Chip LEDs with reflectors

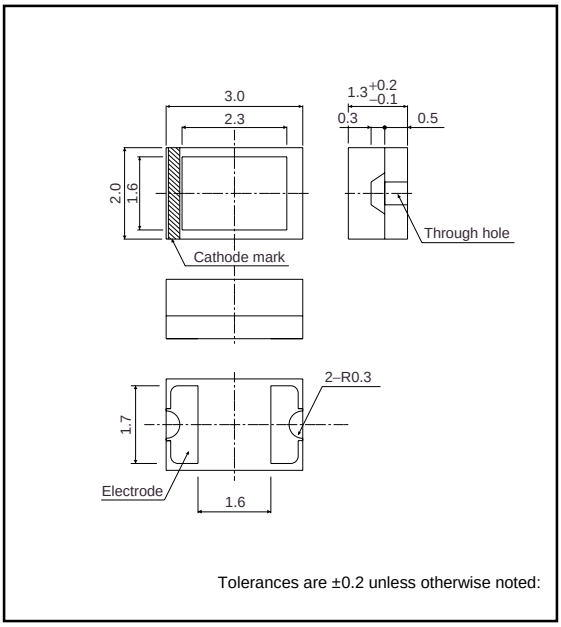
SML-010 Series

The SML-010 series are high luminance chip LEDs with reflectors. The compact and leadless design of these LEDs allows for high mounting density.

●Features

1) Reflectors are used to achieve a high luminance.
2) Four colors : red, orange, yellow and green.
3) Rectangular and leadless (3x2mm)
4) Can be mounted by automatic mounting.

●External dimensions (Units : mm)



●Selection guide

Emitting color / Lens	Red	Orange	Yellow	Green
Transparent clear	SML-010LT	SML-010DT	SML-010YT	SML-010MT
	SML-010VT	–	–	SML-010FT
	–	–	–	SML-010PT

●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits		Unit
		Bright red (L)	Other colors	
Power dissipation	P_D	75	70	mW
Forward current	I_F	30	25	mA
Peak forward current	I_{FP}	75	60	mA*
Reverse voltage	V_R	4		V
Operating temperature	Topr	−30~+85		˚C
Storage temperature	Tstg	−40~+85		˚C

* 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.	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-010	LT	Red	1.75	2.5	20	100	4	5.6	16.0	20	660	20	25	20
	VT	Red	2.0	2.8	20	100	4	2.2	6.3	20	650	20	40	20
	DT	Orange	2.0	2.8	20	100	4	3.6	10.0	20	610	20	40	20
	YT	Yellow	2.1	2.8	20	100	4	2.2	6.3	20	585	20	40	20
	MT	Green	2.2	2.8	20	100	4	5.6	25.0	20	570	20	40	20
	FT	Green	2.2	2.8	20	100	4	3.6	10.0	20	560	20	40	20
	PT	Green	2.2	2.8	20	100	4	2.2	6.3	20	555	20	40	20

●Directional pattern

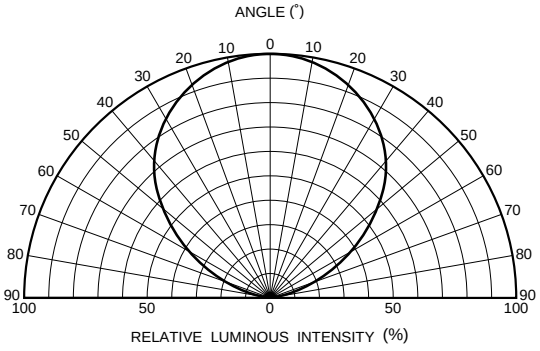


Fig.1 Directional pattern

●Electrical characteristics curves 1 (SML-010LT) (bright red)

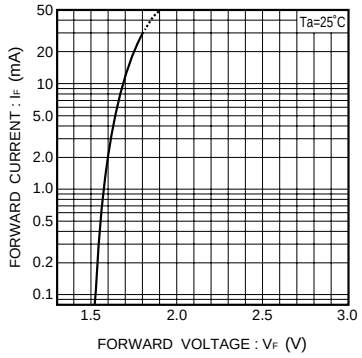


Fig.2 Forward current vs. forward voltage

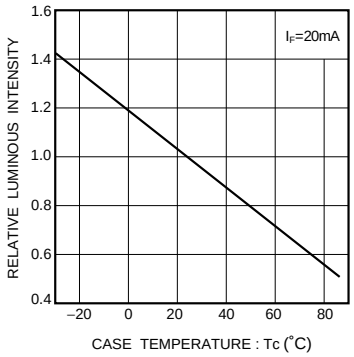


Fig.3 Luminous intensity vs. case temperature

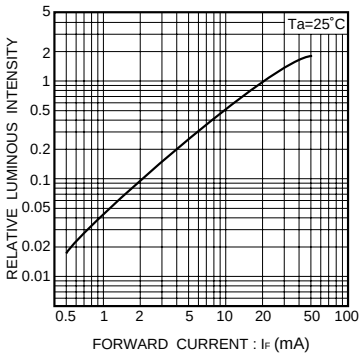


Fig.4 Luminous intensity vs. forward current

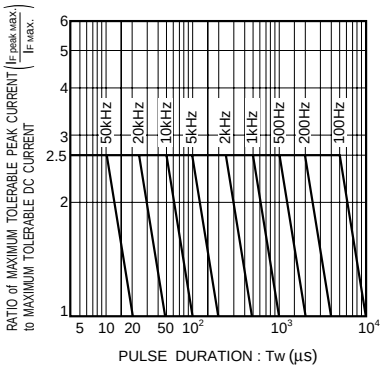


Fig.5 Maximum tolerable peak current vs. pulse duration

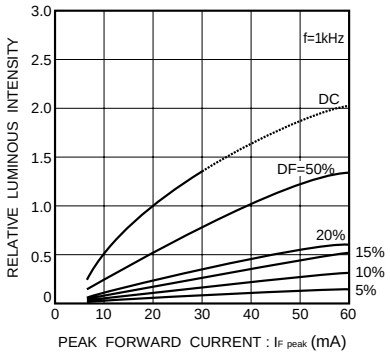


Fig. 6 Luminous intensity vs. peak forward current

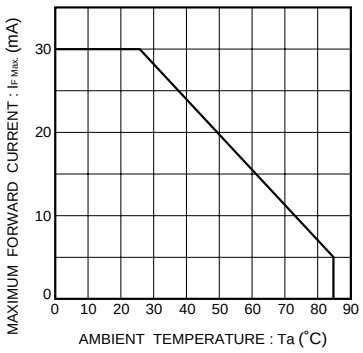


Fig. 7 Maximum forward current vs. ambient temperature (Derating)

●Electrical characteristics curves 2 (SML-010VT) (red)

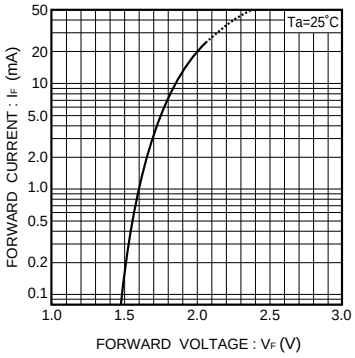


Fig.8 Forward current vs. forward voltage

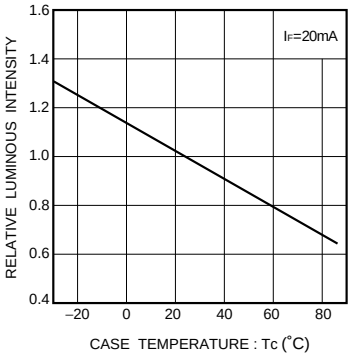


Fig.9 Luminous intensity vs. case temperature

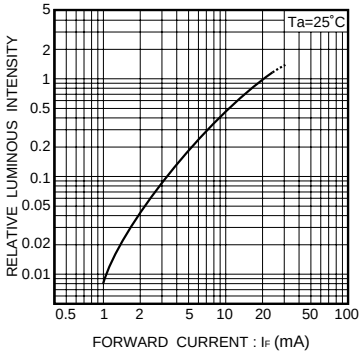


Fig.10 Luminous intensity vs. forward current

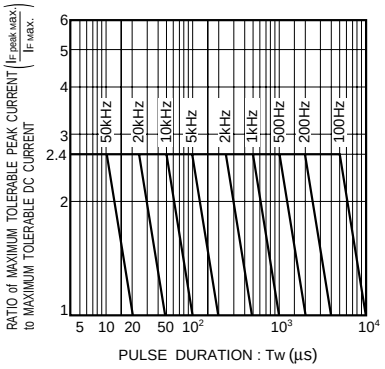


Fig.11 Maximum tolerable peak current vs. pulse duration

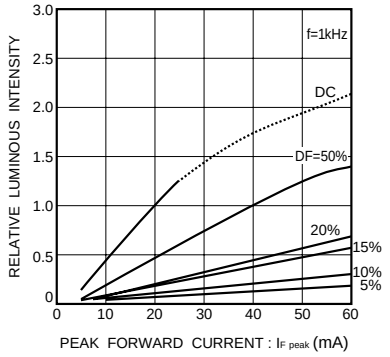


Fig.1 2 Luminous intensity vs. peak forward current

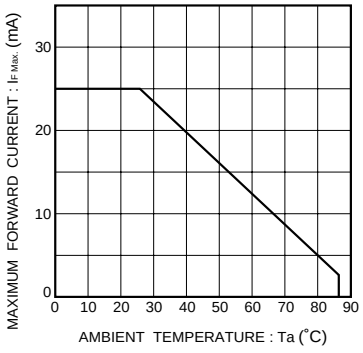


Fig.13 Maximum forward current vs. ambient temperature (Derating)

●Electrical characteristics curves 3 (SML-010DT) (orange)

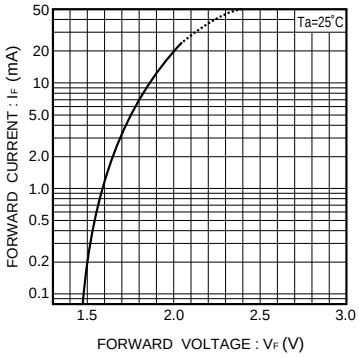


Fig.14 Forward current vs. forward voltage

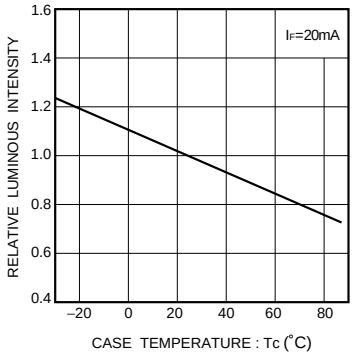


Fig.15 Luminous intensity vs. case temperature

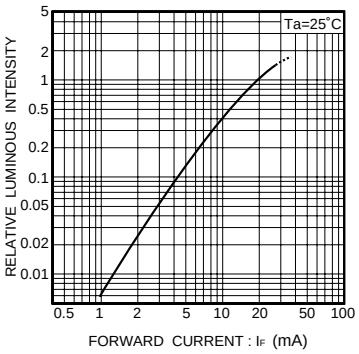


Fig.16 Luminous intensity vs. forward current

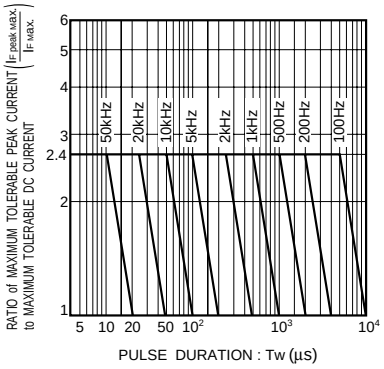


Fig.17 Maximum tolerable peak current vs. pulse duration

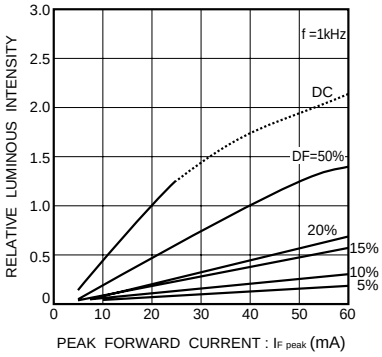


Fig.18 Luminous intensity vs. peak forward current

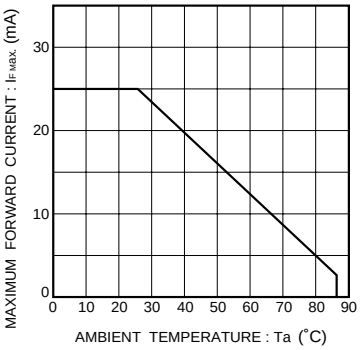


Fig.19 Maximum forward current vs. ambient temperature (Derating)

●Electrical characteristics curves 4 (SML-010YT) (yellow)

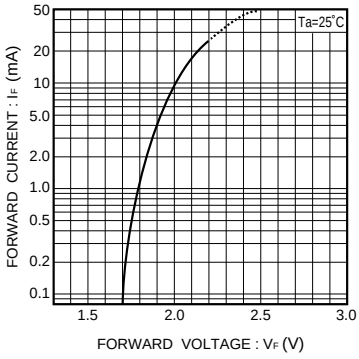


Fig.20 Forward current vs. forward voltage

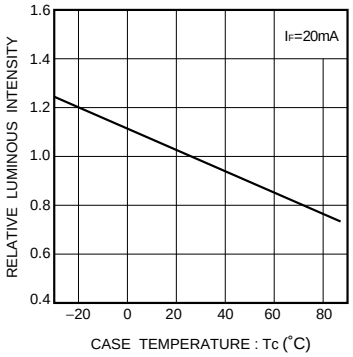


Fig.21 Luminous intensity vs. case temperature

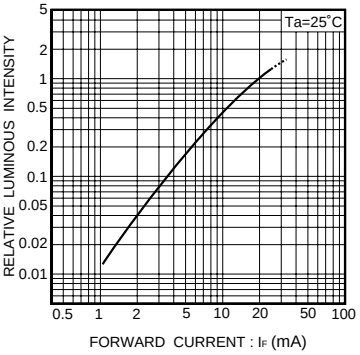


Fig.22 Luminous intensity vs. forward current

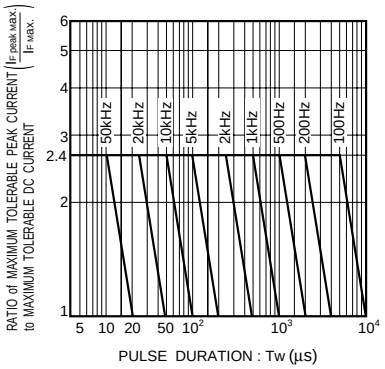


Fig.23 Maximum tolerable peak current vs. pulse duration

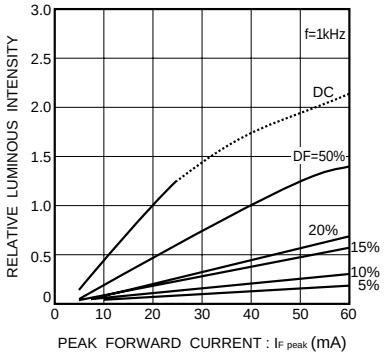


Fig.24 Luminous intensity vs. peak forward current

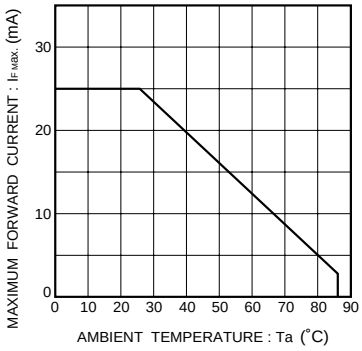


Fig.25 Maximum forward current vs. ambient temperature (Derating)

●Electrical characteristics curves 5 (SML-010MT, SML-010FT, SML-010PT) (green)

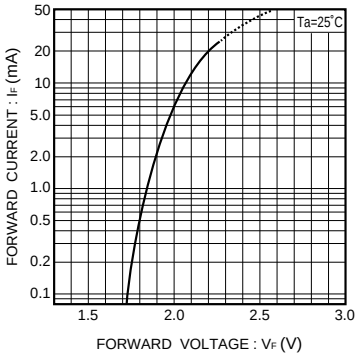


Fig.26 Forward current vs. forward voltage

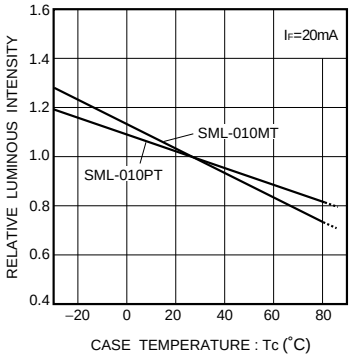


Fig.27 Luminous intensity vs. case temperature

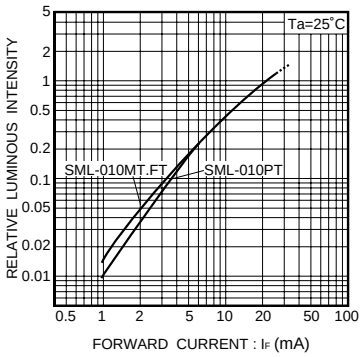


Fig.28 Luminous intensity vs. forward current

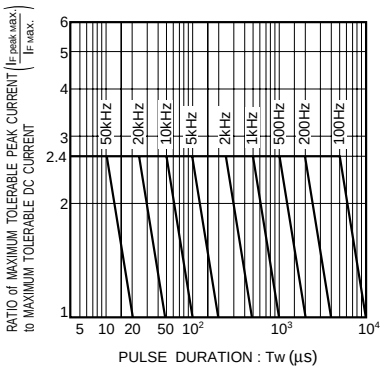


Fig.29 Maximum tolerable peak current vs. pulse duration

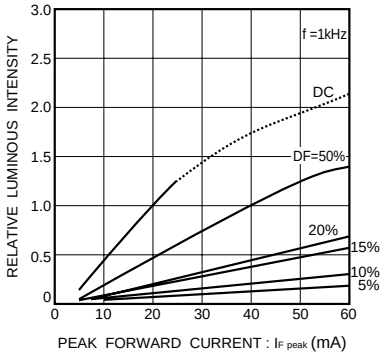


Fig.30 Luminous intensity vs. peak forward current

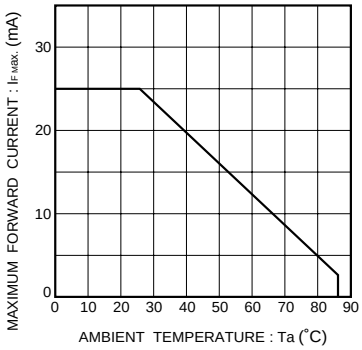


Fig.31 Maximum forward current vs. ambient temperature (Derating)