

Chip LEDs with low power consumption

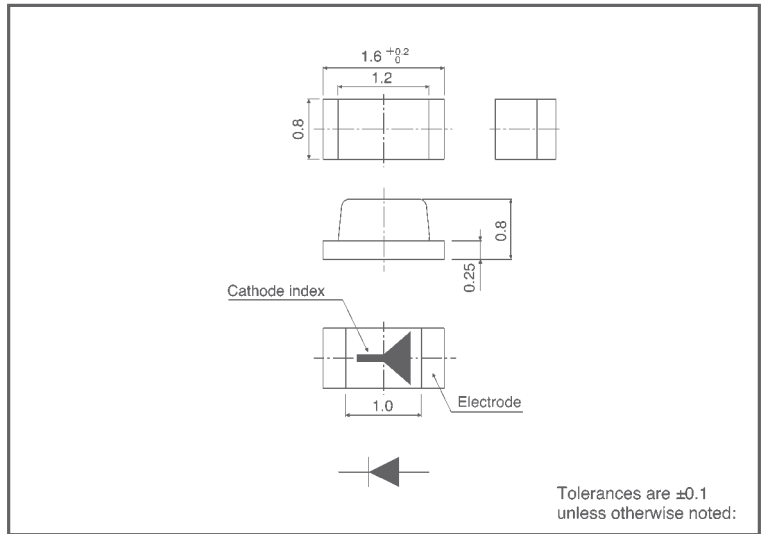
SML-311 Series

The SML-311 series are low power consumption, chip LEDs equipped with an AlGaInP chip. These LEDs are compact and leadless to allow a higher mounting density, and low power consumption makes them an ideal light source for battery driven products.

●Features

- 1) Three colors : red, orange and yellow.
- 2) Low power consumption chip LEDs equipped with an AlGaInP chip.
- 3) Six times the brightness of previous GaAsP chips at $I_F = 2 \text{ mA}$.
- 4) Compact $1.6\text{mm} \times 0.8\text{mm}$ surface mount package.
- 5) Thin 0.8mm package.
- 6) Ideal light source for battery driven products.

●External dimensions (Units: mm)



●Selection guide

Emitting color Lens	Red	Orange	Yellow
	Transparent clear	SML-311UT	SML-311DT

●Absolute maximum ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Red	Orange	Yellow	Unit
		SML-311UT	SML-311DT	SML-311YT	
Power dissipation	P_D	22	22	22	mW
Forward current	I_F	10	10	10	mA
Peak forward current	I_{FP}	60	60	60	mA*
Reverse voltage	V_R	4	4	4	V
Operating temperature	T_{opr}	-30~+85			$^\circ\text{C}$
Storage temperature	T_{stg}	-40~+85			$^\circ\text{C}$

* 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)		Cond.	I _R (μA)	Cond.	I _v (mcd)		λ _P (nm)	Cond.	Δλ (nm)	Cond.		
		Typ.	Max.	I _F (mA)	Max.	V _R (V)	Min.	Typ.	I _F (mA)	Typ.	I _F (mA)	Typ.	I _F (mA)	
SML-311	UT	Red	1.8	2.2	2	100	4	0.9	2.5	2	630	2	18	2
	DT	Orange	1.8	2.2	2	100	4	0.9	2.5	2	611	2	16	2
	YT	Yellow	1.8	2.2	2	100	4	0.56	1.6	2	590	2	15	2

●Directional pattern

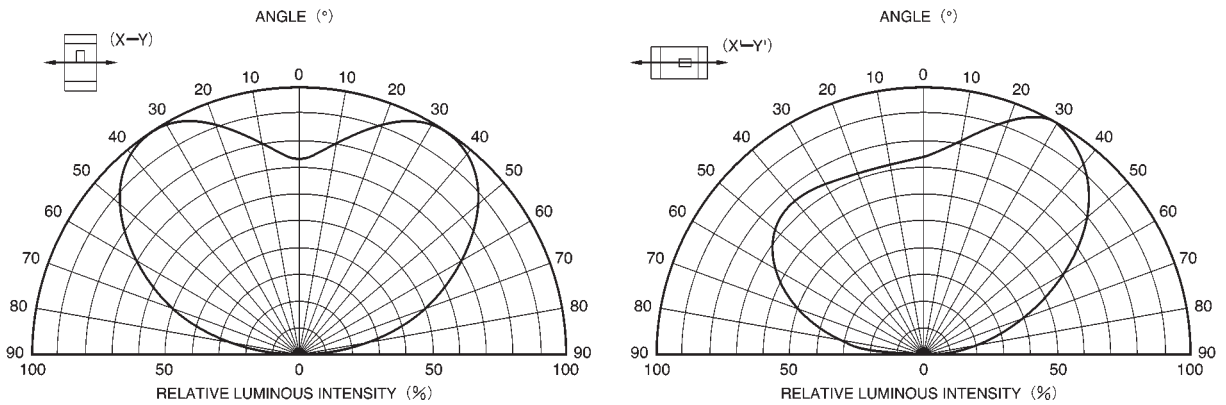


Fig. 1 Directional pattern

● Electrical characteristic curves (SML-311UT, DT, YT)

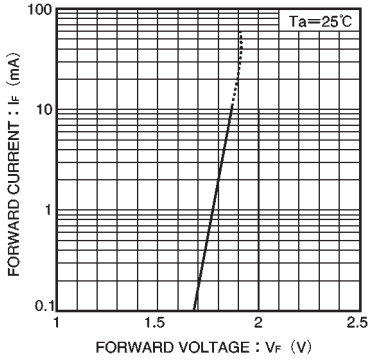


Fig. 2 Forward current vs. forward voltage

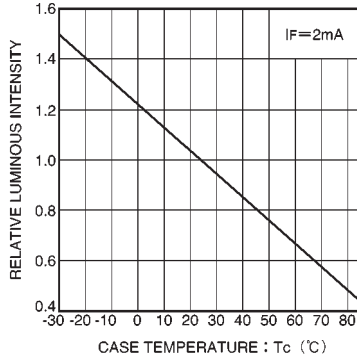


Fig. 3 Luminous intensity vs. case temperature

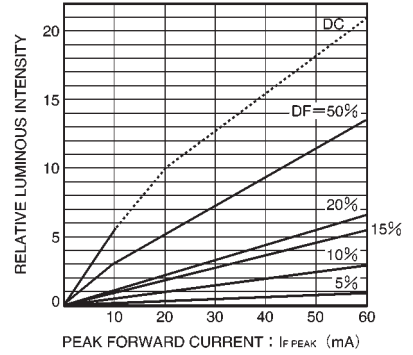


Fig. 4 Luminous intensity vs. peak forward current

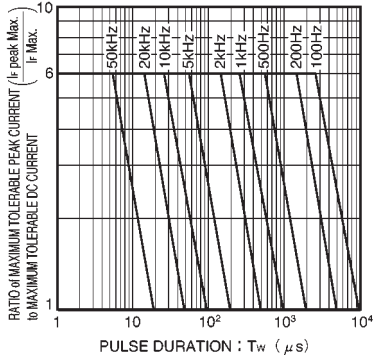


Fig. 5 Maximum tolerable peak current vs. pulse duration

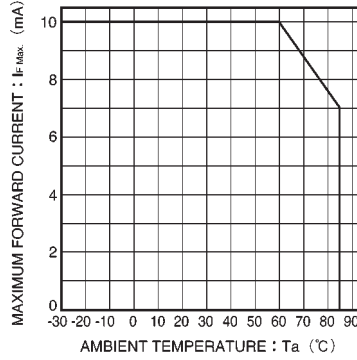


Fig. 6 Maximum forward current vs. ambient temperature