

# Chip LEDs with low power consumption

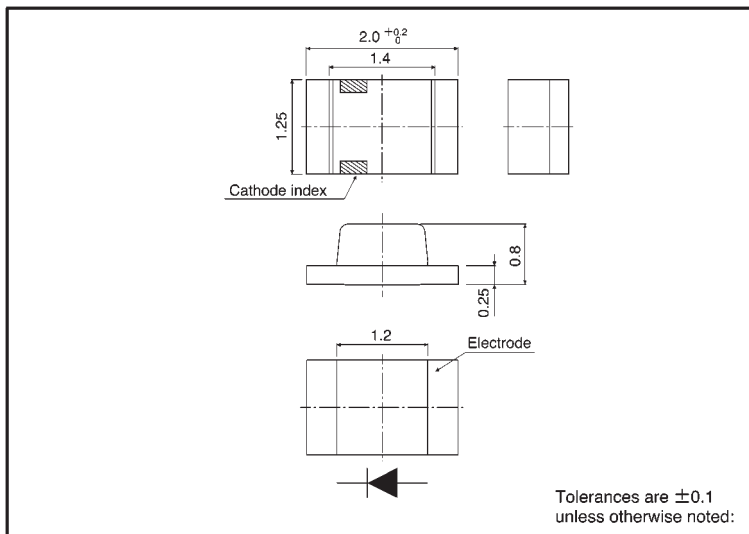
## SML-211 Series

The SML-211 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  $2.0 \text{ mm} \times 1.25 \text{ mm}$  surface mount package.
- 5) Thin  $0.8 \text{ mm}$  package.
- 6) Ideal light source for battery driven products.

### ●External dimensions (Units: mm)



### ●Selection guide

Emitting color Lens	Red	Orange	Yellow	Green
	Transparent clear	SML-211UT	SML-211DT	SML-211YT

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

Parameter	Symbol	Red	Orange	Yellow	Unit
		SML-211UT	SML-211DT	SML-211YT	
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		Color	Forward voltage			Reverse current		Luminous intensity			Peak wavelength		Spectral line half width	
			V <sub>F</sub> (V)		Cond.	I <sub>R</sub> (μA)	Cond.	I <sub>v</sub> (mcd)		λ <sub>p</sub> (nm)	Cond.	Δλ (nm)	Cond.	
			Typ.	Max.	I <sub>F</sub> (mA)	Max.	V <sub>R</sub> (V)	Min.	Typ.	I <sub>F</sub> (mA)	Typ.	I <sub>F</sub> (mA)	Typ.	I <sub>F</sub> (mA)
SML-211	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

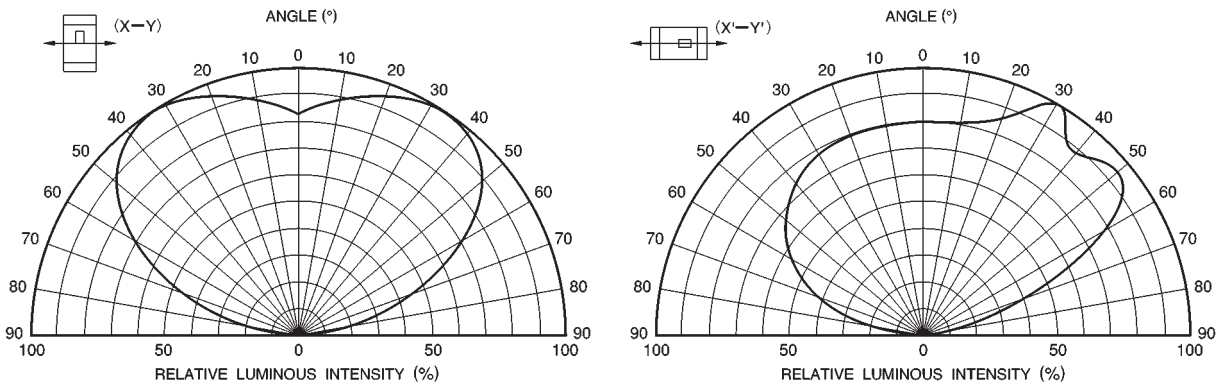


Fig. 1 Directional pattern

●Electrical characteristic curves (SML-211UT, DT, YT)

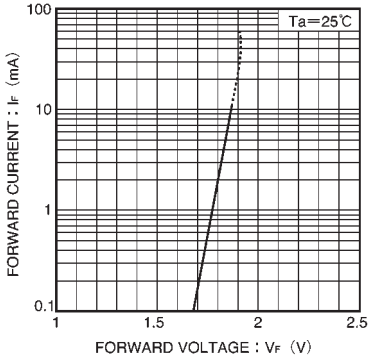


Fig. 2 Forward current vs. forward voltage

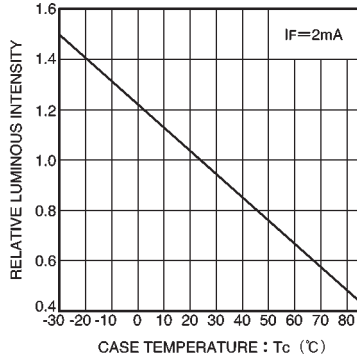


Fig. 3 Luminous intensity vs. case temperature

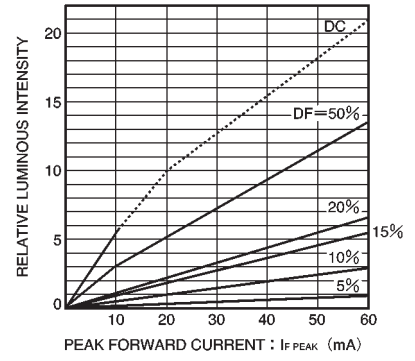


Fig. 4 Luminous intensity vs. peak forward current

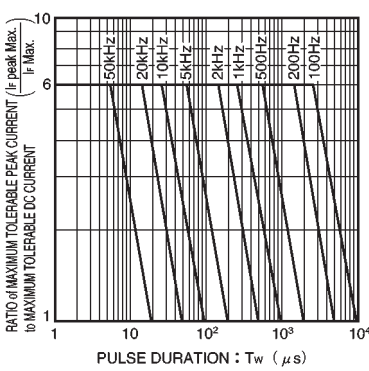


Fig. 5 Maximum tolerable peak current vs. pulse duration

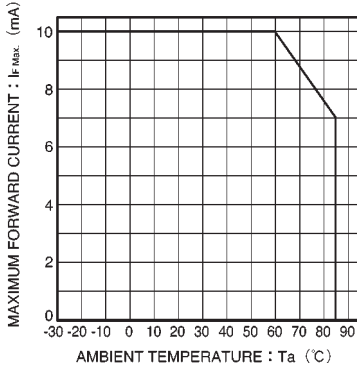


Fig. 6 Maximum forward current vs. ambient temperature