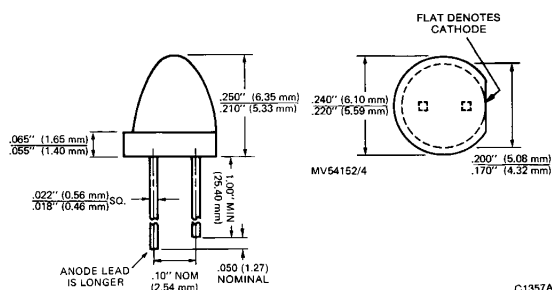


**STANDARD RED MV50152/4  
YELLOW MV53152/4**

**HIGH EFFICIENCY GREEN MV54152/4  
HIGH EFFICIENCY RED MV57152/4**

### PACKAGE DIMENSIONS



- NOTES:
1. ALL DIMENSIONS ARE IN INCHES (mm)
  2. TOLERANCES ARE .010 INCH UNLESS SPECIFIED
  3. AN EPOXY MENISCUS MAY EXTEND ABOUT .040" (1 mm) DOWN THE LEADS

### DESCRIPTION

These solid state indicators offer a variety of lens effects and color availability in a short barrel T-1¾ package. The High Efficiency Red, High Efficiency Green and Yellow devices are made with gallium phosphide.

### FEATURES

- High intensity light source with two lens effects
- Red, High Efficiency Red, High Efficiency Red, High Efficiency Green and Yellow colors available
- Versatile mounting on PC board or panel
- Long life—solid state reliability
- Low power requirements
- Compact, rugged, lightweight
- High efficiency
- MV5X154 diffused, MV5X152 non-diffused
- Short T-1¾ size

### PHYSICAL CHARACTERISTICS

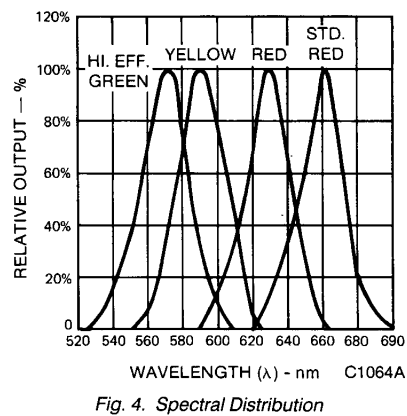
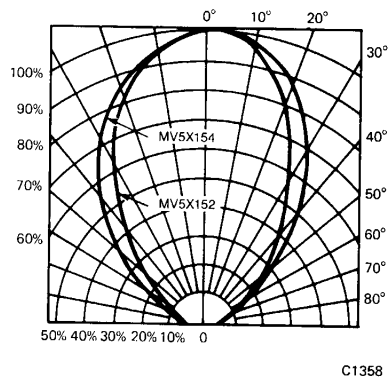
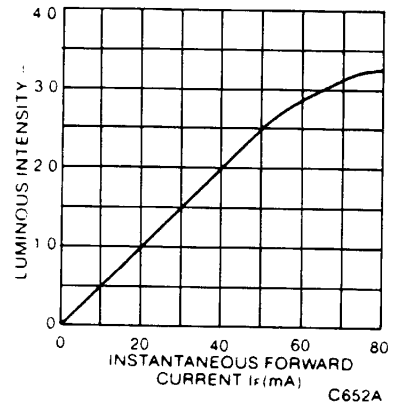
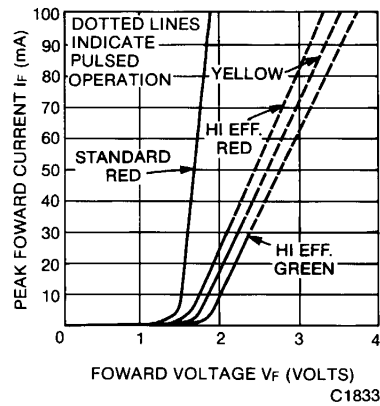
| TYPE    | SOURCE COLOR          | LENS COLOR              | LENS EFFECT       |
|---------|-----------------------|-------------------------|-------------------|
| MV50152 | Standard Red          | Red Clear               | Point Source      |
| MV50154 | Standard red          | Red Lightly Diffused    | Soft Point Source |
| MV53152 | Yellow                | Amber Clear             | Point Source      |
| MV53154 | Yellow                | Amber Lightly Diffused  | Soft Point Source |
| MV54152 | High Efficiency Green | Green Clear             | Point Source      |
| MV54154 | High Efficiency Green | Green Lightly Diffused  | Soft Point Source |
| MV57152 | High Efficiency Red   | Orange Clear            | Point Source      |
| MV57154 | High Efficiency Red   | Orange Lightly Diffused | Soft Point Source |

| ELECTRO-OPTICAL CHARACTERISTICS (T <sub>A</sub> =25°C Unless Otherwise Specified) |      |                 |                        |         |       |       |       |       |       |       |       |       |
|-----------------------------------------------------------------------------------|------|-----------------|------------------------|---------|-------|-------|-------|-------|-------|-------|-------|-------|
| PARAMETER                                                                         |      | SYMBOL          | TEST COND.             | UNITS   | 50152 | 50154 | 53152 | 53154 | 54152 | 54154 | 57152 | 57154 |
| Forward voltage                                                                   | typ. | V <sub>F</sub>  | I <sub>F</sub> =10 mA  | V       | 1.6   | 1.6   | 2.1   | 2.1   | 2.2   | 2.2   | 2.0   | 2.0   |
|                                                                                   | max. |                 | I <sub>F</sub> =10 mA  |         | 2.0   | 2.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Luminous Intensity                                                                | min. | I <sub>V</sub>  | I <sub>F</sub> =10 mA  | mcd     | 0.6   | 0.4   | 3.0   | 1.5   | 2.5   | 2.0   | 4.0   | 2.0   |
|                                                                                   | typ. |                 | I <sub>F</sub> =10 mA  | mcd     | 2.0   | 1.5   | 10.   | 8.0   | 15.0  | 12.0  | 10.0  | 8.0   |
| Peak wavelength                                                                   |      | λ <sub>p</sub>  | I <sub>F</sub> =10 mA  | nm      | 660   | 660   | 585   | 585   | 565   | 565   | 630   | 630   |
| Spectral line half width                                                          |      |                 | I <sub>F</sub> =10 mA  | nm      | 20    | 20    | 35    | 35    | 35    | 35    | 45    | 45    |
| Capacitance                                                                       | typ. | C               | V=0                    | pF      | 30    | 30    | 45    | 45    | 20    | 20    | 45    | 45    |
| Reverse voltage                                                                   | min. | V <sub>BR</sub> | I <sub>R</sub> =100 μA | V       | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| Reverse current                                                                   | max. | I <sub>R</sub>  | V <sub>R</sub> =5.0 V  | μA      | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   |
| Viewing angle (total)<br>(See Fig. 2)                                             |      | 2θ½             |                        | degrees | 45    | 50    | 45    | 50    | 45    | 50    | 45    | 50    |

| <b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_A=25^{\circ}\text{C}$ Unless Otherwise Specified)                |                                                 |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------|
| Power dissipation (MV5015X) .....                                                                     | 180 mW                                          |
| Power dissipation (MV5315X=85 mW) .....                                                               | 105 mW                                          |
| Derate linearly from $25^{\circ}\text{C}$ (MV5015X) .....                                             | 2.0 mW/ $^{\circ}\text{C}$                      |
| Derate linearly from $25^{\circ}\text{C}$ .....                                                       | 1.14 mW/ $^{\circ}\text{C}$                     |
| Storage and operating temperatures .....                                                              | $-55^{\circ}\text{C}$ to $+100^{\circ}\text{C}$ |
| Lead soldering time at $260^{\circ}\text{C}$ (See Note 2) .....                                       | 5 sec.                                          |
| Continuous forward current (MV5015X) .....                                                            | 100 mA                                          |
| Continuous forward current (MV5315X=20 mA) .....                                                      | 35 mA                                           |
| Peak forward current (1 $\mu\text{sec}$ pulse, 0.3% duty cycle) (MV5415X=90 mA) (MV5315X=60 mA) ..... | 1.0 A                                           |
| Reverse voltage .....                                                                                 | 5.0 V                                           |

| <b>NOTES</b>                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. The axis of spatial distribution are typically within a $10^{\circ}$ cone with reference to the central axis of the device.                                                               |
| 2. The leads of the device were immersed in molten solder at $260^{\circ}\text{C}$ to a point 1/16 inch (1.6 mm) from the body of the device per MIL-Sd-750, with a dwell time of 5 seconds. |

**TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES**  
(25°C Free Air Temperature Unless Otherwise Specified)





## BULLET PROFILE T-1 3/4 SOLID STATE LAMPS

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