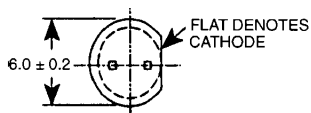
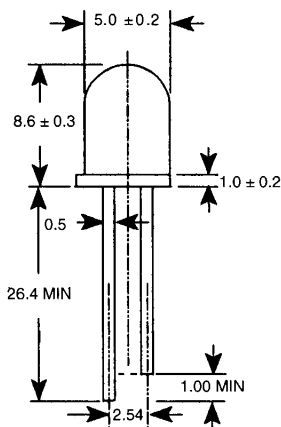




**SUPER BRIGHT T-1³/₄ (5 mm)
LED LAMPS**

**SUPER RED MV8140 CLEAR SUPER RED MV8190 DIFFUSED
SUPER RED MV8141 CLEAR SUPER RED MV8191 DIFFUSED**

PACKAGE DIMENSIONS



ST1683

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 T-1³/₄ super bright LEDs have a moderate 40° or 45° viewing angle. The MV8190/1 are 40° and the MV8140/1 are 45°. All are made with GaAlAs LEDs on a GaAlAs substrate. They are encapsulated in an epoxy package. The MV8140/1 have a water clear lens while the MV8190/1 have a red diffused lens.

FEATURES

- Outstanding material efficiency.
- Popular T-1³/₄ package.
- Low drive current.
- Solid state reliability.
- Super high brightness.
- 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 _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	MV8190	MV8191	MV8140	MV8141	TEST CONDITIONS
Luminous intensity (mcd)					$I_F = 20\text{ mA}$
minimum	63	100	120	250	
typical	100	200	220	370	
maximum					
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)			40		$I_F = 20\text{ mA}$
Reverse breakdown voltage (V_R)			5		$I_F = 10\ \mu\text{A}$
Viewing angle ($^\circ$)	45	45	40	40	$I_F = 20\text{ mA}$

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

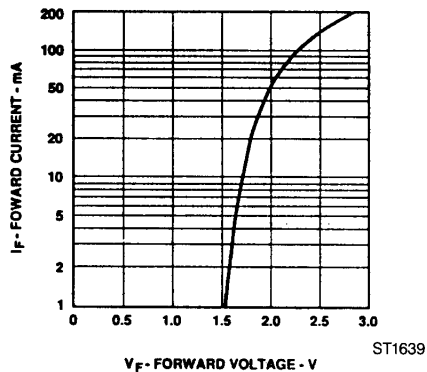


Fig. 1. Forward Current vs. Forward Voltage

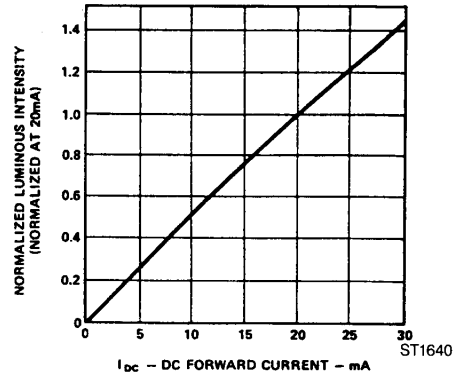


Fig. 2. Relative Luminous Intensity vs. Forward Current

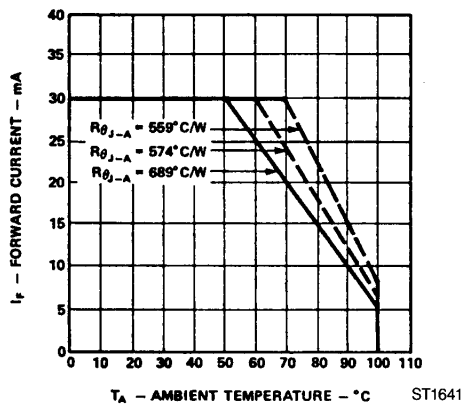


Fig. 3. Maximum Forward DC Current vs. Ambient Temperature Derating based on $T_J \text{ MAX} = 110^\circ$.

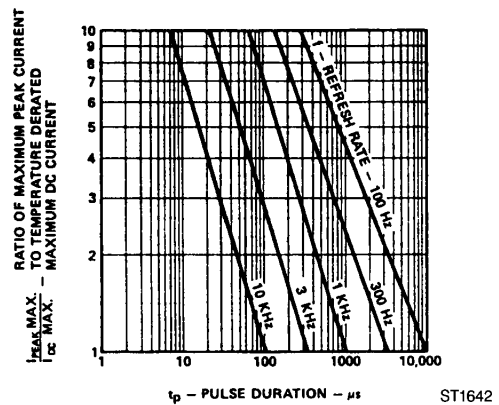


Fig. 4. Maximum Peak Current vs. Pulse Duration

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

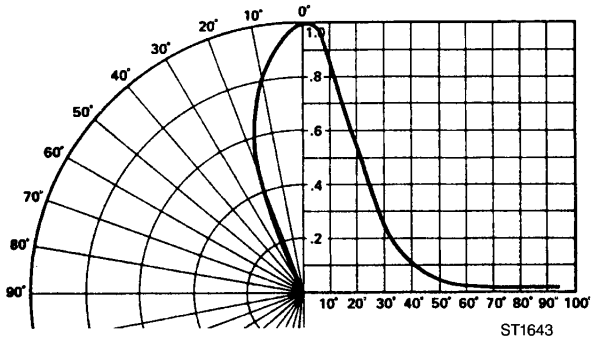


Fig. 5. Relative Luminous Intensity vs. Angular Displacement MV8190/1

ST1643

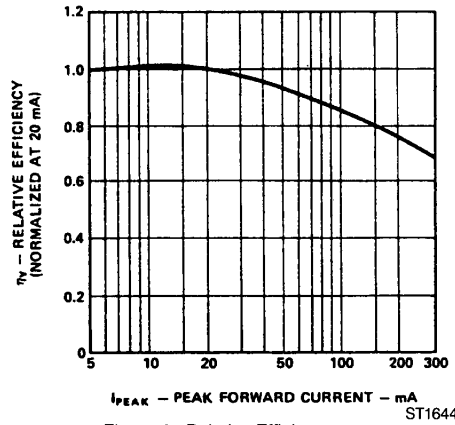


Figure 6. Relative Efficiency vs. Peak Forward Current

ST1644

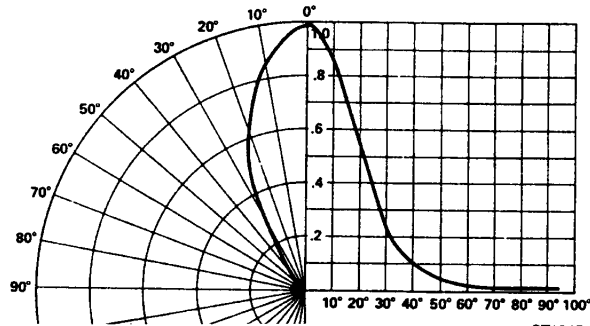


Fig. 7. Relative Luminous Intensity vs. Angular Displacement MV8140/1

ST1645