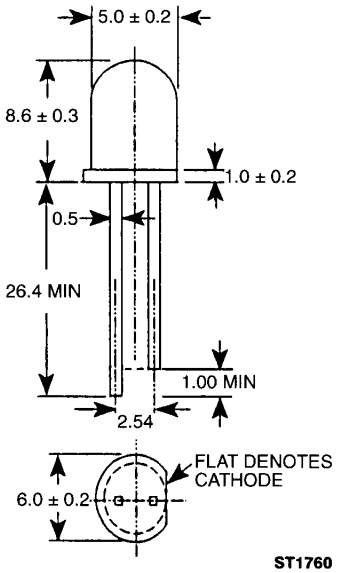
FAIRCHILD
SEMICONDUCTOR™

SUPER BRIGHT T-1¾ (5 mm) LED LAMPS

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

PACKAGE DIMENSIONS



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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_A = 25°C Unless Otherwise Specified)

DC forward current (I_f)	40 mA
Operating temperature range	−40°C to +85°
Storage temperature range	−40°C to +100°C
Lead soldering time (at 1/16 inch from bottom of lamp)	5 seconds @ 260°C
Peak forward current (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)

PARAMETER	MIN.	TYP.	MAX.	UNITS	TEST CONDITIONS
Luminous intensity					
MV8102	250	370		mcd	I_F=20 mA
MV8103	630	940		mcd	I_F=20 mA
MV8104	1000	1500		mcd	I_F=20 mA
Forward voltage	1.5	1.7	2.4	V	I_F=20 mA
Peak wavelength		660		nm	I_F=20 mA
Spectral line half width		40		nm	I_F=20 mA
Reverse breakdown voltage		5		V	I_R=10 μA
Viewing angle		20		degree	I_F=20 mA

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

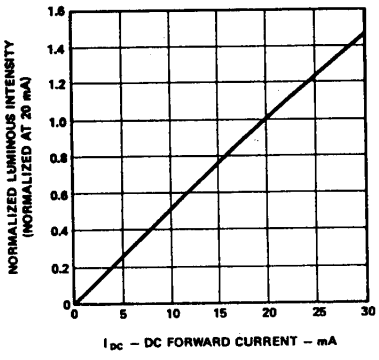

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Fig. 1. Relative Luminous Intensity vs. DC Forward Current

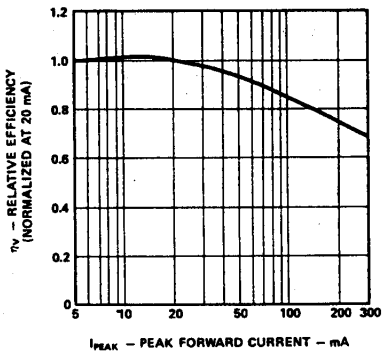

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Fig. 2. Relative Efficiency vs. Peak Foreward Current

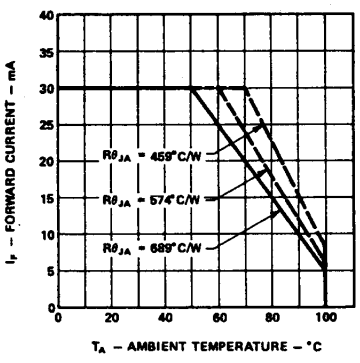

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Fig. 3. Maximum Forward DC Current vs. Ambient Temperature Derating Based On TjMAX = 110°

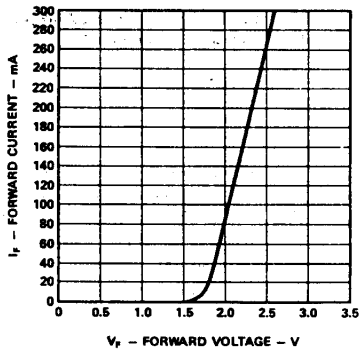

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Fig. 4. Forward Current vs. Forward Voltage

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

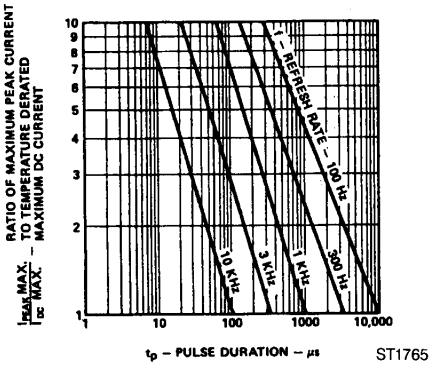

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Fig. 5. Maximum Peak Current vs. Pulse Duration

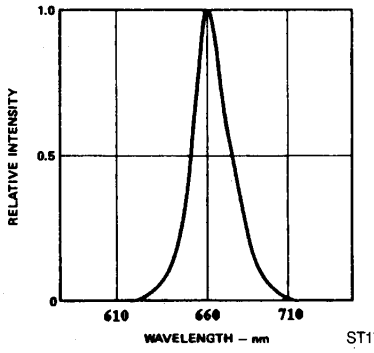

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Fig. 6. Relative Intensity vs. Wavelength

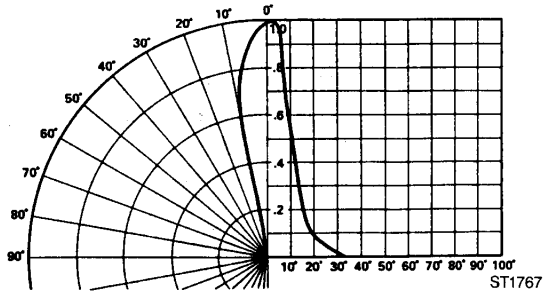

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Fig. 7. Relative Luminous Intensity vs. Angular Displacement

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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.