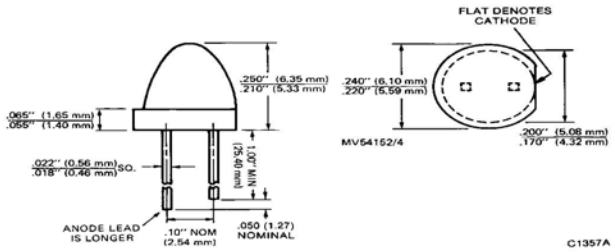
EVERLIGHT

# BULLET PROFILE T-1¾
# SOLID STATE LAMPS

**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 |

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## ELECTRO-OPTICAL CHARACTERISTICS ($T_A$=25°C Unless Otherwise Specified)

| PARAMETER | | SYMBOL | TEST COND. | UNITS | 50152 | 50154 | 53152 | 53154 | 54152 | 54154 | 57152 | 57154 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Forward voltage | typ. | $V_F$ | $I_F$=10 mA | V | 1.6 | 1.6 | 2.1 | 2.1 | 2.2 | 2.2 | 2.0 | 2.0 |
| | max. | | $I_F$=10 mA | | 2.0 | 2.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 |
| Luminous Intensity | min. | $I_v$ | $I_F$=10 mA | mcd | 0.6 | 0.4 | 3.0 | 1.5 | 2.5 | 2.0 | 4.0 | 2.0 |
| | typ. | | $I_F$=10 mA | mcd | 2.0 | 1.5 | 10. | 8.0 | 15.0 | 12.0 | 10.0 | 8.0 |
| Peak wavelength | | λp | $I_F$=10 mA | nm | 660 | 660 | 585 | 585 | 565 | 565 | 630 | 630 |
| Spectral line half width | | | $I_F$=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. | $V_{BR}$ | $I_R$=100 μA | V | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| Reverse current | max. | $I_R$ | $V_R$=5.0 V | μA | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Viewing angle (total) (See Fig. 2) | | 2θ½ | | degrees | 45 | 50 | 45 | 50 | 45 | 50 | 45 | 50 |

## ABSOLUTE MAXIMUM RATINGS ($T_A$=25°C Unless Otherwise Specified)

Power dissipation (MV5015X) ..... 180 mW
Power dissipation (MV5315X=85 mW) ..... 105 mW
Derate linearly from 25°C (MV5015X) ..... 2.0 mW/°C
Derate linealy from 25°C ..... 1.14 mW/°C
Storage and operating temperatures ..... −55°C to +100°C
Lead soldering time at 260°C (See Note 2) ..... 5 sec.
Continuous forward current (MV5015X) ..... 100 mA
Continuous forward current (MV5315X=20 mA) ..... 35 mA
Peak forward current (1μsec pulse, 0.3% duty cycle) (MV5415X=90 mA) (MV5315X=60 mA) ..... 1.0 A
Reverse voltage ..... 5.0 V

## NOTES

1. *The axis of spatial distribution are typically within a 10° cone with reference to the central axis of the device.*
2. *The leads of the device were immersed in molten solder at 260°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)

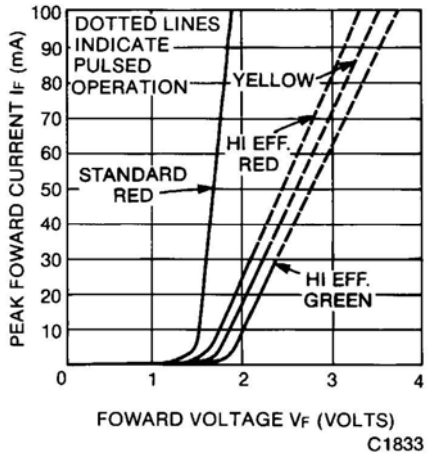


*Fig. 1. Forward Current vs. Forward Voltage*

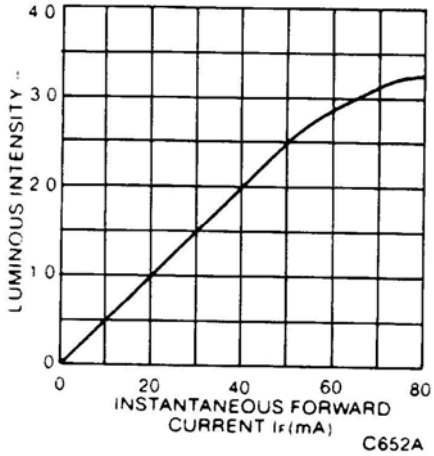


*Fig. 2. Luminous Intensity vs. Forward Current*

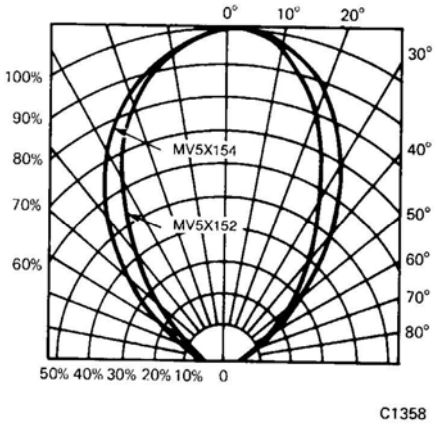


*Fig. 3. Spatial Distribution (Note 1)*

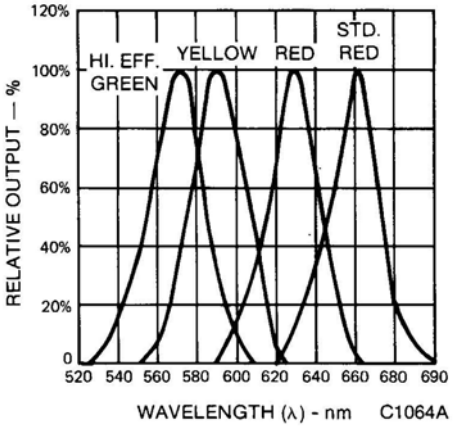


*Fig. 4. Spectral Distribution*

# BULLET PROFILE T-1 3/4
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