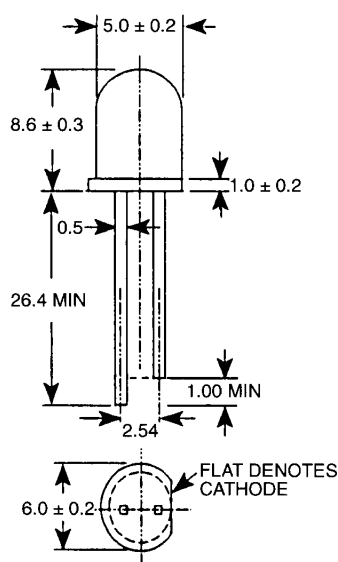


**SUPER RED MV8102 CLEAR**  
**SUPER RED MV8103 CLEAR**  
**SUPER RED MV8104 CLEAR**

**PACKAGE DIMENSIONS**



ST1760

**NOTES:**

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

**DESCRIPTION**

These T-1¾ super bright LEDs have a narrow 20° viewing angle for concentrated light output. The MV8101/2/3/4 are made with GaAlAs LEDs on a GaAlAs substrate. They are all encapsulated in an epoxy package and have water clear lenses.

**FEATURES**

- Outstanding material efficiency
- Popular T-1¾ package
- Low drive current
- Solid state reliability
- Super high brightness suitable for outdoors applications
- Standard 1 mil. lead spacing

**ABSOLUTE MAXIMUM RATING** (T<sub>A</sub> = 25°C Unless Otherwise Specified)

|                                                           |                   |
|-----------------------------------------------------------|-------------------|
| DC forward current (I <sub>F</sub> )                      | 40 mA             |
| Operating temperature range                               | -40°C to +85°     |
| Storage temperature range                                 | -40°C to +100°C   |
| Lead soldering time<br>(at 1/16 inch from bottom of lamp) | 5 seconds @ 260°C |
| Peak forward current<br>(at f=1.0 KHz, Duty factor=1/10)  | 200 mA            |
| Power dissipation (P <sub>d</sub> )                       | 110 mW            |
| Recommended operating current (I <sub>F</sub> Rec)        | 20 mA             |

| <b>ELECTRO-OPTICAL CHARACTERISTICS</b> ( $T_A = 25^\circ\text{C}$ Unless Otherwise Specified) |      |      |      |        |                               |
|-----------------------------------------------------------------------------------------------|------|------|------|--------|-------------------------------|
| PARAMETER                                                                                     | MIN. | TYP. | MAX. | UNITS  | TEST CONDITIONS               |
| Luminous intensity                                                                            |      |      |      |        |                               |
| MV8102                                                                                        | 250  | 370  |      | mcd    | $I_F = 20\text{ mA}$          |
| MV8103                                                                                        | 630  | 940  |      | mcd    | $I_F = 20\text{ mA}$          |
| MV8104                                                                                        | 1000 | 1500 |      | mcd    | $I_F = 20\text{ mA}$          |
| Forward voltage                                                                               | 1.5  | 1.7  | 2.4  | V      | $I_F = 20\text{ mA}$          |
| Peak wavelength                                                                               |      | 660  |      | nm     | $I_F = 20\text{ mA}$          |
| Spectral line half width                                                                      |      | 40   |      | nm     | $I_F = 20\text{ mA}$          |
| Reverse breakdown voltage                                                                     |      | 5    |      | V      | $I_R = 10\text{ }\mu\text{A}$ |
| Viewing angle                                                                                 |      | 20   |      | degree | $I_F = 20\text{ mA}$          |

**TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES** ( $T_A = 25^\circ\text{C}$ )

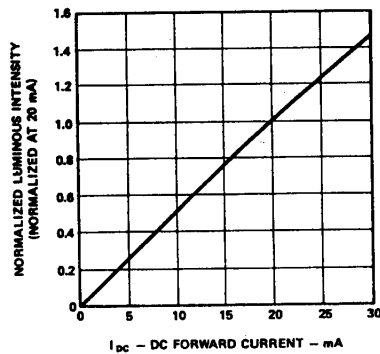


Fig. 1. Relative Luminous Intensity vs. DC Forward Current

ST1002

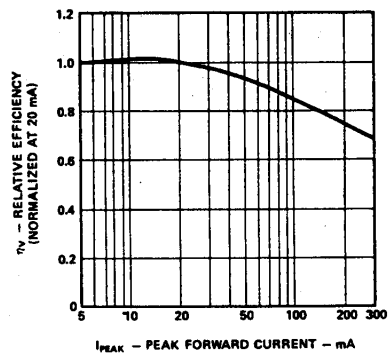


Fig. 2. Relative Efficiency vs. Peak Forward Current

ST1761

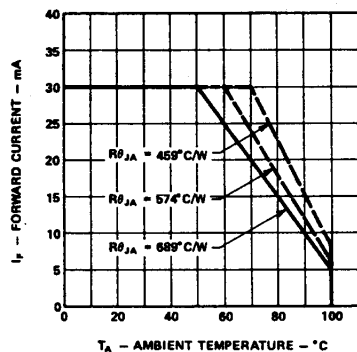


Fig. 3. Maximum Forward DC Current vs. Ambient Temperature  
Derating Based On  $T_{JMAX} = 110^\circ$

ST1762

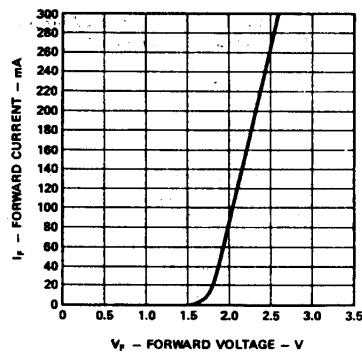
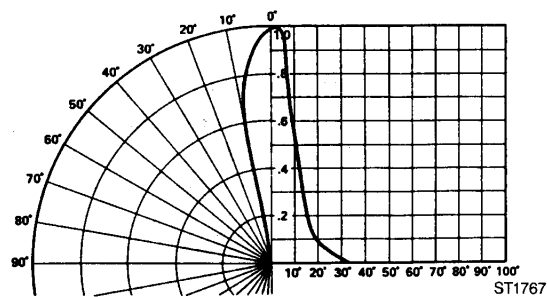
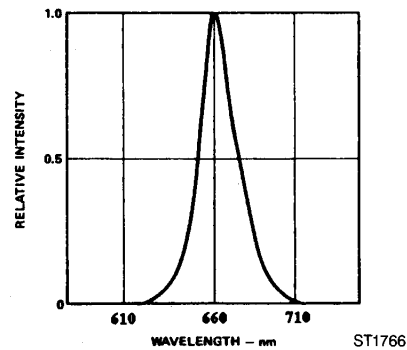
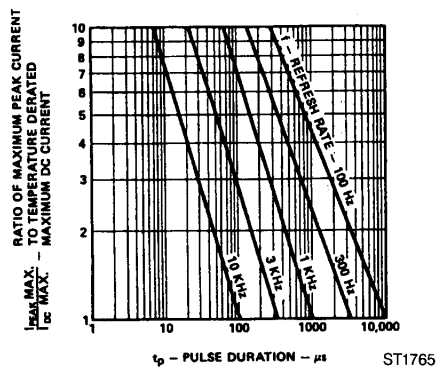


Fig. 4. Forward Current vs. Forward Voltage

ST1763

**TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES ( $T_A=25^\circ\text{C}$ )**





## SUPER BRIGHT T-1 3/4 (5mm) LED LAMPS

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2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.