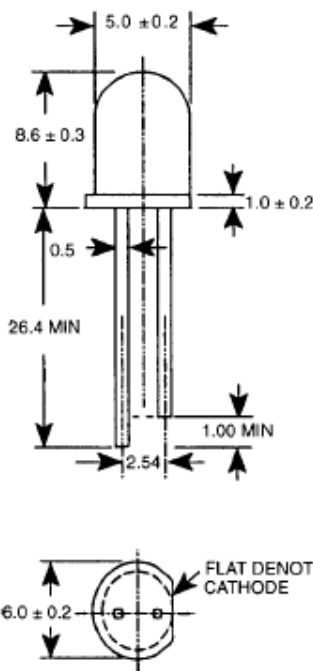




**SUPER BRIGHT T-1¾ (5 mm)
LED LAMPS**

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-1¾ 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-1¾ package.
- Low drive current.
- Solid state reliability.
- Super high brightness.
- 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 $+85^\circ\text{C}$
Storage temperature range	-40°C to $+100^\circ\text{C}$
Lead soldering time (at $\frac{1}{16}$ inch from the bottom of lamp)	5 seconds @ 260°C
Peak forward current (I_p) (at $f=1.0 \text{ KHz}$, Duty factor= 1/10)	200 mA
Power dissipation (P_d)	110 mW
Recommended operating current ($I_{f, \text{Rec}}$)	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_s)			5		$I_f = 10\ \mu\text{A}$
Viewing angle ($^\circ$)	45	45	40	40	$I_f = 20\text{ mA}$

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

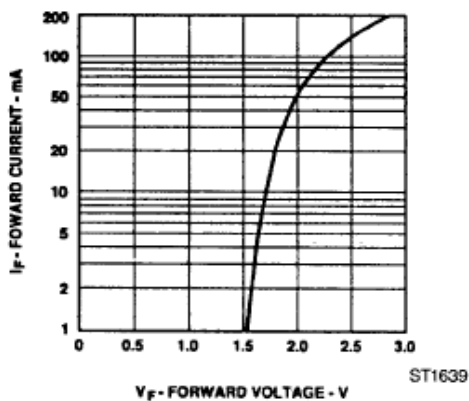


Fig. 1. Forward Current vs. Forward Voltage

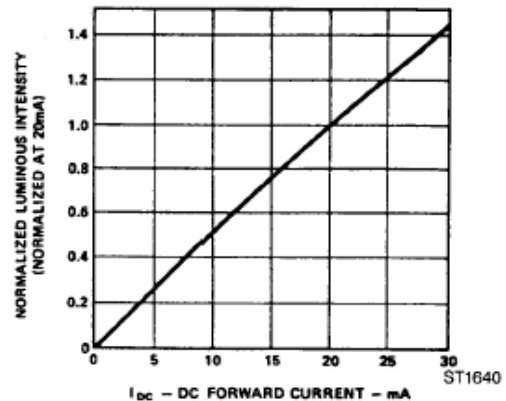


Fig. 2. Relative Luminous Intensity vs. Forward Current

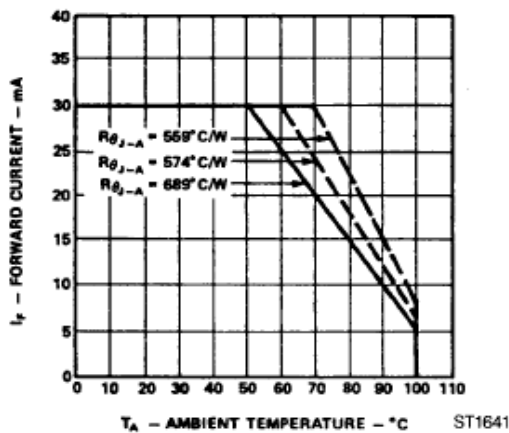


Fig. 3. Maximum Forward DC Current vs. Ambient Temperature Derating based on $T_J \text{ MAX} = 110^\circ$.

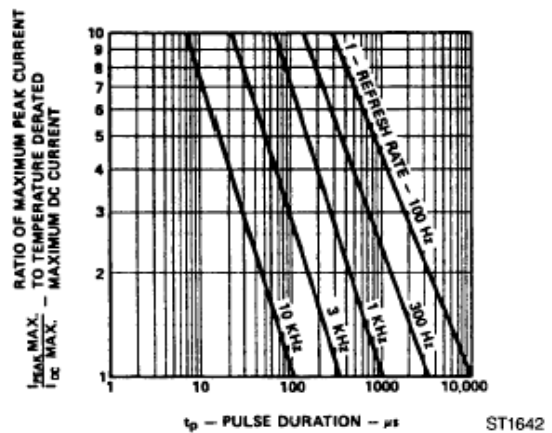


Fig. 4. Maximum Peak Current vs. Pulse Duration



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

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

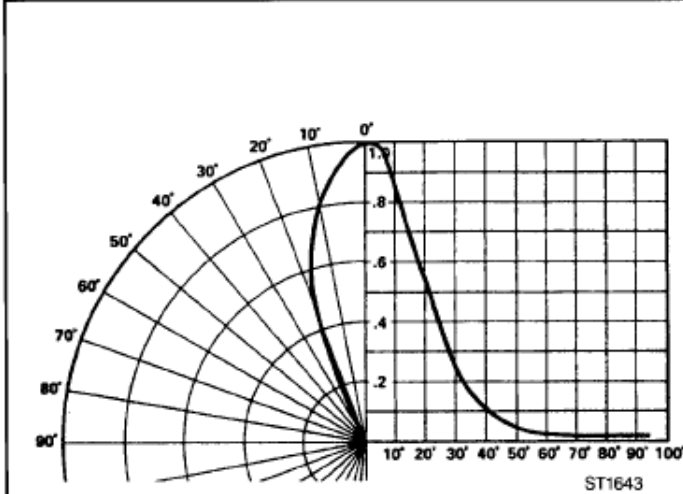


Fig. 5. Relative Luminous Intensity vs. Angular Displacement MV8190/1

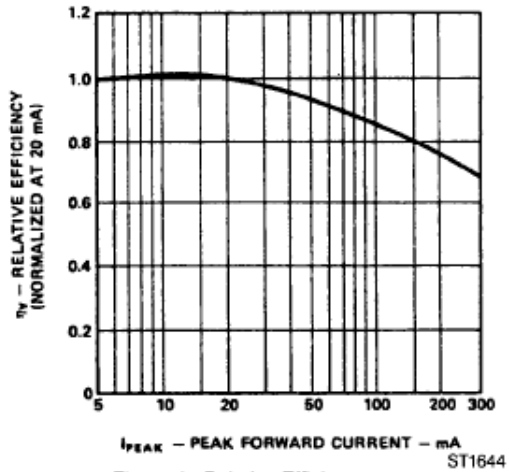


Figure 6. Relative Efficiency vs. Peak Forward Current

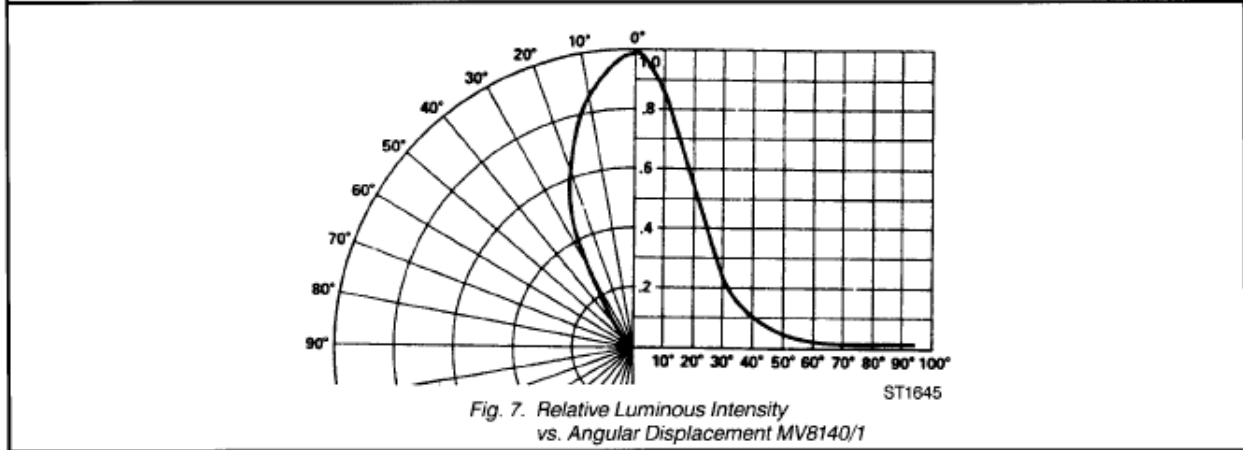


Fig. 7. Relative Luminous Intensity vs. Angular Displacement MV8140/1



SUPER BRIGHT T-1 $\frac{3}{4}$ (5mm) LED LAMPS

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