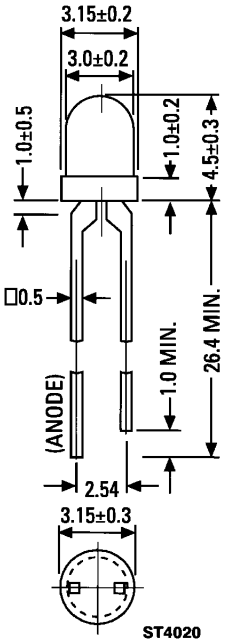
FAIRCHILD
SEMICONDUCTOR™

DIFFUSED T-100
SOLID STATE LAMPS

RED MV50640
YELLOW MV5364X
HIGH EFFICIENCY GREEN MV5464X/HLMP-15X3
HIGH EFFICIENCY RED MV5764X/HLMP-130X

PACKAGE DIMENSIONS



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 solid state indicators offer a variety of color selection. The High Efficiency Red and Yellow devices are made with gallium arsenide phosphide on gallium phosphide. The High Efficiency Green utilizes an improved gallium phosphide light emitting diode. All are encapsulated in epoxy packages with diffused lenses. Their small size, wide viewing angle, and small square leads contribute to their versatility as all-purpose indicators.

FEATURES

- Replacement for the HLMP-1300 and -1500 product series
- 100 mil lead spacing T-1
- High efficiency GaP light
- Versatile mounting on PC board or panel
- Wide viewing angle
- Diffused tinted lens

PHYSICAL CHARACTERISTICS

TYPE	SOURCE COLOR	LENS EFFECT	LUMINOUS INTENSITY at 25°C (mcd) MIN.	TYP.	TEST CONDITIONS
MV50640	Standard Red	Red Diffused	0.5	1.5	I_F=20 mA
MV53640	Yellow	Yellow Diffused	1.0	2.0	I_F=10 mA
MV53641			1.5	3.0	
MV53642			2.5	4.5	
MV54643 (HLMP-1503)	High Efficiency Green	Green Diffused	2.0	5.0	I_F=20 mA
MV54644 (HLMP-1523)			6.0	10.0	
MV57640 (HLMP-1300)	High Efficiency Red	Red Diffused	1.0	2.0	I_F=10 mA
MV57641 (HLMP-1301)			2.0	2.5	
MV57642 (HLMP-1302)			3.0	4.0	

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ELECTRO-OPTICAL CHARACTERISTICS
(25°C Free Air Temperature Unless Otherwise Specified)

PARAMETER		SYMBOL	TEST COND.	UNITS	MV50640* RED	MV5364X YELLOW	MV5464X HI. EFF. GREEN	MV5764X HI. EFF. RED
Forward voltage	typ. max.	V_F	I_F=10 mA	V	1.6 2.0	2.1 3.0	2.2* 3.0*	2.0 3.0
Peak wavelength		λ	I_F=10 mA	nm	660	585	562	635
Spectral line half width			I_F=10 mA	nm	20	35	30	45
Capacitance	typ.	C	V=0, f=1 MHz	pF	23	45	20	45
Reverse voltage	min.	V_{BR}	I_R=100 μA	V	5.0	5.0	5.0	5.0
Viewing angle (total)	typ.	2θ½	See Fig. 3	degrees	90	90	90	90

**I_F=20 mA*

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

	YLW.	STD. RED	HER/HEG
Power dissipation at 25°C ambient	85	120 mW	120 mW
Derate linearly from 50°C	1.6 mW/°C	1.6 mW/°C	1.6 mW/°C
Storage and operating temperatures	−55°C to +100°C	−55°C to +100°C	−55°C to +100°C
Lead soldering time at 260°C (1/16 inch from body)	5 sec.	5 sec.	5 sec.
Continuous forward current at 25°C	20 mA	30 mA	30 mA
Peak forward current (1 μsec pulse, 0.3% duty cycle)	60 mA	1.0 A	90 mA
Reverse voltage	5.0 V	5.0 V	5.0 V

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TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES
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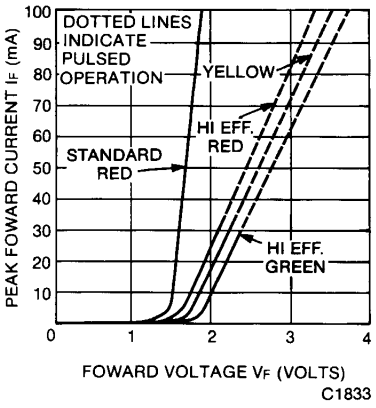

Fig. 1. Forward Current vs. Forward Voltage

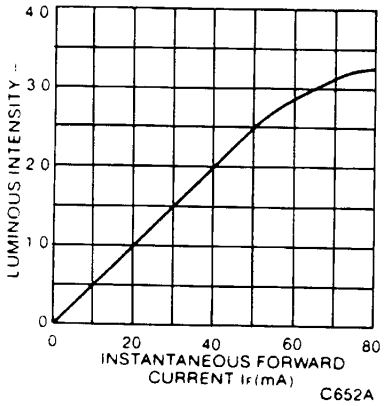

Fig. 2. Luminous Intensity vs. Forward Current

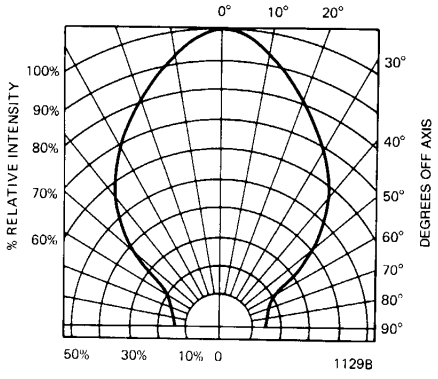

Fig. 3. Spatial Distribution

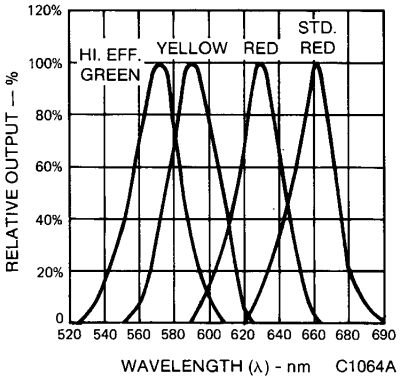

Fig. 4. Spectral Distribution

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