

## Marketing Bulletin

**DATE:** January 5, 2004  
**TO:** Affected Customers  
**FROM:** Mark Stoner  
**RE:** Product Termination

To all concerned parties,

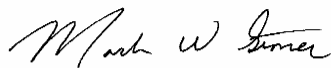
This bulletin is to notify all customers of the termination of the following Ecliptek series effective November 11<sup>th</sup>, 2003:

| <b>Series</b> | <b>Description</b>           | <b>Recommended Replacement</b> |
|---------------|------------------------------|--------------------------------|
| EC51          | 5V 14 Pin DIP TCXO, HCMOS    | EB51F3                         |
| ES51          | 5V 14 Pin DIP TCXO, Sinewave | ES51F3                         |
| EC53          | 3.3V 14 Pin DIP TCXO, HCMOS  | EB52F3                         |

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 February 1<sup>st</sup>, 2004, with deliveries to conclude by July 1<sup>st</sup> 2004.

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

Best Regards,



Mark W. Stoner  
Director of Marketing  
Ecliptek Corporation

# STANDARD SPECIFICATIONS

|                                                                                                                         |                                                                                                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency Range:                                                                                                        | 9.600MHz to 35.000MHz                                                                                                                                               |
| Frequency Stability:<br>vs. Input Voltage ( $\pm 5\%$ )<br>vs. Load ( $\pm 2k\Omega / \pm 2pF$ )<br>vs. Aging (at 25°C) | See Table 1 for Maximum Values (Inclusive of Operating Temperature Range)<br>$\pm 0.3ppm$ Maximum<br>$\pm 0.3ppm$ Maximum<br>$\pm 1ppm/year$ Maximum                |
| Operating/Storage Temp. Range                                                                                           | See Table 1 for Operating Temperature Range / Storage -40°C to +85°C                                                                                                |
| Supply Voltage                                                                                                          | 5.0Vdc $\pm 5\%$                                                                                                                                                    |
| Input Current                                                                                                           | 1.5mA Max. $\leq 20.000MHz$ , 2.0mA Max. $20.001MHz$ to $29.999MHz$ , 3.0mA Max. $\geq 30.000MHz$                                                                   |
| Output Voltage                                                                                                          | 1.0Vp-p Minimum                                                                                                                                                     |
| Load Drive Capability                                                                                                   | 10kOhms // 10pF                                                                                                                                                     |
| Internal Trim (Top of Can)                                                                                              | $\pm 3ppm$ Minimum                                                                                                                                                  |
| Pin 1 Control Voltage<br>Blank<br>V                                                                                     | No Connect (Pin 1 not present)<br>2.5Vdc $\pm 2.0Vdc$ , Positive Transfer Characteristic                                                                            |
| Frequency Deviation                                                                                                     | $\pm 5ppm$ Minimum over Control Voltage                                                                                                                             |
| Typical Phase Noise                                                                                                     | -85dBc/Hz at 10Hz Offset, -115dBc/Hz at 100Hz Offset, -135dBc/Hz at 1kHz Offset, -140dBc/Hz at 10kHz Offset, -145dBc/Hz at 100kHz Offset, -150dBc/Hz at 1MHz Offset |

**OBSOLETE**

## ENVIRONMENTAL & MECHANICAL

|                   |                                       |                               |                          |
|-------------------|---------------------------------------|-------------------------------|--------------------------|
| Fine Leak Test:   | MIL-STD-883, Method 1014, Condition A | Solderability:                | MIL-STD-883, Method 2002 |
| Gross Leak Test:  | MIL-STD-883, Method 1014, Condition C | Temperature Cycling:          | MIL-STD-883, Method 1010 |
| Mechanical Shock: | MIL-STD-202, Method 213, Condition C  | Resistance to Soldering Heat: | MIL-STD-202, Method 210  |
| Vibration:        | MIL-STD-883, Method 2007, Condition A | Resistance to Solvents:       | MIL-STD-202, Method 215  |
| Lead Integrity:   | MIL-STD-883, Method 2004              |                               |                          |

**TABLE 1: PART NUMBERING CODES**

| OPERATING TEMPERATURE |      | FREQUENCY STABILITY                                                                                  |              |              |              |              |              |       |
|-----------------------|------|------------------------------------------------------------------------------------------------------|--------------|--------------|--------------|--------------|--------------|-------|
|                       |      | X Denotes availability from 9.600MHz to 25.000MHz<br>Y Denotes availability for any valid frequency. |              |              |              |              |              |       |
| Range                 | Code | 15                                                                                                   | 20           | 25           | 30           | 35           | 50           | Code  |
|                       |      | $\pm 1.5ppm$                                                                                         | $\pm 2.0ppm$ | $\pm 2.5ppm$ | $\pm 3.0ppm$ | $\pm 3.5ppm$ | $\pm 5.0ppm$ | Range |
| 0°C to +50°C          | A    | Y                                                                                                    | Y            | Y            | Y            | Y            | Y            |       |
| -10°C to +60°C        | B    | Y                                                                                                    | Y            | Y            | Y            | Y            | Y            |       |
| -20°C to +70°C        | C    | X                                                                                                    | Y            | Y            | Y            | Y            | Y            |       |
| -30°C to +60°C        | D    |                                                                                                      | X            | Y            | Y            | Y            | Y            |       |
| -30°C to +75°C        | E    |                                                                                                      | X            | X            | Y            | Y            | Y            |       |
| -35°C to +80°C        | F    |                                                                                                      |              | X            | X            | Y            | Y            |       |
| -40°C to +85°C        | G    |                                                                                                      |              |              | X            | X            | Y            |       |

## MARKING GUIDE

(Line #1) **ECLIPTEK**

(Line #2) **ES51 00 X Y**

Pin 1 Connection  
Blank = No Connect (pin 1 not present)  
V = Control Voltage 2.5Vdc  $\pm 2.0Vdc$   
Positive Transfer Characteristic

Operating Temperature  
Code Per Table 1

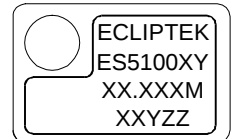
Frequency Stability  
Code Per Table 1

(Line #3) **XX.XXXM**

Frequency

(Line #4) **XX Y ZZ**

Week of Year  
Last Digit of Year  
Ecliptek Manufacturing Code



## PART NUMBERING GUIDE

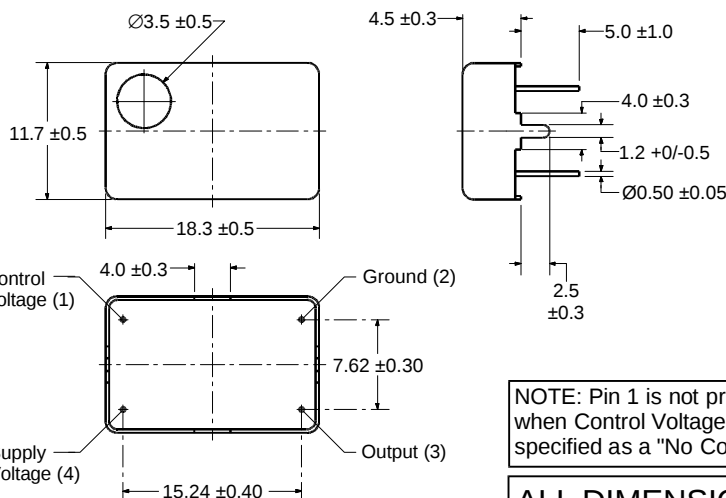
**ES51 25 E V - 12.800M**

Frequency  
Pin 1 Connection  
Blank = No Connect (pin 1 not present)  
V = Voltage Control  
Operating Temperature Range Code Per Table 1  
Frequency Stability Code Per Table 1

**NOTE: Marking shall conform to conditions listed in TQC41-001-000.**

## SPECIFICATION CONTROL DRAWING

|                                                      |      |                                        |      |
|------------------------------------------------------|------|----------------------------------------|------|
|                                                      |      | Drawing Number<br><b>CSC06-020-000</b> |      |
| Title<br><b>4.5mm HEIGHT THRU-HOLE SINEWAVE TCXO</b> |      | Revision<br><b>E</b>                   |      |
| Revision<br><b>E</b>                                 |      | Effectivity Date<br><b>05-02-03</b>    |      |
| ECN Number<br><b>8396</b>                            |      | PAGE 1 OF 2                            |      |
| Approved By                                          | Date | Released By                            | Date |



NOTE: Pin 1 is not present when Control Voltage is specified as a "No Connect"

**ALL DIMENSIONS IN MILLIMETERS**

# STANDARD SPECIFICATIONS

|                                                                                                                 |                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency Range:                                                                                                | 9.600MHz to 35.000MHz                                                                                                                                                     |
| Frequency Stability:<br>vs. Input Voltage ( $\pm 5\%$ )<br>vs. Load ( $\pm 2\text{pF}$ )<br>vs. Aging (at 25°C) | See Table 1 for Maximum Values (Inclusive of Operating Temperature Range)<br>$\pm 0.3\text{ppm}$ Maximum<br>$\pm 0.3\text{ppm}$ Maximum<br>$\pm 1\text{ppm/year}$ Maximum |
| Operating/Storage Temp. Range                                                                                   | See Table 1 for Operating Temperature Range / Storage -40°C to +85°C                                                                                                      |
| Supply Voltage                                                                                                  | 5.0Vdc $\pm 5\%$                                                                                                                                                          |
| Input Current                                                                                                   | 30mA Maximum                                                                                                                                                              |
| Output Voltage Logic High                                                                                       | 2.4Vdc Min. w/TTL Load, VDD-0.5Vdc Min. w/HCMOS Load                                                                                                                      |
| Output Voltage Logic Low                                                                                        | 0.4Vdc Max. w/TTL Load, 0.5Vdc Max. w/HCMOS Load                                                                                                                          |
| Rise/Fall Time                                                                                                  | 10nSec (0.4Vdc to 2.4Vdc w/TTL Load, 20% to 80% of waveform w/HCMOS Load)                                                                                                 |
| Duty Cycle                                                                                                      | 50% $\pm 10\%$ (@1.4Vdc w/TTL Load, @50% of waveform w/HCMOS Load)                                                                                                        |
| Load Drive Capability                                                                                           | 10TTL Load or 15pF HCMOS Load Maximum                                                                                                                                     |
| Internal Trim (Top of Can)                                                                                      | $\pm 3\text{ppm}$ Minimum                                                                                                                                                 |
| Pin 1 Control Voltage<br>Blank<br>V                                                                             | No Connect (Pin 1 not present)<br>2.5Vdc $\pm 2.0\text{Vdc}$ , Positive Transfer Characteristic                                                                           |
| Frequency Deviation                                                                                             | $\pm 5\text{ppm}$ Minimum over Control Voltage                                                                                                                            |
| Typical Phase Noise                                                                                             | -85dBc/Hz at 10Hz Offset, -115dBc/Hz at 100Hz Offset, -135dBc/Hz at 1kHz Offset, -140dBc/Hz at 10kHz Offset, -145dBc/Hz at 100kHz Offset, -150dBc/Hz at 1MHz Offset       |

**OBSOLETE**

## ENVIRONMENTAL & MECHANICAL

|                   |                                       |                               |                          |
|-------------------|---------------------------------------|-------------------------------|--------------------------|
| Fine Leak Test:   | MIL-STD-883, Method 1014, Condition A | Solderability:                | MIL-STD-883, Method 2002 |
| Gross Leak Test:  | MIL-STD-883, Method 1014, Condition C | Temperature Cycling:          | MIL-STD-883, Method 1010 |
| Mechanical Shock: | MIL-STD-202, Method 213, Condition C  | Resistance to Soldering Heat: | MIL-STD-202, Method 210  |
| Vibration:        | MIL-STD-883, Method 2007, Condition A | Resistance to Solvents:       | MIL-STD-202, Method 215  |
| Lead Integrity:   | MIL-STD-883, Method 2004              |                               |                          |

**TABLE 1: PART NUMBERING CODES**

| OPERATING TEMPERATURE |      | FREQUENCY STABILITY                                                                                  |                     |                     |                     |                     |                     |       |
|-----------------------|------|------------------------------------------------------------------------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-------|
|                       |      | X Denotes availability from 9.600MHz to 25.000MHz<br>Y Denotes availability for any valid frequency. |                     |                     |                     |                     |                     |       |
| Range                 | Code | 15                                                                                                   | 20                  | 25                  | 30                  | 35                  | 50                  | Code  |
|                       |      | $\pm 1.5\text{ppm}$                                                                                  | $\pm 2.0\text{ppm}$ | $\pm 2.5\text{ppm}$ | $\pm 3.0\text{ppm}$ | $\pm 3.5\text{ppm}$ | $\pm 5.0\text{ppm}$ | Range |
| 0°C to +50°C          | A    | Y                                                                                                    | Y                   | Y                   | Y                   | Y                   | Y                   |       |
| -10°C to +60°C        | B    | Y                                                                                                    | Y                   | Y                   | Y                   | Y                   | Y                   |       |
| -20°C to +70°C        | C    | X                                                                                                    | Y                   | Y                   | Y                   | Y                   | Y                   |       |
| -30°C to +60°C        | D    |                                                                                                      | X                   | Y                   | Y                   | Y                   | Y                   |       |
| -30°C to +75°C        | E    |                                                                                                      | X                   | X                   | Y                   | Y                   | Y                   |       |
| -35°C to +80°C        | F    |                                                                                                      |                     | X                   | X                   | Y                   | Y                   |       |
| -40°C to +85°C        | G    |                                                                                                      |                     |                     | X                   | X                   | Y                   |       |

## MARKING GUIDE

(Line #1) **ECLIPTEK**

(Line #2) **EC51 00 X Y**

Pin 1 Connection  
Blank = No Connect (pin 1 not present)  
V = Control Voltage 2.5Vdc  $\pm 2.0\text{Vdc}$   
Positive Transfer Characteristic

Operating Temperature  
Code Per Table 1

Frequency Stability  
Code Per Table 1

## PART NUMBERING GUIDE

**EC51 25 E V - 12.800M**

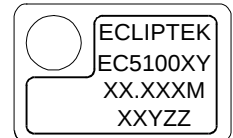
Frequency  
Pin 1 Connection  
Blank = No Connect (pin 1 not present)  
V = Voltage Control  
Operating Temperature Range Code Per Table 1  
Frequency Stability Code Per Table 1

(Line #3) **XX.XXXM**

Frequency

(Line #4) **XX Y ZZ**

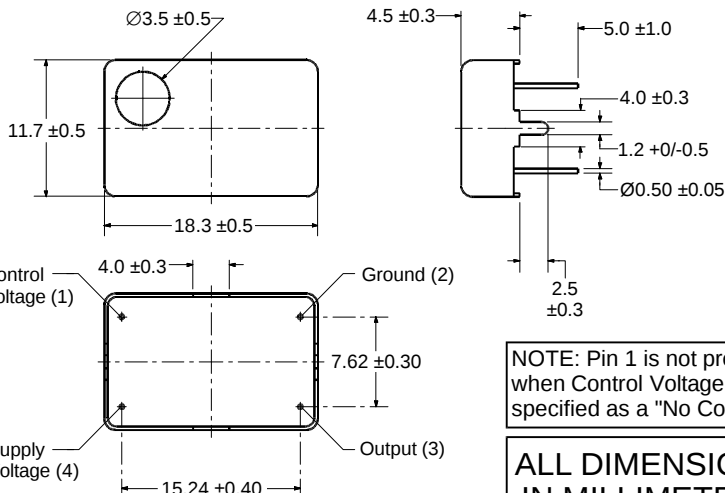
Week of Year  
Last Digit of Year  
Ecliptek Manufacturing Code



**NOTE: Marking shall conform to conditions listed in TQC41-001-000.**

## SPECIFICATION CONTROL DRAWING

|                                                       |      |                                        |      |
|-------------------------------------------------------|------|----------------------------------------|------|
|                                                       |      | Drawing Number<br><b>CSC06-010-000</b> |      |
| Title<br><b>4.5mm HEIGHT THRU-HOLE HCMOS/TTL TCXO</b> |      | Revision<br><b>E</b>                   |      |
| Revision<br><b>E</b>                                  |      | Effectivity Date<br><b>05-02-03</b>    |      |
| ECN Number<br><b>8395</b>                             |      | PAGE 1 OF 2                            |      |
| Approved By                                           | Date | Released By                            | Date |



NOTE: Pin 1 is not present when Control Voltage is specified as a "No Connect"

**ALL DIMENSIONS IN MILLIMETERS**

# STANDARD SPECIFICATIONS

|                                                                                                                 |                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Frequency Range:                                                                                                | 9.600MHz to 35.000MHz                                                                                                                                                     |
| Frequency Stability:<br>vs. Input Voltage ( $\pm 5\%$ )<br>vs. Load ( $\pm 2\text{pF}$ )<br>vs. Aging (at 25°C) | See Table 1 for Maximum Values (Inclusive of Operating Temperature Range)<br>$\pm 0.3\text{ppm}$ Maximum<br>$\pm 0.3\text{ppm}$ Maximum<br>$\pm 1\text{ppm/year}$ Maximum |
| Operating/Storage Temp. Range                                                                                   | See Table 1 for Operating Temperature Range / Storage -40°C to +85°C                                                                                                      |
| Supply Voltage                                                                                                  | 3.3Vdc $\pm 5\%$                                                                                                                                                          |
| Input Current                                                                                                   | 10mA Maximum $\leq 20.000\text{MHz}$ , 20mA Maximum $> 20.000\text{MHz}$                                                                                                  |
| Output Voltage Logic High                                                                                       | 2.7Vdc Minimum                                                                                                                                                            |
| Output Voltage Logic Low                                                                                        | 0.5Vdc Maximum                                                                                                                                                            |
| Rise/Fall Time                                                                                                  | 10nSec. Maximum (20% to 80% of waveform)                                                                                                                                  |
| Duty Cycle                                                                                                      | 50% $\pm 10\%$ (@50% of waveform)                                                                                                                                         |
| Load Drive Capability                                                                                           | 15pF HCMOS Load Maximum                                                                                                                                                   |
| Internal Trim (Top of Can)                                                                                      | $\pm 3\text{ppm}$ Minimum                                                                                                                                                 |
| Pin 1 Control Voltage<br>Blank<br>V                                                                             | No Connect (Pin 1 not present)<br>1.65Vdc $\pm 1.35\text{Vdc}$ , Positive Transfer Characteristic                                                                         |
| Frequency Deviation                                                                                             | $\pm 5\text{ppm}$ Minimum over Control Voltage                                                                                                                            |
| Typical Phase Noise                                                                                             | -85dBc/Hz at 10Hz Offset, -115dBc/Hz at 100Hz Offset, -135dBc/Hz at 1kHz Offset, -140dBc/Hz at 10kHz Offset, -145dBc/Hz at 100kHz Offset, -150dBc/Hz at 1MHz Offset       |

**OBSOLETE**

## ENVIRONMENTAL & MECHANICAL

|                   |                                       |                               |                          |
|-------------------|---------------------------------------|-------------------------------|--------------------------|
| Fine Leak Test:   | MIL-STD-883, Method 1014, Condition A | Solderability:                | MIL-STD-883, Method 2002 |
| Gross Leak Test:  | MIL-STD-883, Method 1014, Condition C | Temperature Cycling:          | MIL-STD-883, Method 1010 |
| Mechanical Shock: | MIL-STD-202, Method 213, Condition C  | Resistance to Soldering Heat: | MIL-STD-202, Method 210  |
| Vibration:        | MIL-STD-883, Method 2007, Condition A | Resistance to Solvents:       | MIL-STD-202, Method 215  |
| Lead Integrity:   | MIL-STD-883, Method 2004              |                               |                          |

**TABLE 1: PART NUMBERING CODES**

| OPERATING TEMPERATURE |      | FREQUENCY STABILITY                                                                                  |                     |                     |                     |                     |                     |       |
|-----------------------|------|------------------------------------------------------------------------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-------|
|                       |      | X Denotes availability from 9.600MHz to 25.000MHz<br>Y Denotes availability for any valid frequency. |                     |                     |                     |                     |                     |       |
| Range                 | Code | 15                                                                                                   | 20                  | 25                  | 30                  | 35                  | 50                  | Code  |
|                       |      | $\pm 1.5\text{ppm}$                                                                                  | $\pm 2.0\text{ppm}$ | $\pm 2.5\text{ppm}$ | $\pm 3.0\text{ppm}$ | $\pm 3.5\text{ppm}$ | $\pm 5.0\text{ppm}$ | Range |
| 0°C to +50°C          | A    | Y                                                                                                    | Y                   | Y                   | Y                   | Y                   | Y                   |       |
| -10°C to +60°C        | B    | Y                                                                                                    | Y                   | Y                   | Y                   | Y                   | Y                   |       |
| -20°C to +70°C        | C    | X                                                                                                    | Y                   | Y                   | Y                   | Y                   | Y                   |       |
| -30°C to +60°C        | D    |                                                                                                      | X                   | Y                   | Y                   | Y                   | Y                   |       |
| -30°C to +75°C        | E    |                                                                                                      | X                   | X                   | Y                   | Y                   | Y                   |       |
| -35°C to +80°C        | F    |                                                                                                      |                     | X                   | X                   | Y                   | Y                   |       |
| -40°C to +85°C        | G    |                                                                                                      |                     |                     | X                   | X                   | Y                   |       |

## MARKING GUIDE

(Line #1) **ECLIPTEK**

(Line #2) **EC53 00 X Y**

Pin 1 Connection  
Blank = No Connect (pin 1 not present)  
V = Control Voltage 1.65Vdc  $\pm 1.35\text{Vdc}$   
Positive Transfer Characteristic  
Operating Temperature  
Code Per Table 1  
Frequency Stability  
Code Per Table 1

## PART NUMBERING GUIDE

**EC53 25 E V - 12.800M**

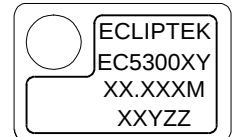
Frequency  
Pin 1 Connection  
Blank = No Connect (pin 1 not present)  
V = Voltage Control  
Operating Temperature Range Code Per Table 1  
Frequency Stability Code Per Table 1

(Line #3) **XX.XXXM**

Frequency

(Line #4) **XX Y ZZ**

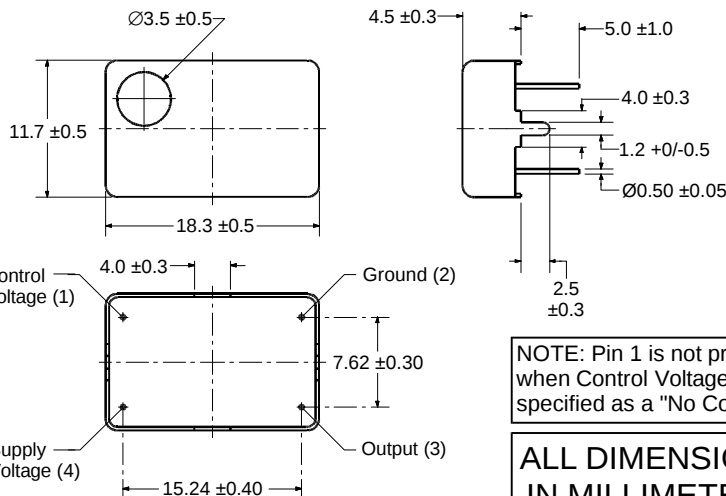
Week of Year  
Last Digit of Year  
Ecliptek Manufacturing Code (Per TEN02-001-000)



**NOTE: Marking shall conform to conditions listed in TQC41-001-000.**

## SPECIFICATION CONTROL DRAWING

|                                                       |      |                                        |      |
|-------------------------------------------------------|------|----------------------------------------|------|
|                                                       |      | Drawing Number<br><b>CSC06-110-000</b> |      |
| Title<br><b>4.5mm THRU-HOLE 3.3Vdc HCMOS/TTL TCXO</b> |      | Revision<br><b>C</b>                   |      |
| Revision<br><b>C</b>                                  |      | Effectivity Date<br><b>05-02-03</b>    |      |
| ECN Number<br><b>8400</b>                             |      | PAGE 1 OF 2                            |      |
| Approved By                                           | Date | Released By                            | Date |



NOTE: Pin 1 is not present when Control Voltage is specified as a "No Connect"

**ALL DIMENSIONS IN MILLIMETERS**

**CLASS/SUBCLASS: OS62**