

# Small, two-color LEDs (2 × 5 mm)

## SPB-25 Series

The SPB-25 series are two-color, rectangular LEDs with an emission size of 2 × 5 mm and a high luminous efficiency. Red and green elements are built into a single package, and these LEDs are suitable for a wide range of uses.

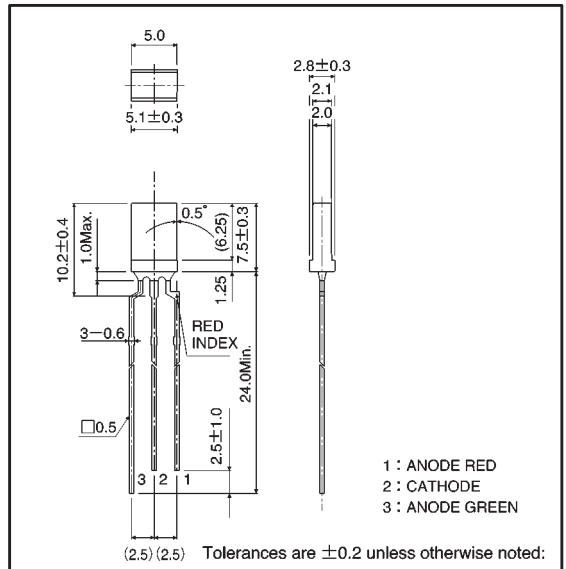
### ●Features

- 1) Two-color emission : red and green.
- 2) Uniform light emission with no irregularities.
- 3) Rectangular shape and planar light emission.
- 4) Milky white lens.
- 5) High reliability.

### ●Selection guide

Emitting color	Red / Green
Lens	
Milky white	SPB-25MVW

### ●External dimensions (Units: mm)



### ●Absolute maximum ratings (Ta = 25 °C)

Parameter	Symbol	Red	Green	Unit
Power dissipation	P <sub>D</sub>	60	75	mW
Forward current	I <sub>F</sub>	20	25	mA
Peak forward current	I <sub>FP</sub>	60*	60*	mA
Reverse voltage	V <sub>R</sub>	3	3	V
Operating temperature	T <sub>opr</sub>	-25 ~ +85		°C
Storage temperature	T <sub>stg</sub>	-30 ~ +100		°C
Soldering temperature	—	260°C 5 seconds maximum		—

\* Pulse width 1ms Duty 1 / 5

## ●Electrical and optical characteristics (Ta = 25°C)

Parameter	Symbol	Conditions	Red			Green			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Forward voltage	$V_F$	$I_F=10\text{mA}$	—	2.0	3.0	—	2.1	3.0	V
Reverse current	$I_R$	$V_R=3\text{V}$	—	—	10	—	—	10	$\mu\text{A}$
Peak wavelength	$\lambda_P$	$I_F=10\text{mA}$	—	650	—	—	563	—	nm
Spectral line half width	$\Delta\lambda$	$I_F=10\text{mA}$	—	40	—	—	40	—	nm
Viewing angle	$2\theta_{1/2}$	Diffused	—	100	—	—	100	—	deg
Luminous intensity	$I_v$	$I_F=10\text{mA}$	0.36	1.0	—	0.36	1.0	—	mcd

## ●Luminous intensity vs. wavelength

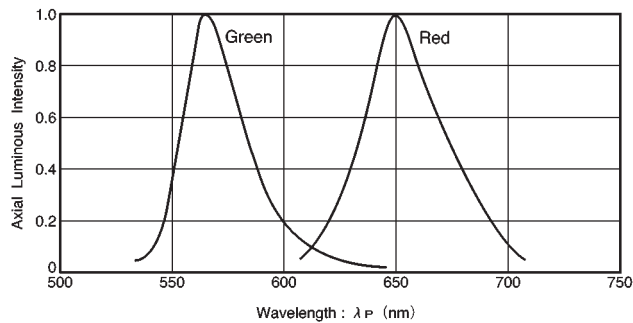


Fig. 1

## ●Directional pattern

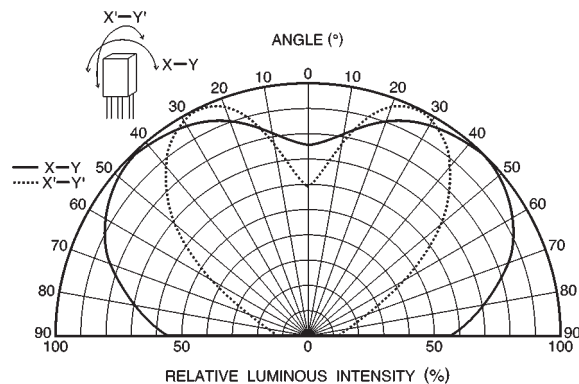


Fig. 2

●Electrical characteristic curves (red, green)

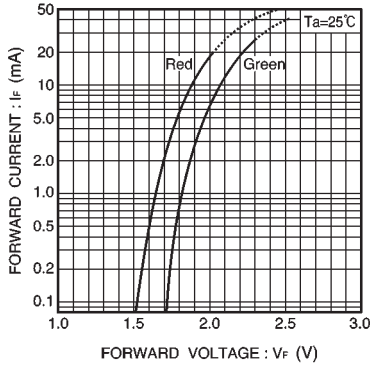


Fig. 3 Forward current vs. forward voltage

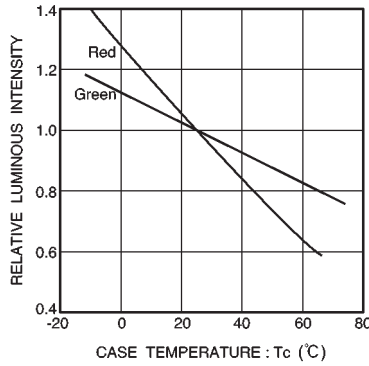


Fig. 4 Luminous intensity vs. case temperature

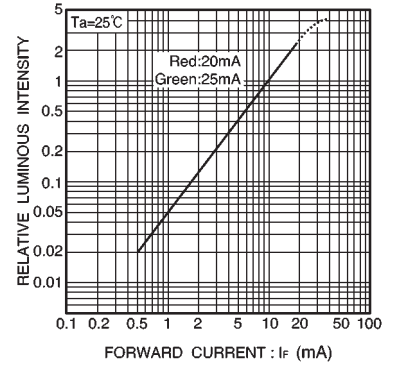


Fig. 5 Luminous intensity vs. forward current

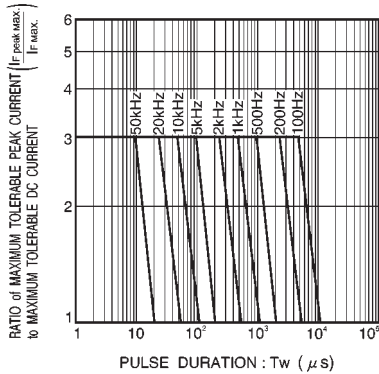


Fig. 6 Maximum tolerable peak current vs. pulse duration (red)

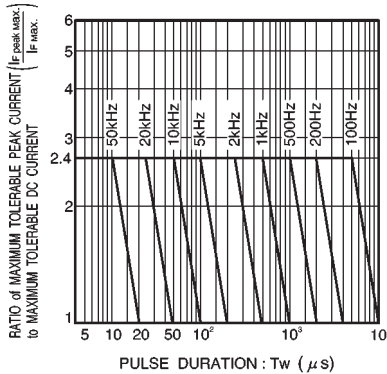


Fig. 7 Maximum tolerable peak current vs. pulse duration (green)

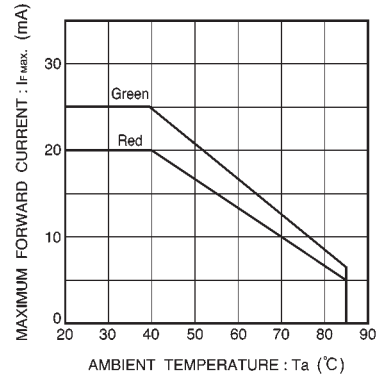


Fig. 8 Maximum forward current vs. ambient temperature