sup>, 2005:

| <b>Series</b> | <b>Description</b>         | <b>Recommended Replacement</b> |
|---------------|----------------------------|--------------------------------|
| E31J2         | 5V 6 pad SMD LVPECL VCXO   | E32D1                          |
| E32J2         | 3.3V 6 pad SMD LVPECL VCXO | E32D1                          |

In compliance with our End of Life (EOL) policy, this will serve as advanced notice of product termination. New orders will not be accepted after November 25<sup>th</sup>, 2005, with delivery to conclude by February 25<sup>th</sup> 2006.

If there are any questions pertaining to this bulletin, please feel free to contact me. Thank you again for your cooperation.

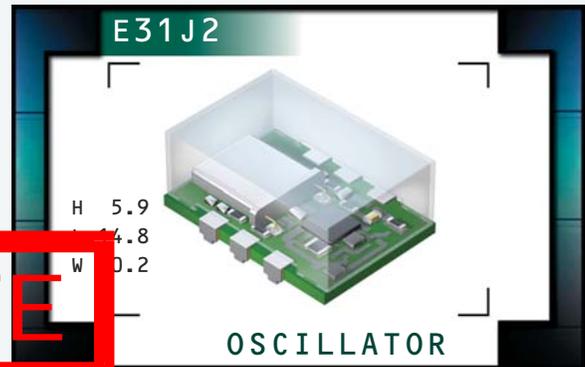
Best Regards,



Mark W. Stoner  
Director of Marketing  
Ecliptek Corporation

# E31J2 Series

- PECL Output VCXO
- 5.0V supply voltage
- 6 pad PCB SMD package with J-leads
- Stability to 20ppm
- Output Enable/Disable available
- Complementary Output available
- Available on Tape and Reel



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 <sub>CC</sub> )                          | 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 <sub>OH</sub> )               | V <sub>CC</sub> -1.025V <sub>DC</sub> Minimum                                                                                                         |                                                                                                             |
| Output Voltage Logic Low (V <sub>OL</sub> )                | V <sub>CC</sub> -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(%)<br>50 ±5(%)                                                                                       |
| Load Drive Capability                                      | 50 Ohms into V <sub>CC</sub> -2.0V <sub>DC</sub>                                                                                                      |                                                                                                             |
| Additional Output / Logic Control                          | No Connect and Single Output<br>Enable/Disable and Single Output<br>No Connect and Complementary Output or<br>Enable/Disable and Complementary Output |                                                                                                             |
| Enable/Disable Input Voltage                               | V <sub>IL</sub> of V <sub>CC</sub> -1.475V <sub>DC</sub> Maximum<br>No Connection<br>V <sub>IH</sub> of V <sub>CC</sub> -1.165V <sub>DC</sub> Minimum | Enables Output<br>Enables Output<br>Disables Output: Logic Low<br>Disables Complementary Output: Logic High |
| 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 <sub>C</sub> ): Test Conditions for APR | 2.5V <sub>DC</sub> ±2.0V <sub>DC</sub>                                                                                                                |                                                                                                             |
| Control Voltage Range (V <sub>CR</sub> )                   | 0.0V <sub>DC</sub> to V <sub>CC</sub>                                                                                                                 |                                                                                                             |
| 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<br>ECLIPTEK CORP. | CATEGORY<br>OSCILLATOR | SERIES<br>E31J2 | PACKAGE<br>6-PCB-J | VOLTAGE<br>5.0V | CLASS<br>0574 | REV. DATE<br>01/03 |
|--------------------------------|------------------------|-----------------|--------------------|-----------------|---------------|--------------------|

**OBSOLETE**

**PART NUMBERING GUIDE**

**E31J2 F 3 A 2 C - 155.520M TR**

**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=Tubes  
TR = Tape and Reel (Standard)

**FREQUENCY**

**ADDITIONAL OUTPUT/LOGIC CONTROL**

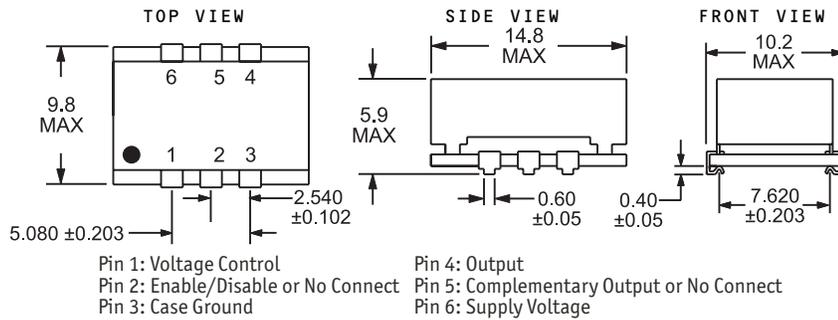
A=No Connect and Single Output  
B=Enable/Disable and Single Output  
C=No Connect and Complementary Output  
D=Enable/Disable and Complementary Output

**DUTY CYCLE**

1=50 ±10(%), 2=50 ±5(%)

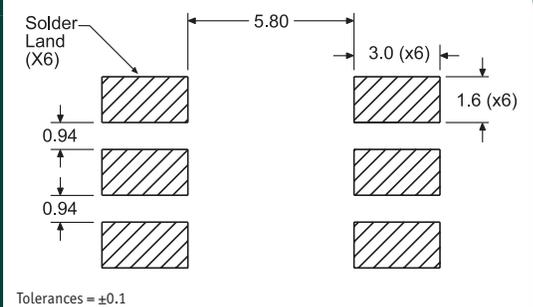
**MECHANICAL DIMENSIONS**

ALL DIMENSIONS IN MILLIMETERS



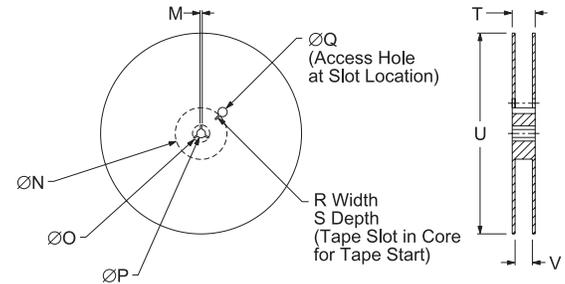
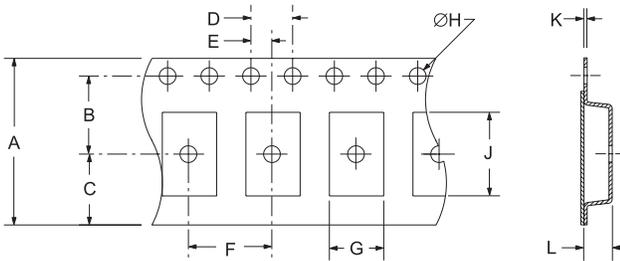
**SUGGESTED SOLDER PAD LAYOUT**

ALL DIMENSIONS IN MILLIMETERS



**TAPE AND REEL DIMENSIONS**

ALL DIMENSIONS IN MILLIMETERS



| TAPE | A      | B        | C         | D     | E       |
|------|--------|----------|-----------|-------|---------|
|      | 24 ±.3 | 11.5 ±.1 | 10.75 ±.1 | 4 ±.2 | 2 ±.1   |
| F    | G      | H        | J         | K     | L       |
|      | 12 ±.1 | B0*      | 1.5 ±.1-0 | A0*   | .4 ±.05 |

| REEL | M       | N      | O        | P       | Q        |
|------|---------|--------|----------|---------|----------|
|      | 1.5 MIN | 50 MIN | 20.2 MIN | 13 ±.2  | 40 MIN   |
| R    | S       | T      | U        | V       | QTY/REEL |
|      | 2.5 MIN | 10 MIN | 30.4 MAX | 360 MAX | 24.4±2-0 |

\*Compliant to EIA 481A

**ENVIRONMENTAL/MECHANICAL SPECIFICATIONS**

| Characteristic     | Specification                                                                                                                                                            |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seal Integrity     | Bubble test in Perfluorocarbon at +125°C ±5°C for 60 seconds minimum (internal crystal only).                                                                            |
| 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. |

**MARKING SPECIFICATIONS**

Line 1: ECLIPTEK  
Line 2: XX.XXX M  
Line 3: XX Y ZZ

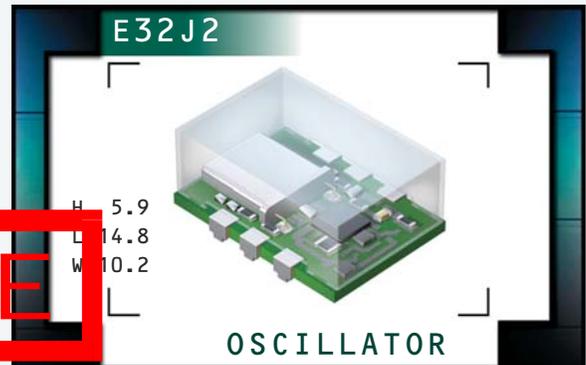
Frequency in MHz (5 Digits Maximum + Decimal)  
Week of Year  
Last Digit of Year  
Eclipsek Manufacturing Identifier

| MANUFACTURER   | CATEGORY   | SERIES | PACKAGE | VOLTAGE | CLASS | REV. DATE |
|----------------|------------|--------|---------|---------|-------|-----------|
| ECLIPTEK CORP. | OSCILLATOR | E31J2  | 6-PCB-J | 5.0V    | 0574  | 01/03     |

# E32J2 Series

- PECL Output VCXO
- 3.3V supply voltage
- 6 pad PCB SMD package with J-leads
- Stability to 20nm
- Output Enable/Disable available
- Complementary Output available
- Available on Tape and Reel

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(%)<br>50 ±5(%)                                                                                                                                 |
| <b>Load Drive Capability</b>                                    |                                                                                                                                                       | 50 Ohms into V <sub>CC</sub> -2.0V <sub>DC</sub>                                                                                                      |
| <b>Additional Output / Logic Control</b>                        |                                                                                                                                                       | No Connect and Single Output<br>Enable/Disable and Single Output<br>No Connect and Complementary Output or<br>Enable/Disable and Complementary Output |
| <b>Enable/Disable Input Voltage</b>                             | V <sub>IL</sub> of V <sub>CC</sub> -1.475V <sub>DC</sub> Maximum<br>No Connection<br>V <sub>IH</sub> of V <sub>CC</sub> -1.165V <sub>DC</sub> Minimum | Enables Output<br>Enables Output<br>Disables Output: Logic Low<br>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                                                                                                                                        |
| <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<br>ECLIPTEK CORP. | CATEGORY<br>OSCILLATOR | SERIES<br>E32J2 | PACKAGE<br>6-PCB-J | VOLTAGE<br>3.3V | CLASS<br>OS73 | REV. DATE<br>01/03 |
|--------------------------------|------------------------|-----------------|--------------------|-----------------|---------------|--------------------|

**OBSOLETE**

**PART NUMBERING GUIDE**

**E32J2 F 3 A 2 C - 155.520M TR**

**FREQUENCY TOLERANCE & STABILITY/  
OPERATING TEMPERATURE RANGE**  
 D=±50ppm Maximum over 0°C to +70°C  
 E=±25ppm Maximum over 0°C to +70°C  
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**APR**  
 3=±50ppm Minimum

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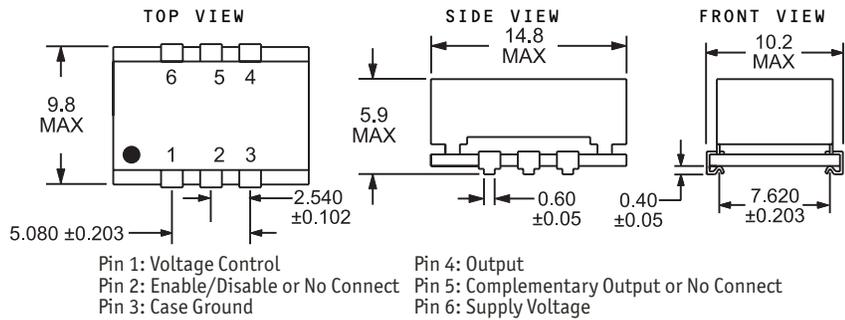
**AVAILABLE OPTIONS**  
 Blank=Tubes  
 TR = Tape and Reel (Standard)

**FREQUENCY**

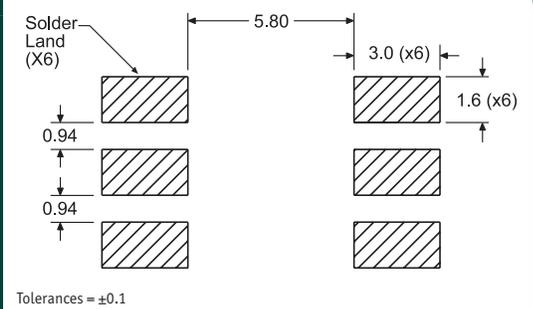
**ADDITIONAL OUTPUT/LOGIC CONTROL**  
 A=No Connect and Single Output  
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 C=No Connect and Complementary Output  
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**DUTY CYCLE**  
 1=50 ±10(%), 2=50 ±5(%)

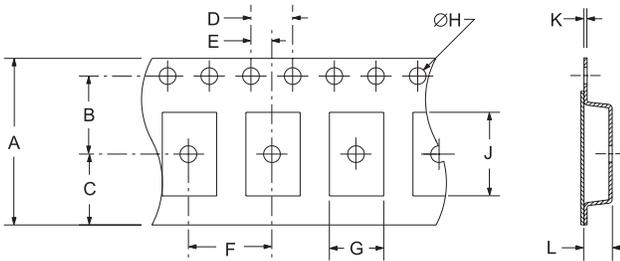
**MECHANICAL DIMENSIONS**  
 ALL DIMENSIONS IN MILLIMETERS



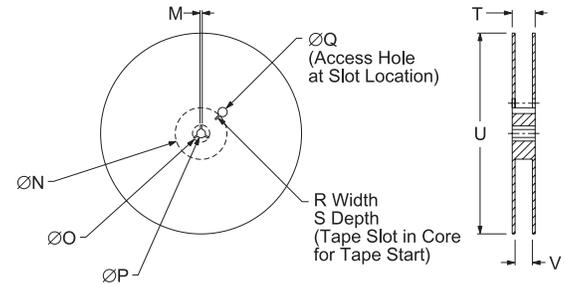
**SUGGESTED SOLDER PAD LAYOUT**  
 ALL DIMENSIONS IN MILLIMETERS



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



| TAPE | A      | B         | C         | D       | E     |
|------|--------|-----------|-----------|---------|-------|
|      | 24 ±.3 | 11.5 ±.1  | 10.75 ±.1 | 4 ±.2   | 2 ±.1 |
| F    | G      | H         | J         | K       | L     |
|      | B0*    | 1.5 ±.1-0 | A0*       | .4 ±.05 | K0*   |



| REEL | M       | N      | O        | P       | Q        |      |
|------|---------|--------|----------|---------|----------|------|
|      | 1.5 MIN | 50 MIN | 20.2 MIN | 13 ±.2  | 40 MIN   |      |
| R    | S       | T      | U        | V       | QTY/REEL |      |
|      | 2.5 MIN | 10 MIN | 30.4 MAX | 360 MAX | 24.4±2-0 | 1000 |

\*Compliant to EIA 481A

**ENVIRONMENTAL/MECHANICAL SPECIFICATIONS**

| Characteristic     | Specification                                                                                                                                                            |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Seal Integrity     | Bubble test in Perfluorocarbon at +125°C ±5°C for 60 seconds minimum (internal crystal only).                                                                            |
| 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. |

**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

| MANUFACTURER   | CATEGORY   | SERIES | PACKAGE | VOLTAGE | CLASS | REV. DATE |
|----------------|------------|--------|---------|---------|-------|-----------|
| ECLIPTEK CORP. | OSCILLATOR | E32J2  | 6-PCB-J | 3.3V    | OS73  | 01/03     |