

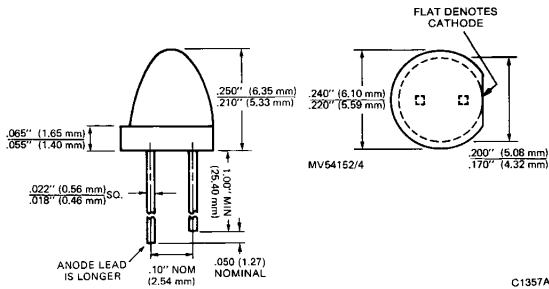


**BULLET PROFILE T-1¾**  
**SOLID STATE LAMPS**

**STANDARD RED MV50152/4**  
**YELLOW MV53152/4**

**HIGH EFFICIENCY GREEN MV54152/4**  
**HIGH EFFICIENCY RED MV57152/4**

**PACKAGE DIMENSIONS**



- NOTES:
1. ALL DIMENSIONS ARE IN INCHES (mm)
  2. TOLERANCES ARE .010 INCH UNLESS SPECIFIED
  3. AN EPOXY MENISCUS MAY EXTEND ABOUT .040" (1 mm) DOWN THE LEADS

**DESCRIPTION**

These solid state indicators offer a variety of lens effects and color availability in a short barrel T-1¾ package. The High Efficiency Red, High Efficiency Green and Yellow devices are made with gallium phosphide.

**FEATURES**

- High intensity light source with two lens effects
- Red, High Efficiency Red, High Efficiency Red, High Efficiency Green and Yellow colors available
- Versatile mounting on PC board or panel
- Long life—solid state reliability
- Low power requirements
- Compact, rugged, lightweight
- High efficiency
- MV5X154 diffused, MV5X152 non-diffused
- Short T-1¾ size

PHYSICAL CHARACTERISTICS			
TYPE	SOURCE COLOR	LENS COLOR	LENS EFFECT
MV50152	Standard Red	Red Clear	Point Source
MV50154	Standard red	Red Lightly Diffused	Soft Point Source
MV53152	Yellow	Amber Clear	Point Source
MV53154	Yellow	Amber Lightly Diffused	Soft Point Source
MV54152	High Efficiency Green	Green Clear	Point Source
MV54154	High Efficiency Green	Green Lightly Diffused	Soft Point Source
MV57152	High Efficiency Red	Orange Clear	Point Source
MV57154	High Efficiency Red	Orange Lightly Diffused	Soft Point Source

ELECTRO-OPTICAL CHARACTERISTICS (T <sub>A</sub> =25°C Unless Otherwise Specified)												
PARAMETER	SYMBOL	TEST COND.		UNITS	50152	50154	53152	53154	54152	54154	57152	57154
Forward voltage	typ.	V <sub>f</sub>	I <sub>f</sub> =10 mA	V	1.6	1.6	2.1	2.1	2.2	2.2	2.0	2.0
	max.		I <sub>f</sub> =10 mA		2.0	2.0	3.0	3.0	3.0	3.0	3.0	3.0
Luminous Intensity	min.	I <sub>v</sub>	I <sub>f</sub> =10 mA	mcd	0.6	0.4	3.0	1.5	2.5	2.0	4.0	2.0
	typ.		I <sub>f</sub> =10 mA	mcd	2.0	1.5	10.	8.0	15.0	12.0	10.0	8.0
Peak wavelength		λ <sub>p</sub>	I <sub>f</sub> =10 mA	nm	660	660	585	585	565	565	630	630
Spectral line half width			I <sub>f</sub> =10 mA	nm	20	20	35	35	35	35	45	45
Capacitance	typ.	C	V=0	pF	30	30	45	45	20	20	45	45
Reverse voltage	min.	V <sub>BR</sub>	I <sub>R</sub> =100 μA	V	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Reverse current	max.	I <sub>R</sub>	V <sub>R</sub> =5.0 V	μA	100	100	100	100	100	100	100	100
Viewing angle (total) (See Fig. 2)		2θ <sub>1/2</sub>		degrees	45	50	45	50	45	50	45	50

<b>ABSOLUTE MAXIMUM RATINGS</b> ( $T_A=25^{\circ}\text{C}$ Unless Otherwise Specified)	
Power dissipation (MV5015X) .....	180 mW
Power dissipation (MV5315X=85 mW) .....	105 mW
Derate linearly from $25^{\circ}\text{C}$ (MV5015X) .....	$2.0\text{ mW}/^{\circ}\text{C}$
Derate linearly from $25^{\circ}\text{C}$ .....	$1.14\text{ mW}/^{\circ}\text{C}$
Storage and operating temperatures .....	$-55^{\circ}\text{C}$ to $+100^{\circ}\text{C}$
Lead soldering time at $260^{\circ}\text{C}$ (See Note 2) .....	5 sec.
Continuous forward current (MV5015X) .....	100 mA
Continuous forward current (MV5315X=20 mA) .....	35 mA
Peak forward current (1 $\mu\text{sec}$ pulse, 0.3% duty cycle) (MV5415X=90 mA) (MV5315X=60 mA) .....	1.0 A
Reverse voltage .....	5.0 V

<b>NOTES</b>
1. The axis of spatial distribution are typically within a $10^{\circ}$ cone with reference to the central axis of the device.
2. The leads of the device were immersed in molten solder at $260^{\circ}\text{C}$ to a point 1/16 inch (1.6 mm) from the body of the device per MIL-Sd-750, with a dwell time of 5 seconds.

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

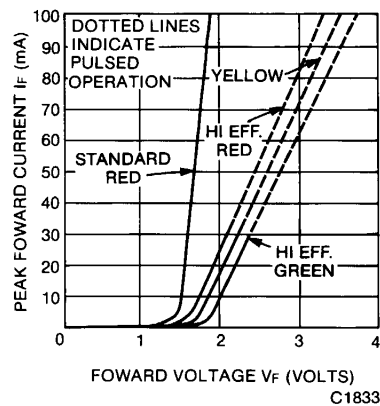


Fig. 1. Forward Current vs. Forward Voltage

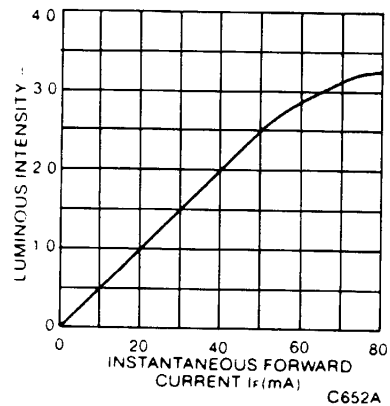


Fig. 2. Luminous Intensity vs. Forward Current

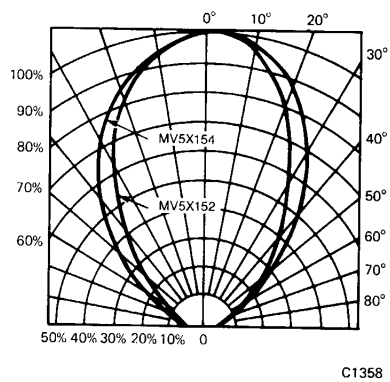


Fig. 3. Spatial Distribution (Note 1)

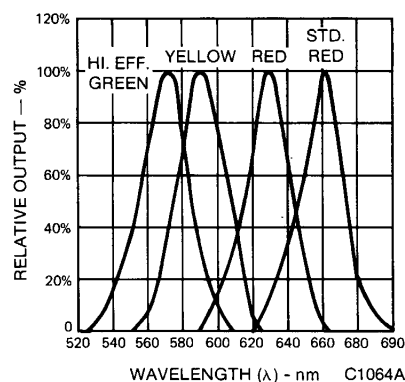


Fig. 4. Spectral Distribution



## BULLET PROFILE T-1 3/4 SOLID STATE LAMPS

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