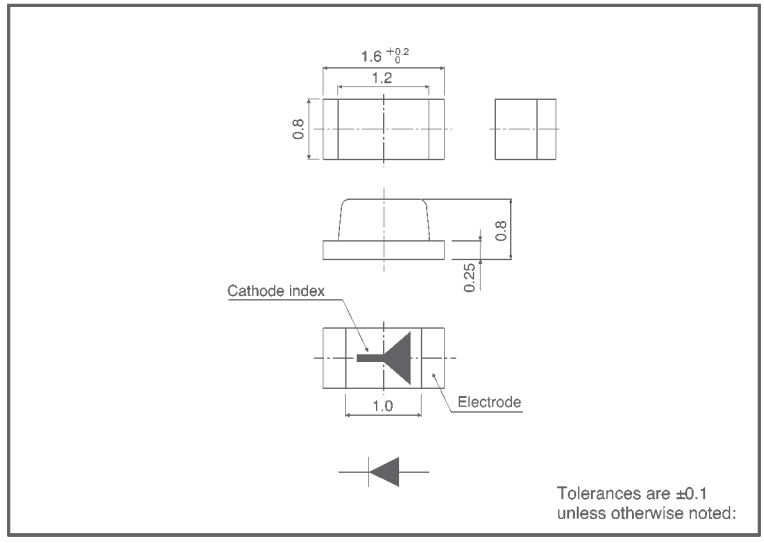
Chip LEDs with low power consumption

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.

●External dimensions (Units: mm)



●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 mA.
4) Compact 1.6mm × 0.8mm surface mount package.
5) Thin 0.8mm package.
6) Ideal light source for battery driven products.

●Selection guide

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

●Absolute maximum ratings (Ta = 25°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	Topr	−30～+85			℃
Storage temperature	Tstg	−40～+85			℃

* Pulse width 1ms Duty 1 / 5

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

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)		Cond.	λ_P (nm)	Cond.	$\Delta\lambda$ (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

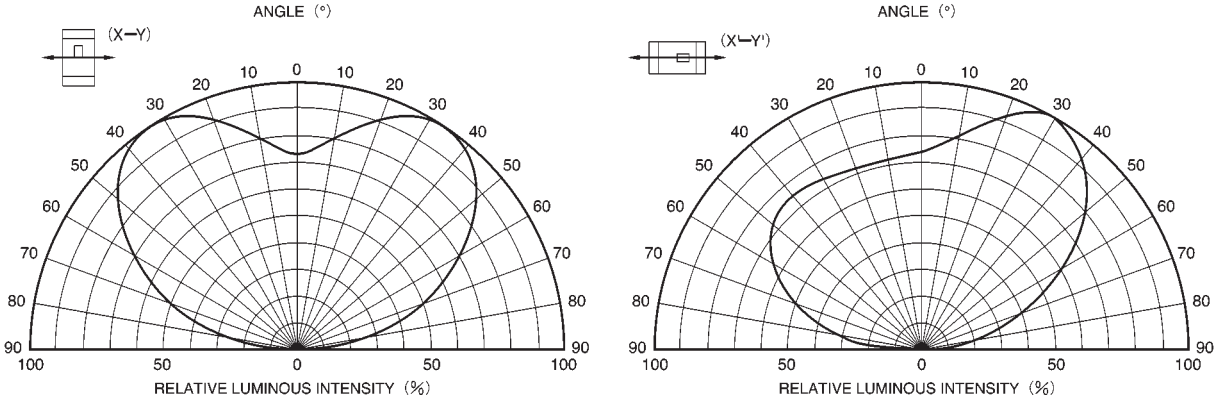


Fig. 1 Directional pattern

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

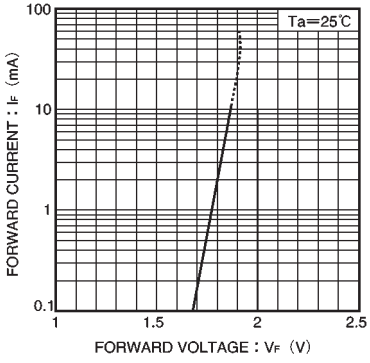


Fig. 2 Forward current vs. forward voltage

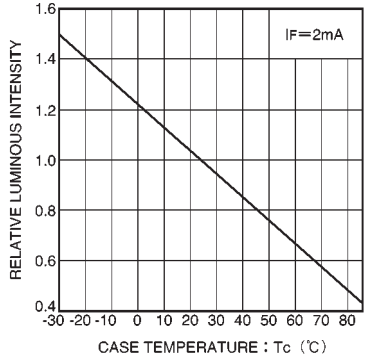


Fig. 3 Luminous intensity vs. case temperature

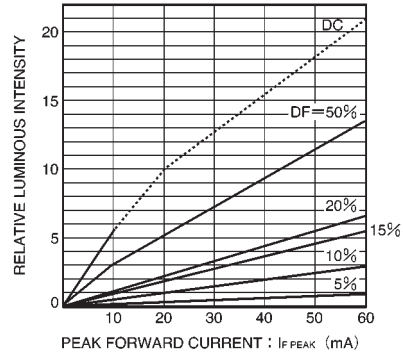


Fig. 4 Luminous intensity vs. peak forward current

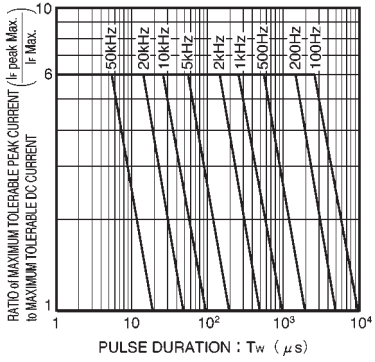


Fig. 5 Maximum tolerable peak current vs. pulse duration

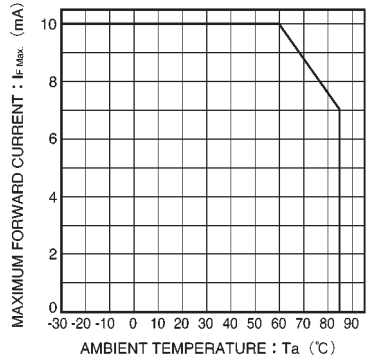


Fig. 6 Maximum forward current vs. ambient temperature