

Two-color chip LEDs, super small type

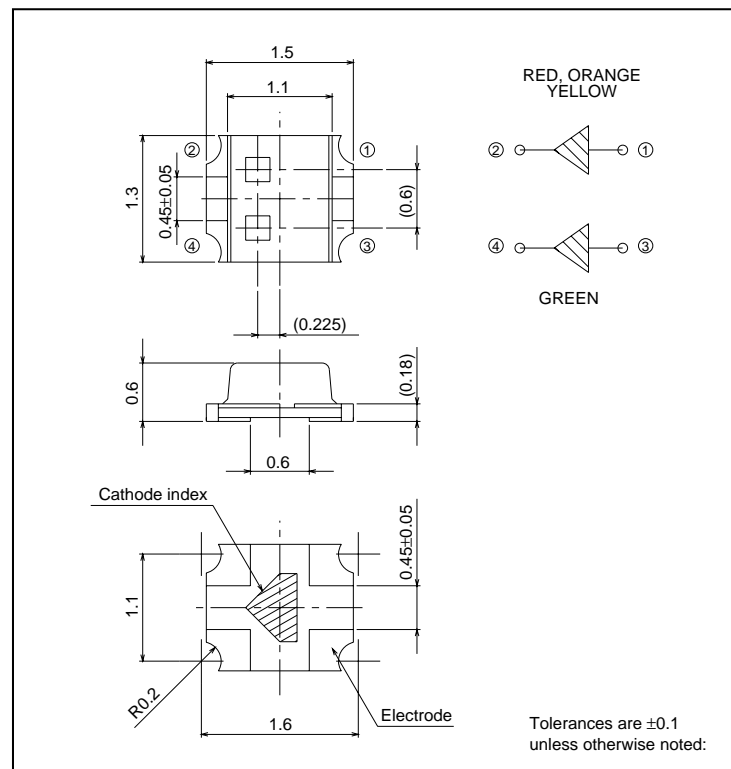
SML-521 Series

The SML-521 Series are two-color chip LEDs, super small type. Due to its small size in dimension and thickness it is suitable for portable electricity which mainly works under battery. Also for high density mounting.

●Features

- 1) 1.5×1.3mm Super small package
- 2) Thickness of only 0.6mm
- 3) Green-red, green-orange green-yellow 3types are available

●External dimensions (Units : mm)



●Selection guide

Emitting color Lens	Red/Green	Orange/Green	Yellow/Green
	Milky white	SML-521MUW	SML-521MDW

Light Emitting Diodes

● Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits		Unit
		M	U, D, Y	
Power dissipation	P _D	70	50	mW
Forward current	I _F	25	20	mA
Peak forward current	I _{FP}	60		mA*
Reverse voltage	V _R	4		V
Operating temperature	T _{opr}	-30~+85		°C
Storage temperature	T _{stg}	-40~+85		°C

*Pulse width 1ms Duty 1/5

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

Parameter Type	Color	Forward voltage		Reverse current		Luminous intensity			Peak wavelength		Spectral line half width	
		V _F (V)		I _R (μA) Max.	Cond. V _R (V)	I _v (mcd)		λ _P (nm) Typ.	Cond. I _F (mA)	Δλ (nm)		
		Typ.	Max.			Min.	Typ.			Typ.	Cond. I _F (mA)	
SML-521MUW	Red	1.9	2.5	20	100	4	22	40	20	630	20	18
	Green	2.2	2.8				5.6	16		570		40
SML-521MDW	Orange	1.9	2.5	20	100	4	22	40	20	611	20	16
	Green	2.2	2.8				5.6	16		570		40
SML-521MYW	Yellow	1.9	2.5	20	100	4	22	40	20	590	20	15
	Green	2.2	2.8				5.6	16		570		40

● Directional pattern

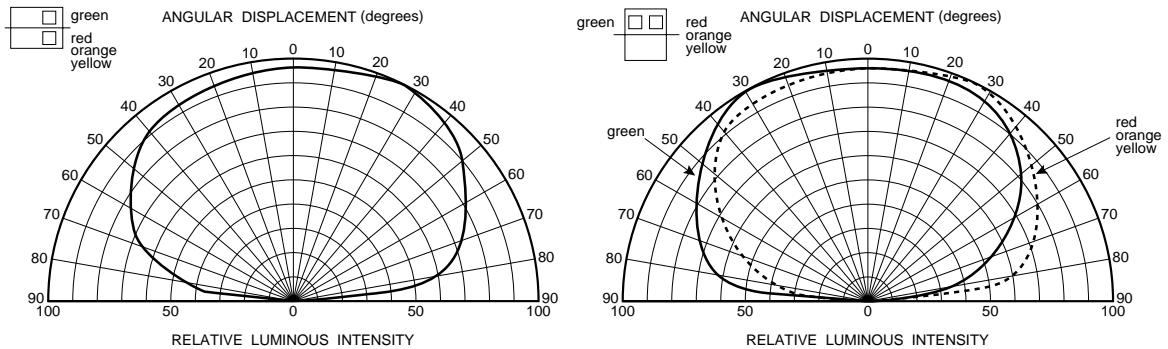


Fig.1 Directional pattern

Light Emitting Diodes

●Electrical characteristic curves 1 (RED / ORANGE / YELLOW)

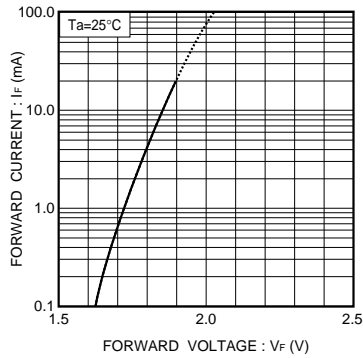


Fig.2 Forward current vs. forward voltage

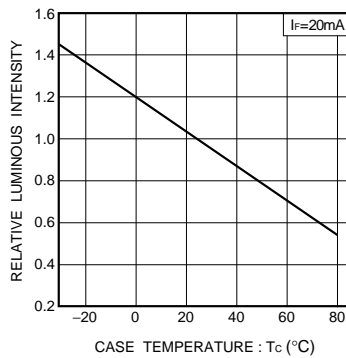


Fig.3 Luminous intensity vs. case temperature

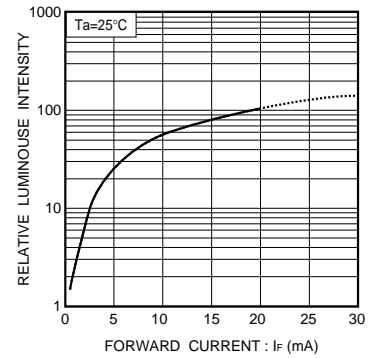


Fig.4 Luminous intensity vs. forward current

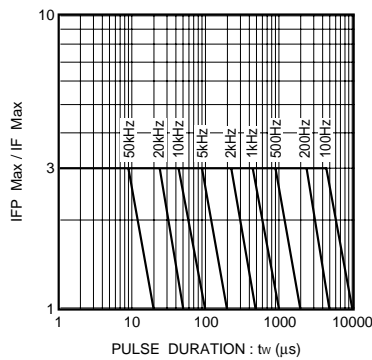


Fig.5 Maximum tolerable peak current vs. pulse duration

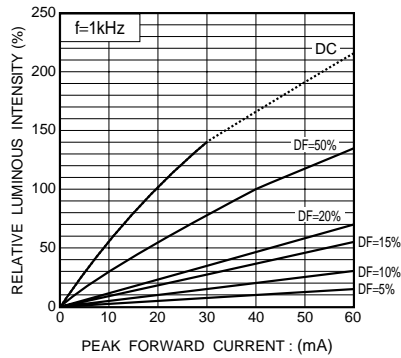


Fig.6 Luminous intensity vs. peak forward current

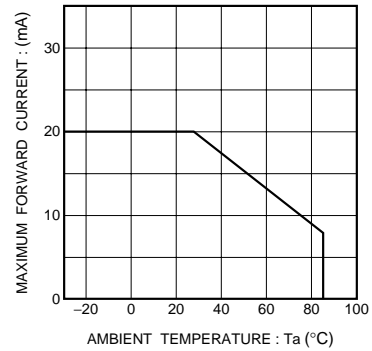


Fig.7 Derating

●Electrical characteristic curves 2 (GREEN)

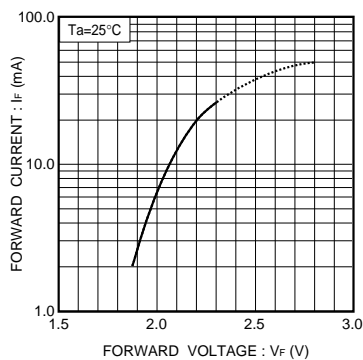


Fig.8 Forward current vs. forward voltage

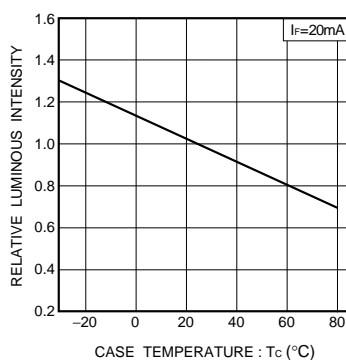


Fig.9 Luminous intensity vs. case temperature

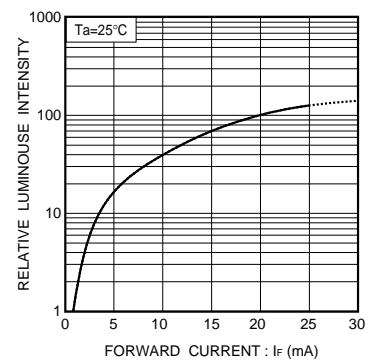


Fig.10 Luminous intensity vs. forward current

Light Emitting Diodes

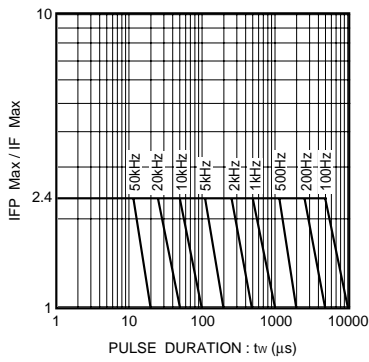


Fig.11 Maximum tolerable peak current vs. pulse duration

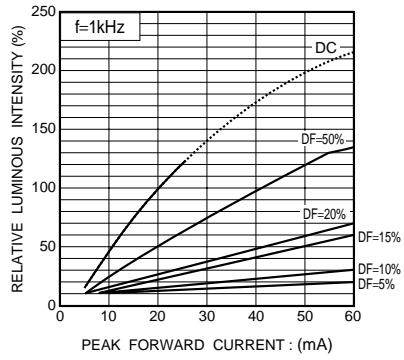


Fig.12 Luminous intensity vs. peak forward current

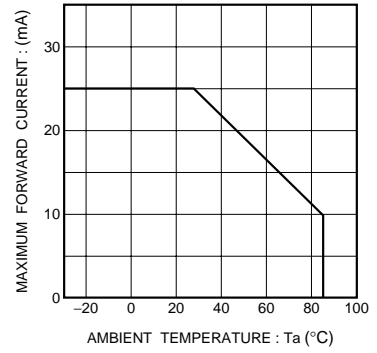


Fig.13 Derating