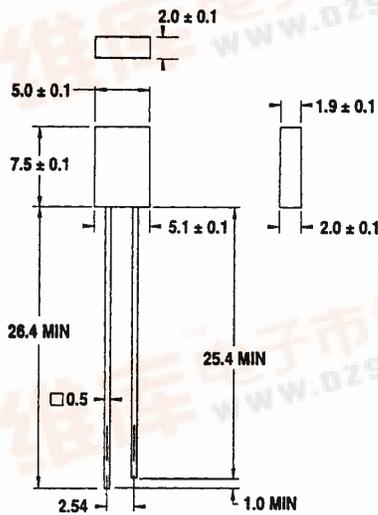


**FAIRCHILD**  
SEMICONDUCTOR™

**RECTANGULAR  
SOLID STATE LAMPS**

**YELLOW MV53123**  
**HIGH EFFICIENCY GREEN MV54123**  
**HIGH EFFICIENCY RED MV57123**

**PACKAGE DIMENSIONS**



C1667A

**NOTES:**

1. ALL DIMENSIONS ARE IN INCHES (MM)
2. TOLERANCES ARE  $\pm 0.10^\circ$  INCHES UNLESS SPECIFIED.
3. AN EPOXY MENISCUS MAY EXTEND ABOUT .40" (1MM) DOWN THE LEADS. THE BASE OF THE PACKAGE IS NOT FLAT.

**DESCRIPTION**

These rectangular LED lamps provide a lighted surface area  $2 \times 5$  mm. The High Efficiency Red and Yellow solid state lamps contain a gallium arsenide phosphide on gallium phosphide light emitting diode. The High Efficiency Green Lamps utilize an improved gallium phosphide light emitting diode.

**FEATURES**

- $2 \times 5$  mm lighted area
- High brightness—typically 4 mcd at 20 mA
- Solid state reliability
- Compact, rugged, lightweight

**APPLICATIONS**

- Legend backlighting
- Illuminated pushbutton
- Panel indicator
- Bargraph meter

<b>ELECTRO-OPTICAL CHARACTERISTICS</b> ( $T_A=25^\circ\text{C}$ Unless Otherwise Specified)					
PARAMETER	TEST COND.	UNITS	MV53123	MV54123	MV57123
Forward voltage ( $V_f$ )					
typ.	$I_f=20\text{ mA}$	V	2.1	2.2	2.0
max.	$I_f=20\text{ mA}$	V	3.0	3.0	3.0
Luminous Intensity					
min.	$I_f=20\text{ mA}$	mcd	1.0	1.0	1.0
typ.	$I_f=20\text{ mA}$	mcd	4.0	4.0	4.0
Peak wavelength					
half width	$I_f=20\text{ mA}$	mcd	585	562	635
		nm	45	30	45
Capacitance					
typ.	$V=0, f=1\text{ MHz}$	pF	45	20	45
Reverse voltage ( $V_R$ )					
min.	$I_R=100\ \mu\text{A}$	V	5.0	5.0	5.0
Viewing angle (total)		degrees	100	100	100

<b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_A=25^\circ\text{C}$ Unless Otherwise Specified)		
	MV53123	MV54123 MV57123
Power dissipation	85 mW	120 mW
Derate linearly from $50^\circ\text{C}$	1.6 mW/ $^\circ\text{C}$	1.6 mW/ $^\circ\text{C}$
Storage and operating temperatures	$-55^\circ\text{C}$ to $+100^\circ\text{C}$	$-55^\circ\text{C}$ to $+100^\circ\text{C}$
Peak forward current (1 $\mu\text{sec}$ pulse width 300 pps)	60 mA	90 mA
Forward current	20 mA	30 mA
Lead soldering time at $260^\circ\text{C}$ (See Note 1)	5 sec.	5 sec.
Reverse voltage	5.0 V	5.0 V

**TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES**  
(25°C Free Air Temperature)

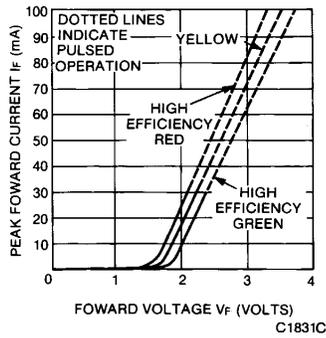


Fig. 1. Forward Current vs. Forward Voltage

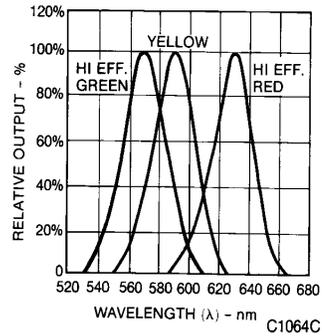


Fig. 2. Spectral Distribution

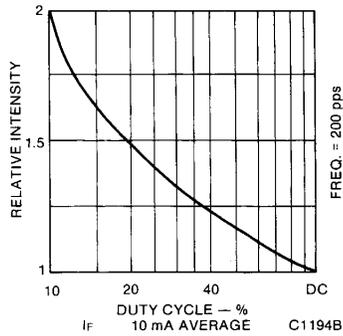


Fig. 3. Luminous Intensity vs. Duty Cycle

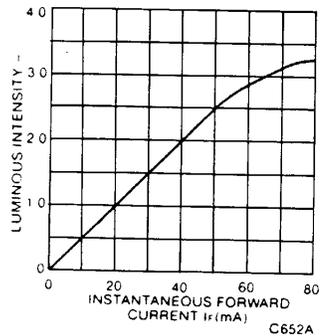


Fig. 4. Luminous Intensity vs. Forward Current

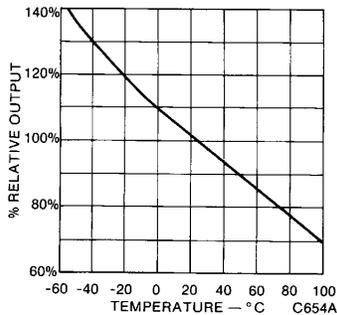


Fig. 5. Output vs. Temperature

**NOTES**

1. The leads of the device immersed in molten solder, heated to a temperature of 260°C, to a point 1/16 inch (1.6 mm) from the body of the device per MIL-S-750, with dwell time of 5 seconds.



## RECTANGULAR SOLID STATE LAMPS

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