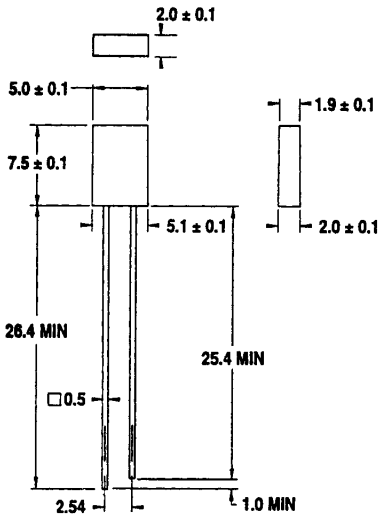
FAIRCHILD
SEMICONDUCTOR™

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 ±010″ 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 × 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 × 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

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

PARAMETER	TEST COND.	UNITS	MV53123	MV54123	MV57123
Forward voltage (V_F)					
typ.	I_F=20 mA	V	2.1	2.2	2.0
max.	I_F=20 mA	V	3.0	3.0	3.0
Luminous Intensity					
min.	I_F=20 mA	mcd	1.0	1.0	1.0
typ.	I_F=20 mA	mcd	4.0	4.0	4.0
Peak wavelength		mcd	585	562	635
half width	I_F=20 mA	nm	45	30	45
Capacitance					
typ.	V=0, f=1 MHz	pF	45	20	45
Reverse voltage (V_R)					
min.	I_R=100 μA	V	5.0	5.0	5.0
Viewing angle (total)		degrees	100	100	100

ABSOLUTE MAXIMUM RATINGS (T_A=25°C Unless Otherwise Specified)

	MV53123	MV54123 MV57123
Power dissipation	85 mW	120 mW
Derate linearly from 50°C	1.6 mW/°C	1.6 mW/°C
Storage and operating temperatures	−55°C to +100°C	−55°C to +100°C
Peak forward current (1 μsec pulse width 300 pps)	60 mA	90 mA
Forward current	20 mA	30 mA
Lead soldering time at 260°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)

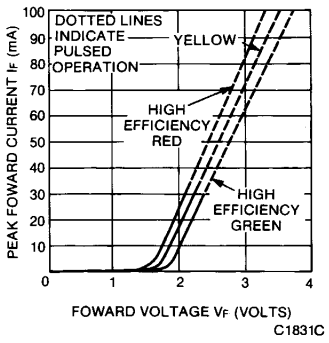

Fig. 1. Forward Current vs. Forward Voltage

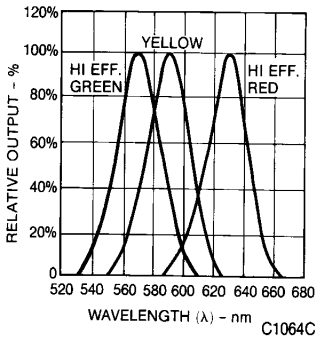

Fig. 2. Spectral Distribution

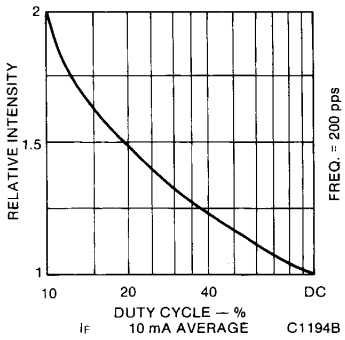

Fig. 3. Luminous Intensity vs. Duty Cycle

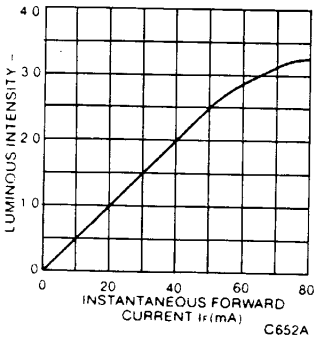

Fig. 4. Luminous Intensity vs. Forward Current

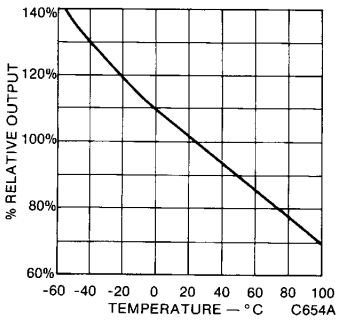

Fig. 5. Output vs. Temperature

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.*

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