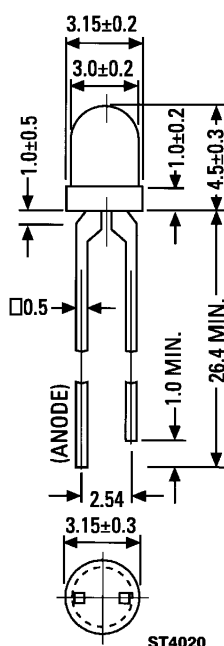


**RED MV50640  
YELLOW MV5364X  
HIGH EFFICIENCY GREEN MV5464X/HLMP-15X3  
HIGH EFFICIENCY RED MV5764X/HLMP-130X**

**PACKAGE DIMENSIONS**



NOTES:  
1. ALL DIMENSIONS ARE IN MM.  
2. LEAD SPACING IS MEASURED WHERE THE LEADS EMERGE FROM THE PACKAGE.  
3. PROTRUDED RESIN UNDER THE FLANGE IS 1.5 mm (0.059") MAX.

**DESCRIPTION**

These solid state indicators offer a variety of color selection. The High Efficiency Red and Yellow devices are made with gallium arsenide phosphide on gallium phosphide. The High Efficiency Green utilizes an improved gallium phosphide light emitting diode. All are encapsulated in epoxy packages with diffused lenses. Their small size, wide viewing angle, and small square leads contribute to their versatility as all-purpose indicators.

**FEATURES**

- Replacement for the HLMP-1300 and -1500 product series
- 100 mil lead spacing T-1
- High efficiency GaP light
- Versatile mounting on PC board or panel
- Wide viewing angle
- Diffused tinted lens

**PHYSICAL CHARACTERISTICS**

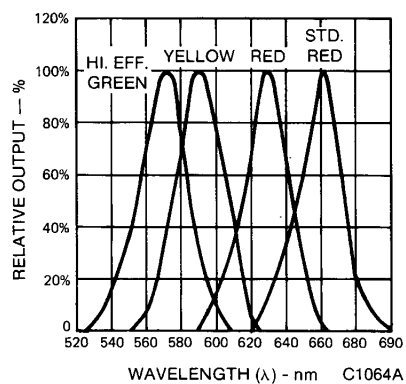
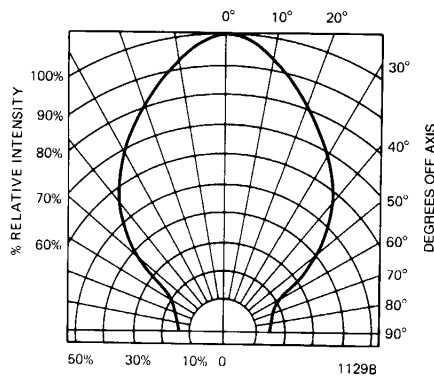
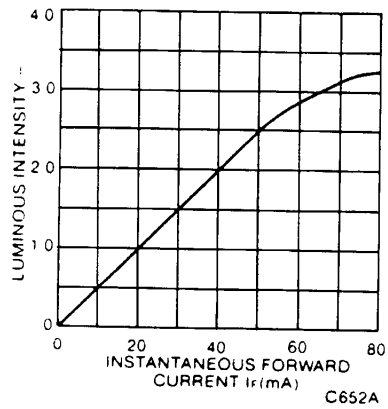
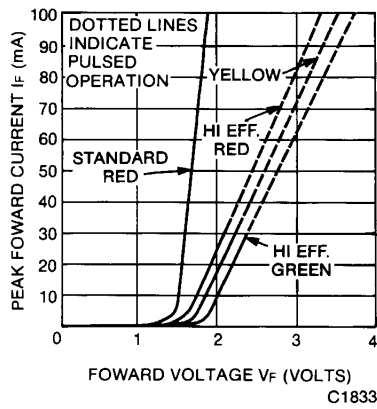
| TYPE                | SOURCE COLOR          | LENS EFFECT    | LUMINOUS INTENSITY at 25°C (mcd) |      | TEST CONDITIONS                                |
|---------------------|-----------------------|----------------|----------------------------------|------|------------------------------------------------|
|                     |                       |                | MIN.                             | TYP. |                                                |
| MV50640             | Standard Red          | Red Diffused   | 0.5                              | 1.5  | $I_F = 20 \text{ mA}$<br>$I_F = 10 \text{ mA}$ |
| MV53640             |                       |                | 1.0                              | 2.0  |                                                |
| MV53641             | High Efficiency Green | Green Diffused | 1.5                              | 3.0  | $I_F = 20 \text{ mA}$                          |
| MV53642             |                       |                | 2.5                              | 4.5  |                                                |
| MV54643 (HLMP-1503) |                       |                | 2.0                              | 5.0  |                                                |
| MV54644 (HLMP-1523) |                       |                | 6.0                              | 10.0 |                                                |
| MV57640 (HLMP-1300) | High Efficiency Red   | Red Diffused   | 1.0                              | 2.0  | $I_F = 10 \text{ mA}$                          |
| MV57641 (HLMP-1301) |                       |                | 2.0                              | 2.5  |                                                |
| MV57642 (HLMP-1302) |                       |                | 3.0                              | 4.0  |                                                |
|                     |                       |                |                                  |      |                                                |

| <b>ELECTRO-OPTICAL CHARACTERISTICS</b><br>(25°C Free Air Temperature Unless Otherwise Specified) |      |                 |                            |         |                 |                   |                              |                            |
|--------------------------------------------------------------------------------------------------|------|-----------------|----------------------------|---------|-----------------|-------------------|------------------------------|----------------------------|
| PARAMETER                                                                                        |      | SYMBOL          | TEST COND.                 | UNITS   | MV50640*<br>RED | MV5364X<br>YELLOW | MV5464X<br>HI. EFF.<br>GREEN | MV5764X<br>HI. EFF.<br>RED |
| Forward voltage                                                                                  | typ. | $V_F$           | $I_F = 10 \text{ mA}$      | V       | 1.6             | 2.1               | 2.2*                         | 2.0                        |
|                                                                                                  | max. |                 |                            |         | 2.0             | 3.0               | 3.0*                         | 3.0                        |
| Peak wavelength                                                                                  |      | $\lambda$       | $I_F = 10 \text{ mA}$      | nm      | 660             | 585               | 562                          | 635                        |
| Spectral line<br>half width                                                                      |      |                 | $I_F = 10 \text{ mA}$      | nm      | 20              | 35                | 30                           | 45                         |
| Capacitance                                                                                      | typ. | C               | $V = 0, f = 1 \text{ MHz}$ | pF      | 23              | 45                | 20                           | 45                         |
| Reverse voltage                                                                                  | min. | $V_{BR}$        | $I_R = 100 \mu\text{A}$    | V       | 5.0             | 5.0               | 5.0                          | 5.0                        |
| Viewing angle<br>(total)                                                                         | typ. | $2\theta_{1/2}$ | See Fig. 3                 | degrees | 90              | 90                | 90                           | 90                         |

\* $I_F = 20 \text{ mA}$

| <b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_A = 25^\circ\text{C}$ Unless Otherwise Specified) |                 |                 |                 |
|----------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|
|                                                                                        | YLW.            | STD. RED        | HER/HEG         |
| Power dissipation at 25°C ambient                                                      | 85              | 120 mW          | 120 mW          |
| Derate linearly from 50°C                                                              | 1.6 mW/°C       | 1.6 mW/°C       | 1.6 mW/°C       |
| Storage and operating temperatures                                                     | -55°C to +100°C | -55°C to +100°C | -55°C to +100°C |
| Lead soldering time at 260°C (1/16 inch from body)                                     | 5 sec.          | 5 sec.          | 5 sec.          |
| Continuous forward current at 25°C                                                     | 20 mA           | 30 mA           | 30 mA           |
| Peak forward current (1 $\mu\text{sec}$ pulse, 0.3% duty cycle)                        | 60 mA           | 1.0 A           | 90 mA           |
| Reverse voltage                                                                        | 5.0 V           | 5.0 V           | 5.0 V           |

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





## DIFFUSED T-100 SOLID STATE LAMPS

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