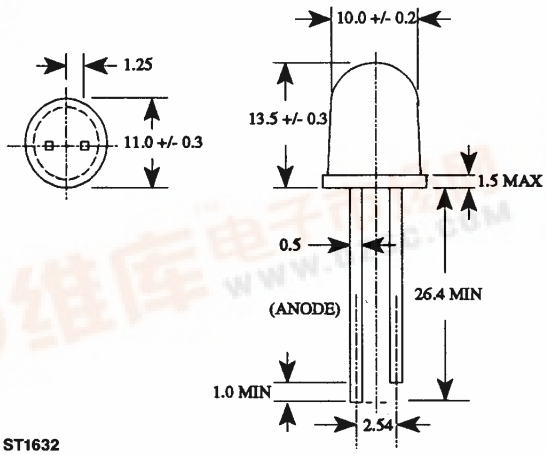
FAIRCHILD
SEMICONDUCTOR™

SUPER BRIGHT 10 mm LED LAMPS

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 GaA1As 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°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_f) (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

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

PART NUMBER	MV9100	MV9101	MV9102	TEST CONDITIONS
Luminous intensity (mcd)				I_F=20 mA
minimum	600	1000	1600	
typical	940	1500	2400	
Forward voltage (V_F)				I_F=20 mA
minimum		1.5		
typical		1.7		
maximum		2.4		
Peak wavelength (nm)		660		I_F=20 mA
Spectral line half width (nm)		20		I_F=20 mA
Reverse breakdown voltage (V_R)		5		I_F=10 μA
Viewing angle (°)		8		I_F=20 mA

TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES (T_A=25°C)

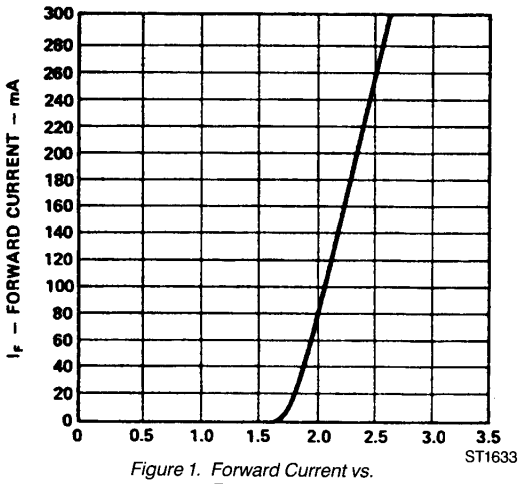

Figure 1. Forward Current vs. Forward Voltage

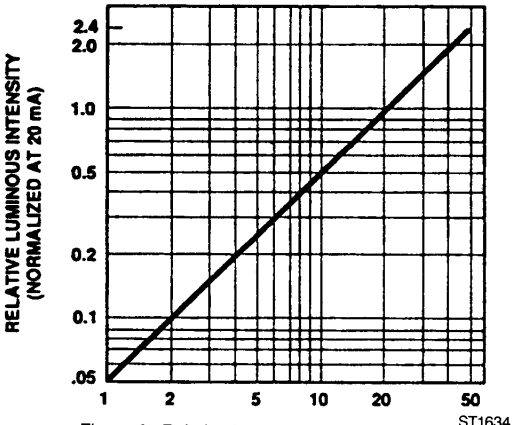

Figure 2. Relative Luminous Intensity vs. Forward Current

TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES (T_A=25°C)

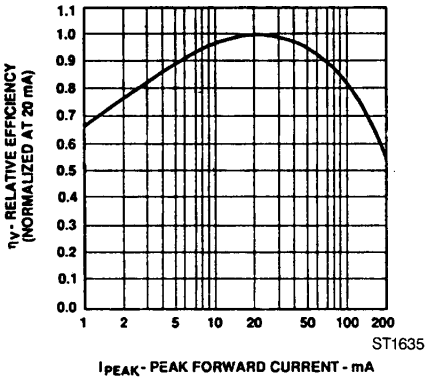

Figure 3. Relative Efficiency vs. Peak Forward Current

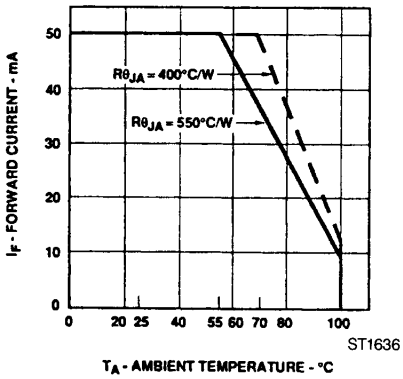

Figure 4. Maximum Forward DC Current vs. Ambient Temperature Derating based on T_J MAX=110°.

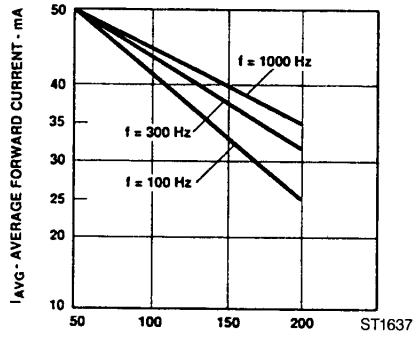

Figure 5. Maximum Average Current vs. Forward Current

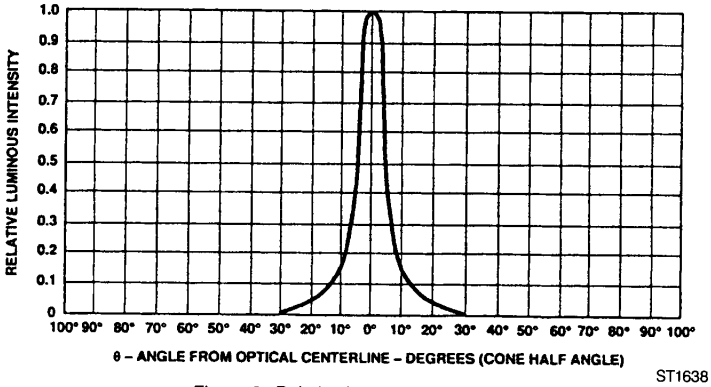

Figure 6. Relative Luminous Intensisty vs. Angular Displacement

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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.