

Chip LEDs with low power consumption

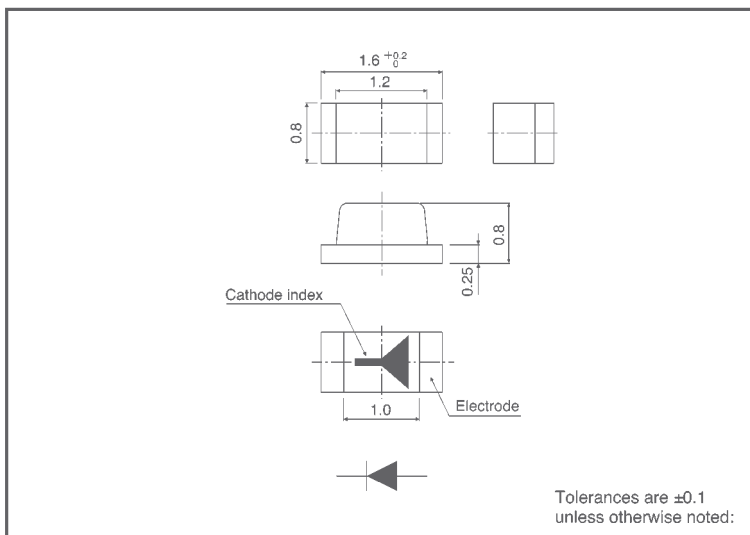
SML-311 Series

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	Red	Orange	Yellow
Lens			
Transparent clear	SML-311UT	SML-311DT	SML-311YT

●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}	$-30 \sim +85$			$^\circ\text{C}$
Storage temperature	T_{stg}	$-40 \sim +85$			$^\circ\text{C}$

* 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	
			VF (V)		Cond.	IR (μA)	Cond.	IV (mcd)		Cond.	λP (nm)	Cond.	Δλ (nm)	Cond.
			Typ.	Max.	IF (mA)	Max.	VR (V)	Min.	Typ	IF (mA)	Typ.	IF (mA)	Typ.	IF (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

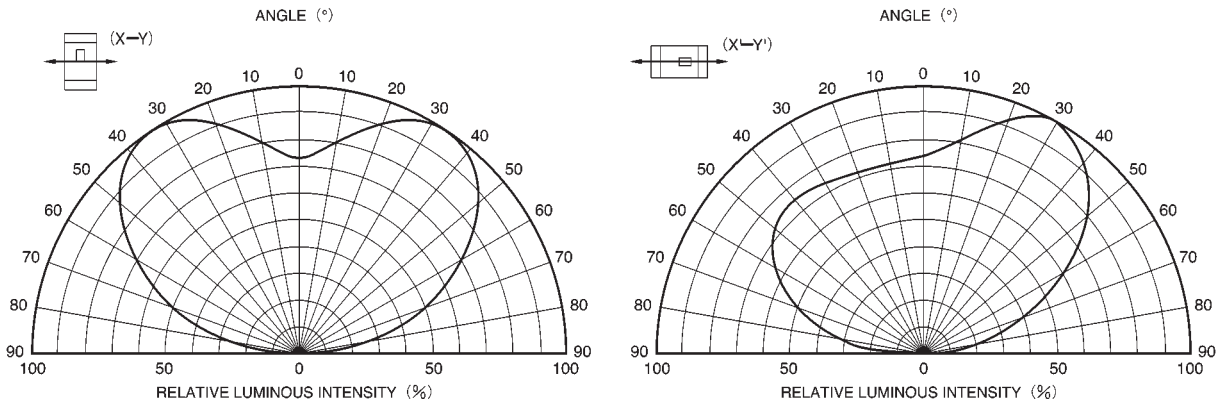


Fig. 1 Directional pattern

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

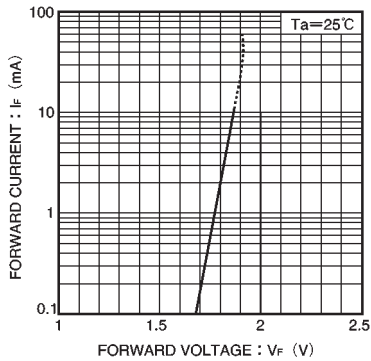


Fig. 2 Forward current vs. forward voltage

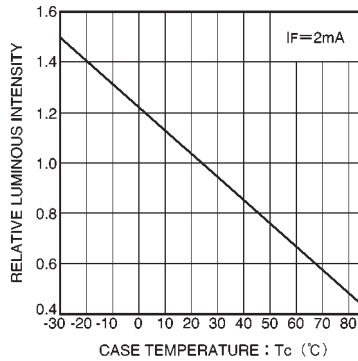


Fig. 3 Luminous intensity vs. case temperature

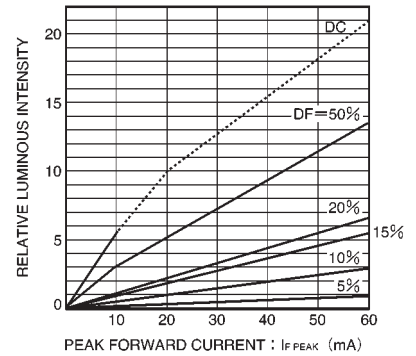


Fig. 4 Luminous intensity vs. peak forward current

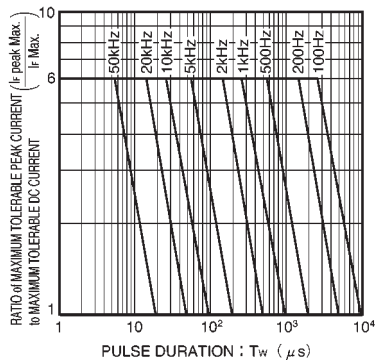


Fig. 5 Maximum tolerable peak current vs. pulse duration

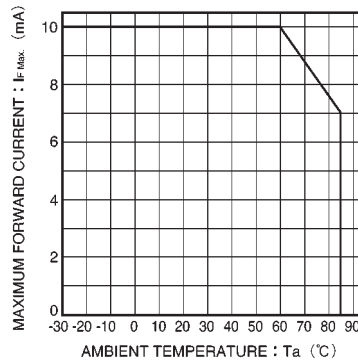


Fig. 6 Maximum forward current vs. ambient temperature