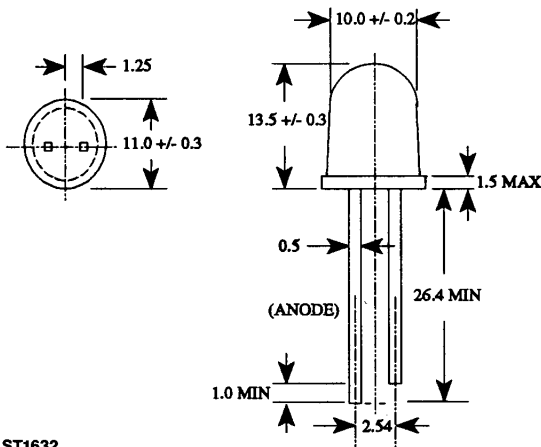


**SUPER RED MV9100 CLEAR
SUPER RED MV9101 CLEAR
SUPER RED MV9102 CLEAR**

PACKAGE DIMENSIONS



ST1632

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 10 mm super bright LEDs have a narrow 8° viewing angle for concentrated light output. The MV9100/1/2 are made with GaAlAs LEDs on a GaAs substrate. They are all encapsulated in an epoxy package and have water clear lenses.

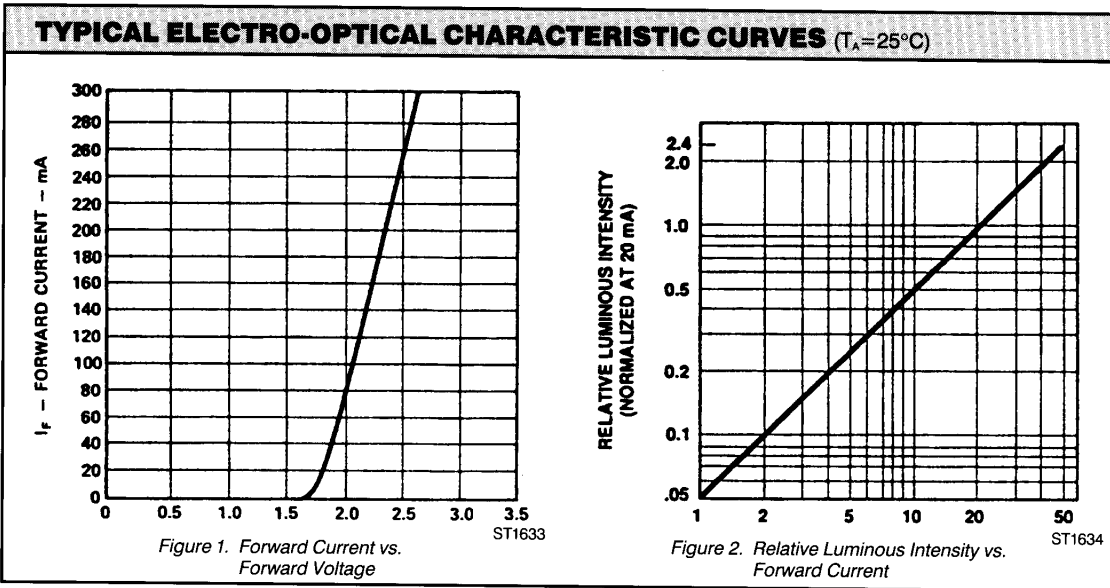
FEATURES

- Outstanding material efficiency.
- Low drive current.
- Solid state reliability.
- Super high brightness suitable for outdoor applications.
- Standard 1 mil. lead spacing.

ABSOLUTE MAXIMUM RATING ($T_A=25^\circ\text{C}$ Unless Otherwise Specified)

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

| ELECTRO-OPTICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ Unless Otherwise Specified) | | | | |
|---|--------|--------|--------|-------------------------|
| PART NUMBER | MV9100 | MV9101 | MV9102 | TEST CONDITIONS |
| Luminous intensity (mcd) | | | | $I_r = 20\text{ mA}$ |
| minimum | 600 | 1000 | 1600 | |
| typical | 940 | 1500 | 2400 | |
| Forward voltage (V_f) | | | | $I_f = 20\text{ mA}$ |
| minimum | | 1.5 | | |
| typical | | 1.7 | | |
| maximum | | 2.4 | | |
| Peak wavelength (nm) | | 660 | | $I_f = 20\text{ mA}$ |
| Spectral line half width (nm) | | 20 | | $I_f = 20\text{ mA}$ |
| Reverse breakdown voltage (V_R) | | 5 | | $I_r = 10\ \mu\text{A}$ |
| Viewing angle ($^\circ$) | | 8 | | $I_f = 20\text{ mA}$ |



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

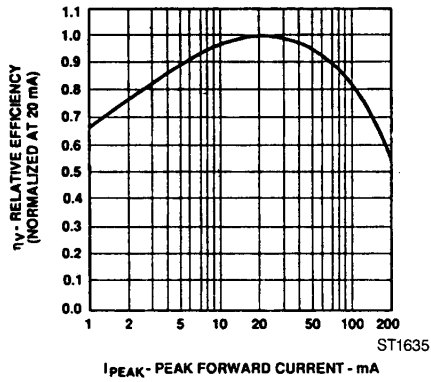


Figure 3. Relative Efficiency vs. Peak Forward Current

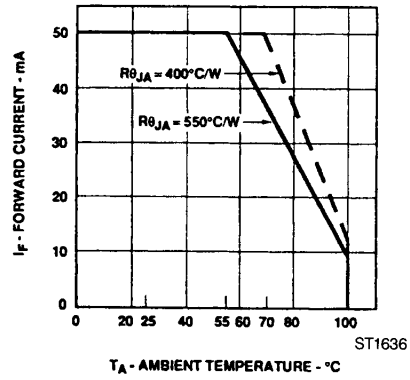


Figure 4. Maximum Forward DC Current vs. Ambient Temperature
Derating based on T_A , MAX = 110° .

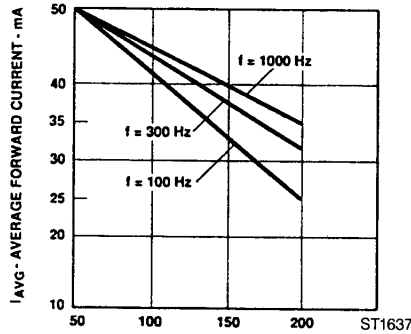


Figure 5. Maximum Average Current vs. Forward Current

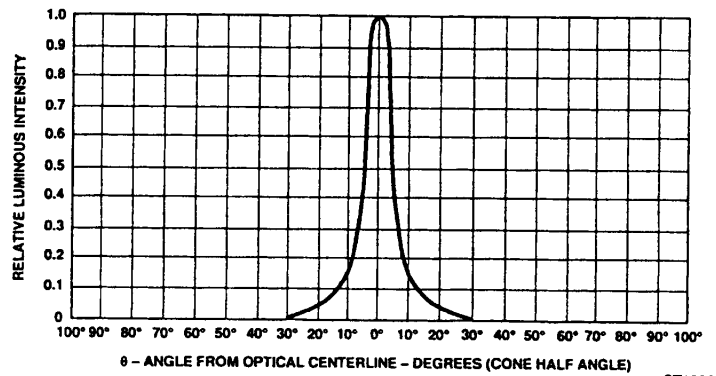


Figure 6. Relative Luminous Intensity vs. Angular Displacement



SUPER BRIGHT 10 mm LED LAMPS

DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
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.