

**YELLOW MV53B**  
**HIGH EFFICIENCY GREEN MV64B**  
**STANDARD RED MV50B**      **HIGH EFFICIENCY RED MV55AB**  
**STANDARD RED MV54B**      **HIGH EFFICIENCY RED MV57B**

**PACKAGE DIMENSIONS**

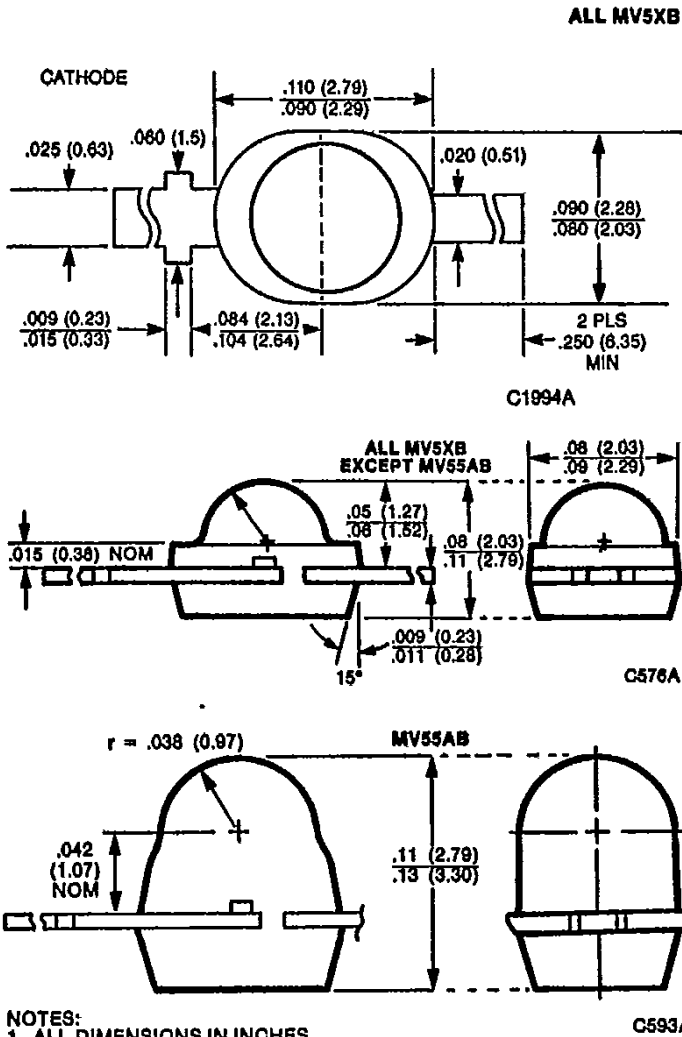
**DESCRIPTION**

The family of MV53B, MV54B, MV57B, and MV64B are non-diffused, tinted subminiature T-3/4 radial lamps with wide viewing angle. The MV50B is Water Clear with wide viewing angle while MV55AB is tinted, non-diffused narrow viewing angle specified at 5 mA.

**FEATURES**

The subminiature LED lamps are intended for high volume, low-cost status indication on PC boards and for backlighting switches and keyboard keys. The lamps are compatible with vapor phase reflow surface mount and conventional soldering switches.

- Subminiature package
- All colors
- Solid state reliability
- Choice of viewing angle



NOTES:  
 1. ALL DIMENSIONS IN INCHES (mm)  
 2. TOLERANCES ARE ± .010 INCH UNLESS SPECIFIED

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**PHYSICAL CHARACTERISTICS**

TYPE	SOURCE COLOR	LENS EFFECT
MV50B	Standard Red	Water Clear
MV54B	Standard Red	Red
MV53B	Yellow	Yellow
MV64B	High Efficiency Green	Green
MV55AB	High Efficiency Red	Red/Narrow
MV57B	High Efficiency Red	Red

**ELECTRO-OPTICAL CHARACTERISTICS** ( $T_A=25^\circ\text{C}$  Unless Otherwise Specified)

PARAMETER	SYMBOL	MV50B	MV53B	MV54B	MV55AB	MV57B	MV64B	UNITS	CONDITIONS
Luminous Intensity (5)	min.	$I_V$	0.5	1.0	0.4	*	1.0	1.0	mcd $I_F=20\text{ mA}$
	typ.		3.0	6.0	3.5	*	8.0	8.0	mcd $I_F=20\text{ mA}$
Forward voltage	max.	$V_F$	2.0	3.0	2.0	*	3.0	3.0	V $I_F=20\text{ mA}$
	typ.		1.65	2.1	1.65	2.2	2.1	2.2	V $I_F=20\text{ mA}$
Peak wavelength	$\lambda_p$		660	585	660	635	635	535	nm
Spectral line halfwidth	typ.		20	35	20	45	35	35	nm
Reverse breakdown voltage	min.	$V_{BR}$	5	5	5	5	5	5	V $I_R=100\ \mu\text{A}$
Total viewing angle (6)	typ.	$2\theta_{1/2}$	80	80	80	40	80	80	degrees

\*MV55AB  $I_V$  min=0.2 mcd/5 mA,  $I_{V\text{ TYP}}=3.0$  mcd/5 mA,  $V_F$  max=2.0 V/5 mA,  $V_{F\text{ TYP}}=1.6$ V/5 mA

**ABSOLUTE MAXIMUM RATINGS** ( $T_A=25^\circ\text{C}$  Unless Otherwise Specified)

PARAMETER	YELLOW HI EFF. RED	STD. RED	HI EFF. GREEN	UNITS	NOTES
	MV53B MV55AB MV57B	MV50B MV54B	MV64B		
Power dissipation	105	105	105	mW	
Average forward current	35 (1)	50 (2)	30 (3)	mA	1,2,3
Peak forward current (1 $\mu\text{s}$ , PW 0.1% DF)	400	1000	90	mA	
Lead soldering time at 230° C	5	5	5	sec	4
Storage and operating temperatures	-55°C to +100°C				

**NOTES**

1. Derate linearly from 50°C at 0.7 mA/°C
2. Derate linearly from 50°C at 1.0 mA/°C
3. Derate linearly from 50°C at 0.6 mA/°C

**TYPICAL ELECTRO-OPTICAL CHARACTERISTIC CURVES**

( $T_A=25^\circ\text{C}$  Unless Otherwise Specified)

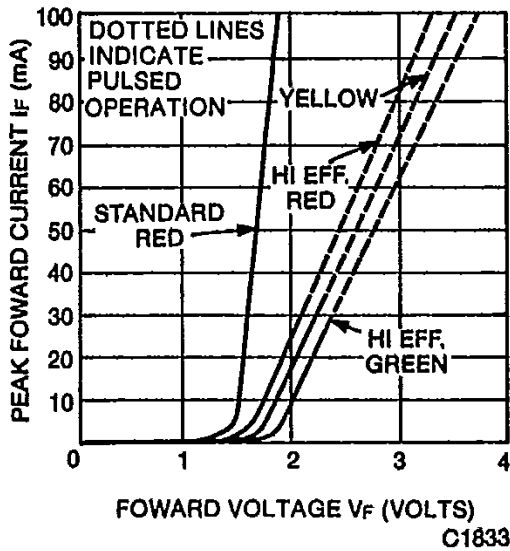


Fig. 1. Forward Current vs. Forward Voltage

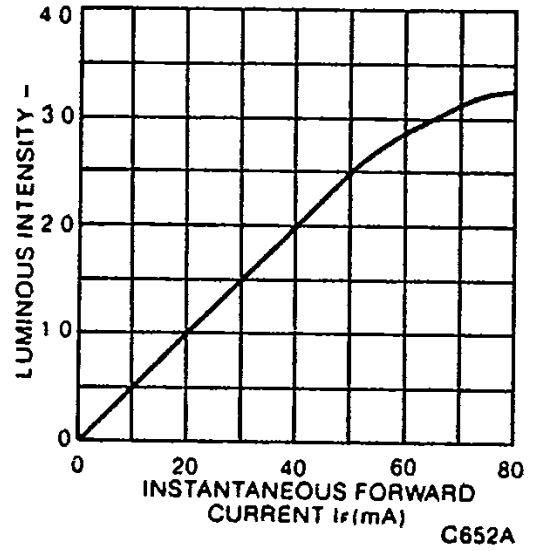


Fig. 2. Luminous Intensity vs. Forward Current

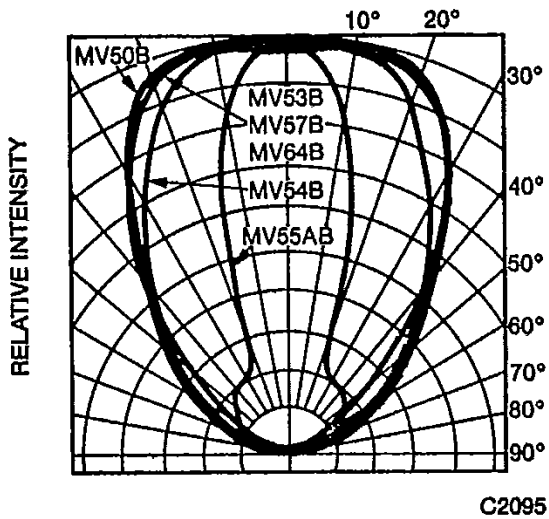


Fig. 3. Spatial Distribution

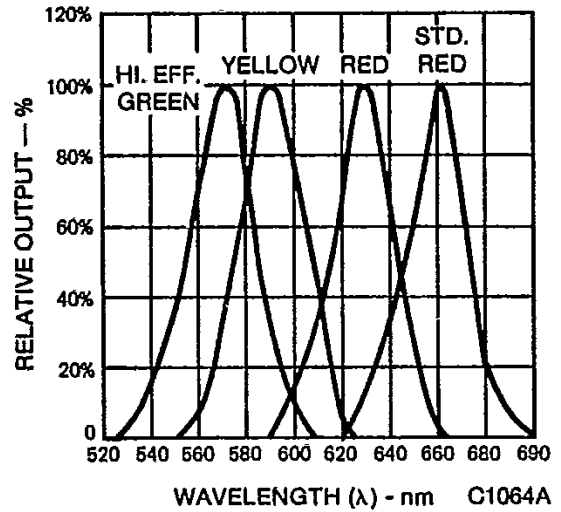


Fig. 4. Spectral Distribution

**NOTES**

4. The leads of the device were immersed in molten solder, heated to a temperature of  $230^\circ\text{C}$ , to a point 1/16 inch (1.6mm) from the body of the device per MIL-S-750, with dwell time of 5 sec.
5. As measured with a Photo Research Corp. "SPECTRA" Microcandela Meter (Model IV-D).
6. The axis of spatial distribution are typically within a  $10^\circ$  cone with reference to the central axis of the device.