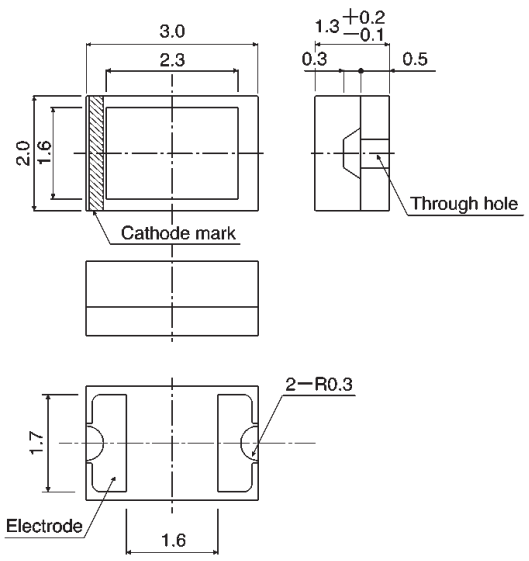
Chip LEDs with reflectors

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.

●External dimensions (Units: mm)



Tolerances are ±0.2 unless otherwise noted:

●Features

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

●Selection guide

Lens \ Emitting color	Red	Orange	Yellow	Green
Transparent clear	SML-010JT	SML-010DT	SML-010YT	SML-010MT
	SML-010LT	—	—	SML-010FT
	SML-010VT	—	—	SML-010PT

●Absolute maximum ratings (Ta = 25°C)

Parameter	Symbol	Limits		Unit
		Bright red (L, J)	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		℃
Storage temperature	Tstg	−40～+85		℃

* Pulse width 1ms Duty 1 / 5

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

Type	Parameter	Color	Forward voltage V_F (V) Typ.	Forward voltage V_F (V) Max.	Cond. I_F (mA)	Reverse current I_R (μA) Max.	Cond. V_R (V)	Luminous intensity I_V (mcd) Min.	Luminous intensity I_V (mcd) Typ	Cond. I_F (mA)	Peak wavelength λ_P (nm) Typ.	Cond. I_F (mA)	Spectral line half width $\Delta\lambda$ (nm) Typ.	Cond. I_F (mA)
SML-010	JT	Red	1.9	2.5	20	100	4	14.0	40.0	20	660	20	20	20
	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

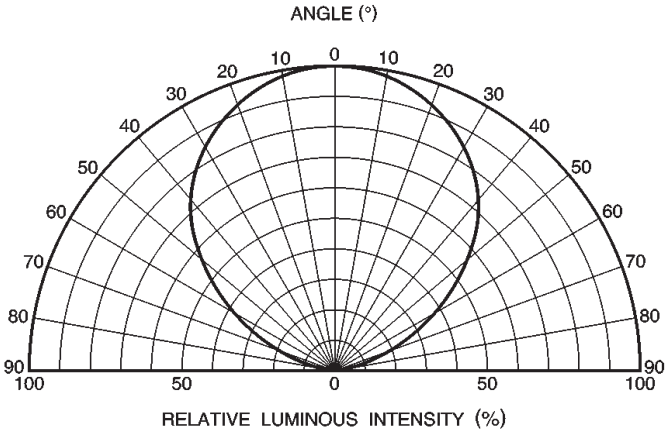


Fig. 1 Directional pattern

●Electrical characteristic curves 1 (SML-010LT, SML-010JT) (bright red)

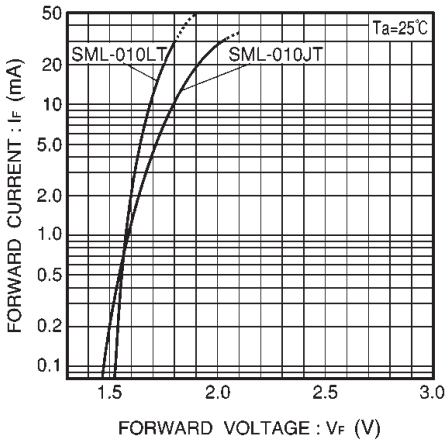


Fig. 2 Forward current vs. forward voltage

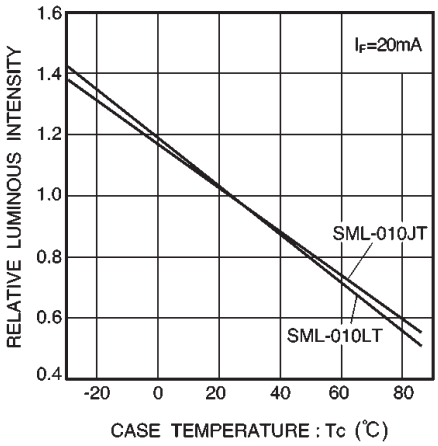


Fig. 3 Luminous intensity vs. case temperature

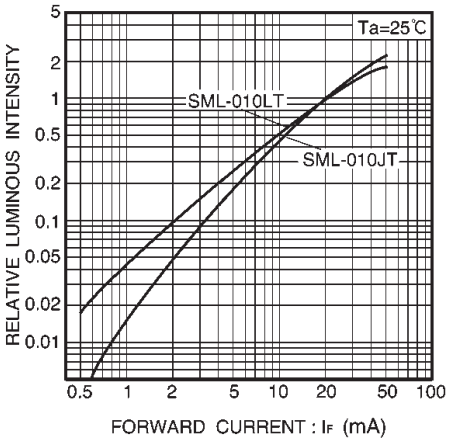


Fig. 4 Luminous intensity vs. forward current

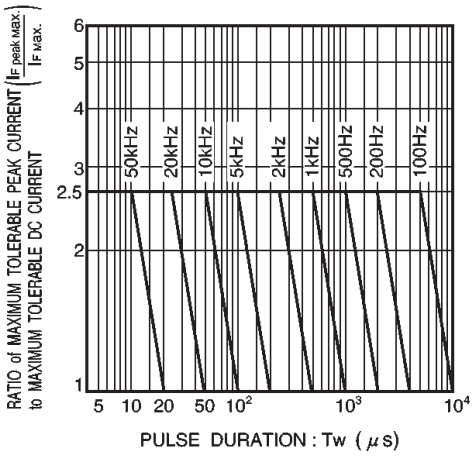


Fig. 5 Maximum tolerable peak current vs. pulse duration

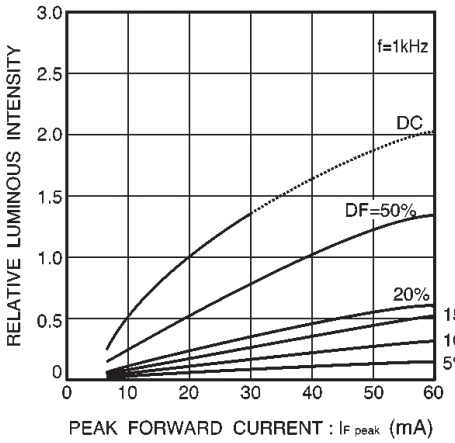


Fig. 6 Luminous intensity vs. peak forward current

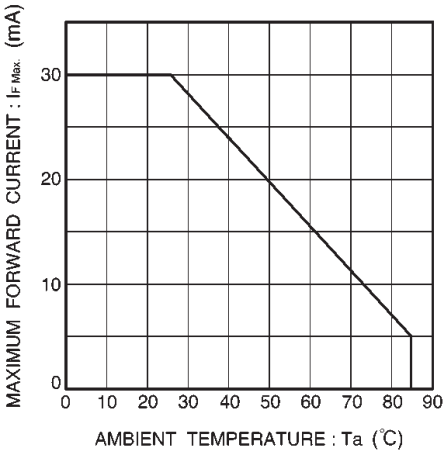


Fig. 7 Maximum forward current vs. ambient temperature

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

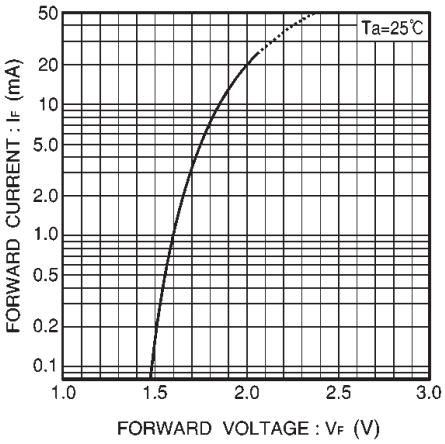


Fig. 8 Forward current vs. forward voltage

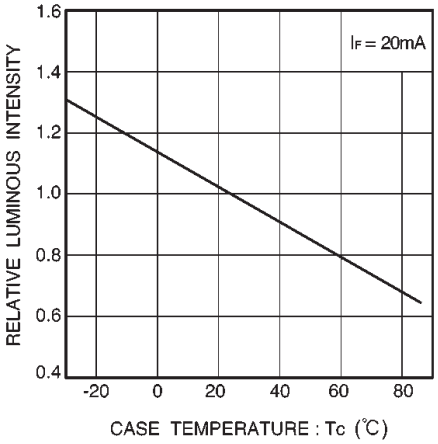


Fig. 9 Luminous intensity vs. case temperature

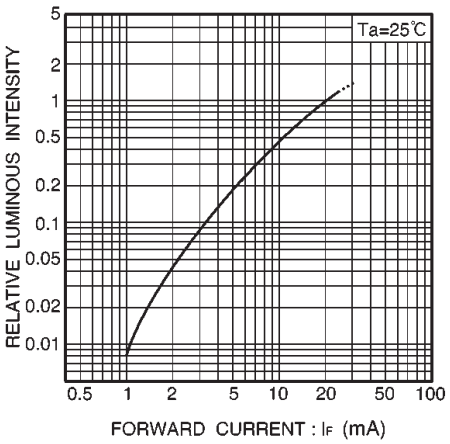


Fig. 10 Luminous intensity vs. forward current

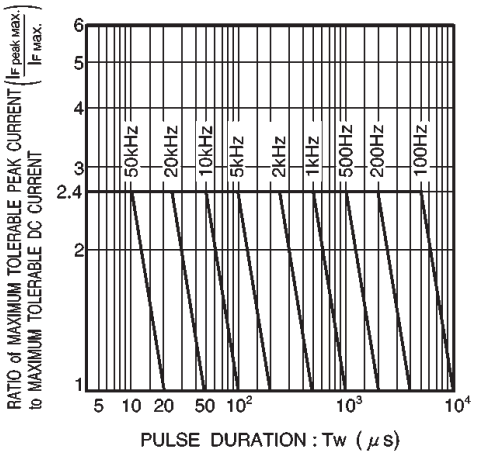


Fig. 11 Maximum tolerable peak current vs. pulse duration

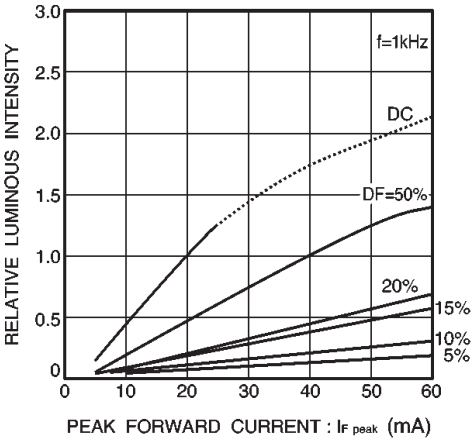


Fig. 12 Luminous intensity vs. peak forward current

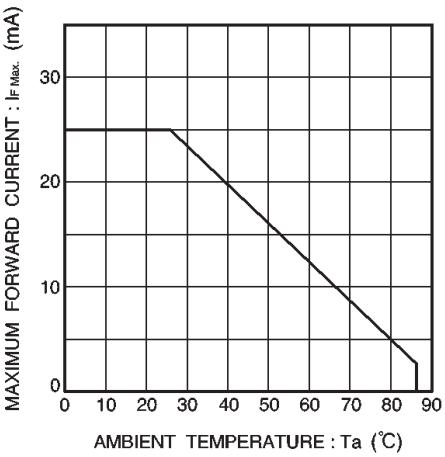


Fig. 13 Maximum forward current vs. ambient temperature

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

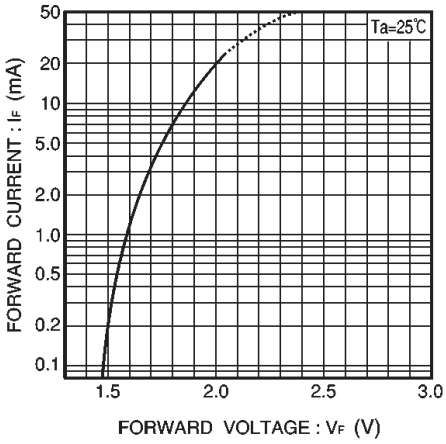


Fig. 14 Forward current vs. forward voltage

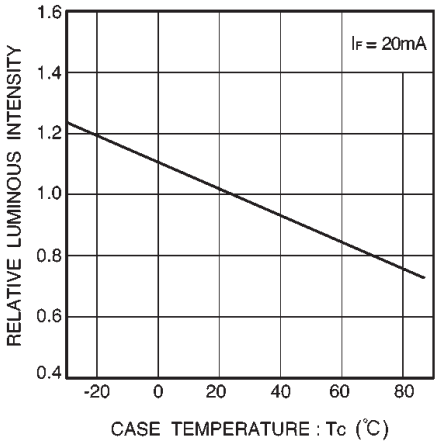


Fig. 15 Luminous intensity vs. case temperature

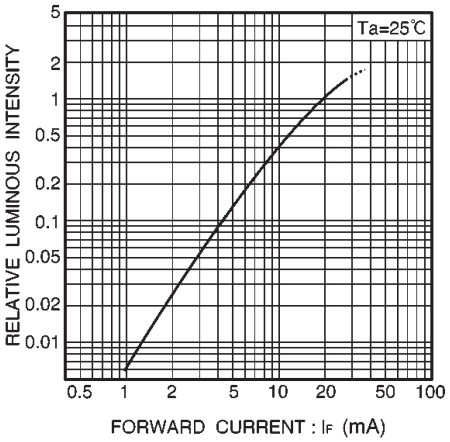


Fig. 16 Luminous intensity vs. forward current

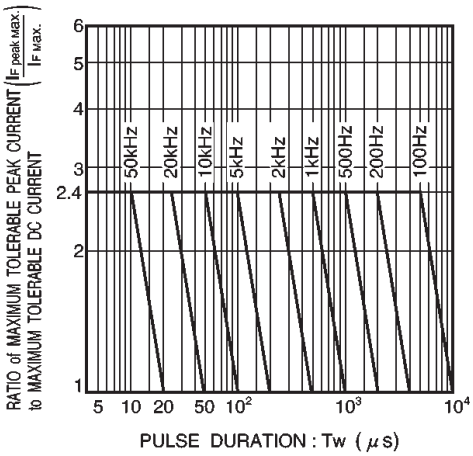


Fig. 17 Maximum tolerable peak current vs. pulse duration

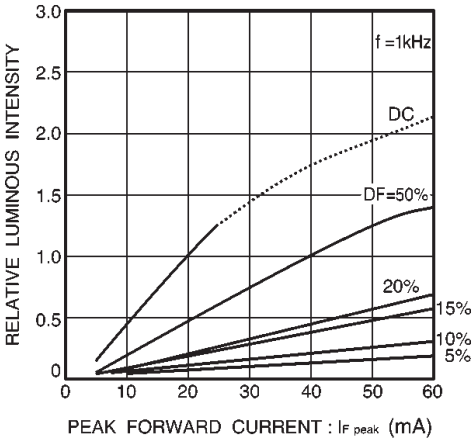


Fig. 18 Luminous intensity vs. peak forward current

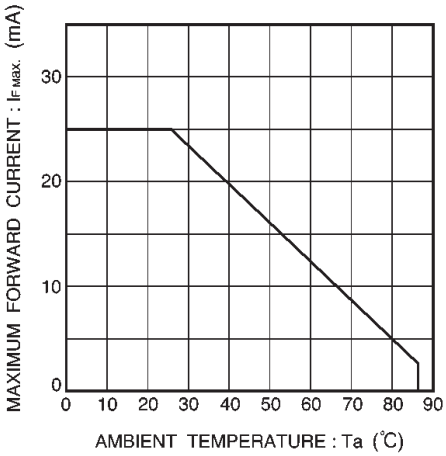


Fig. 19 Maximum forward current vs. ambient temperature

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

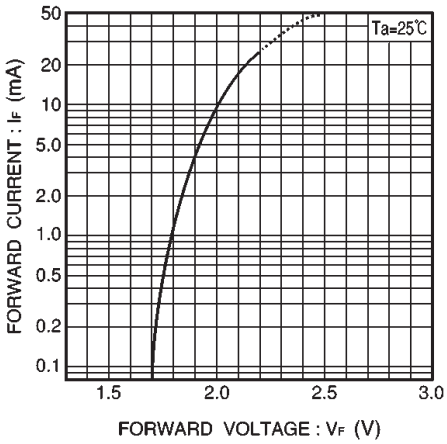


Fig. 20 Forward current vs. forward voltage

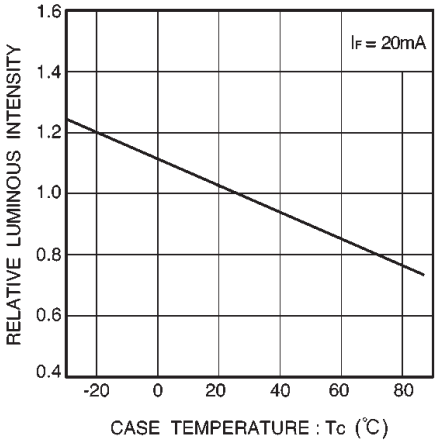


Fig. 21 Luminous intensity vs. case temperature

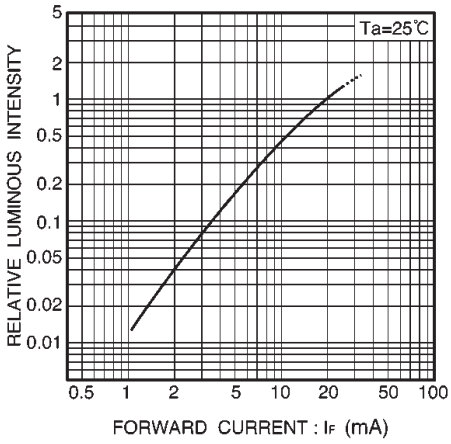


Fig. 22 Luminous intensity vs. forward current

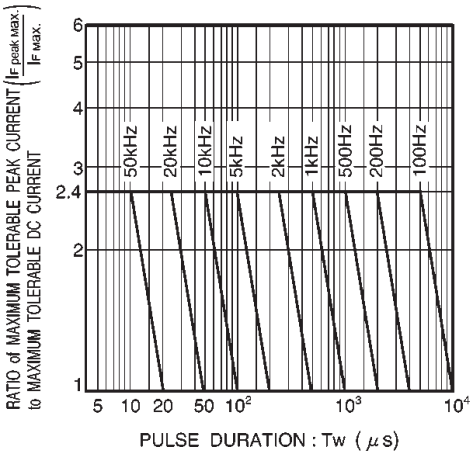


Fig. 23 Maximum tolerable peak current vs. pulse duration

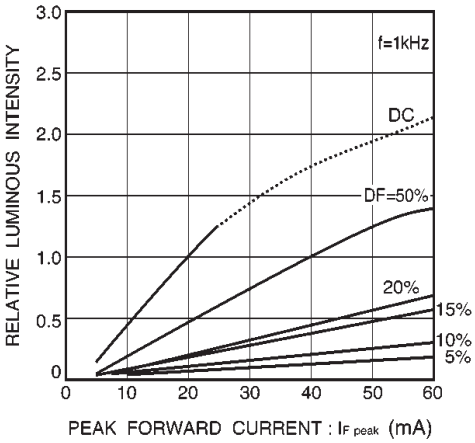


Fig. 24 Luminous intensity vs. peak forward current

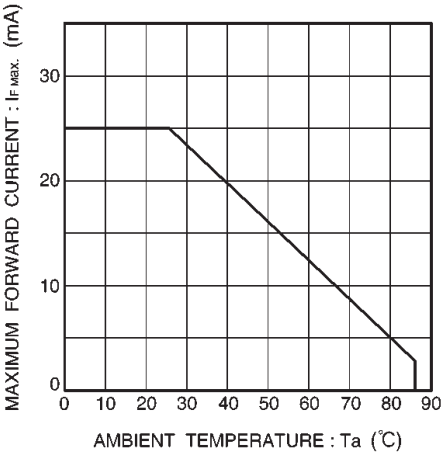


Fig. 25 Maximum forward current vs. ambient temperature

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

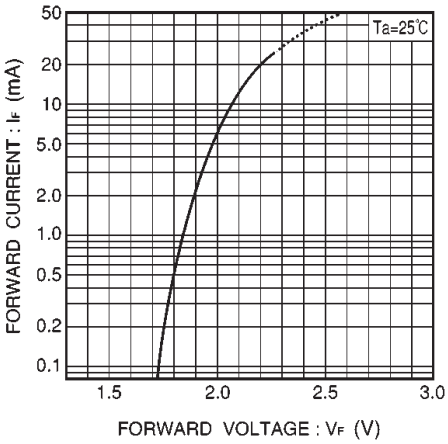


Fig. 26 Forward current vs. forward voltage

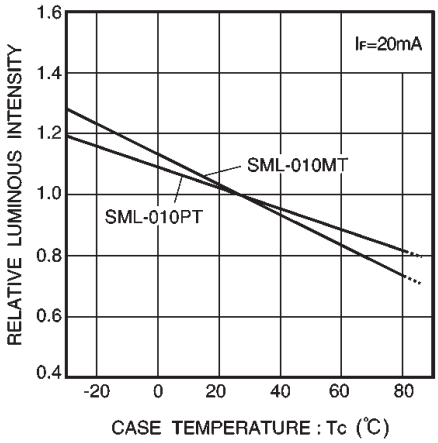


Fig. 27 Luminous intensity vs. case temperature

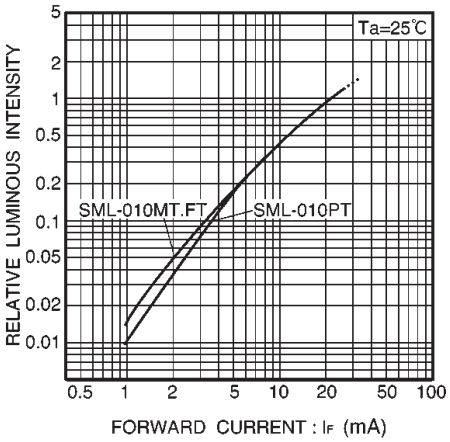


Fig. 28 Luminous intensity vs. forward current

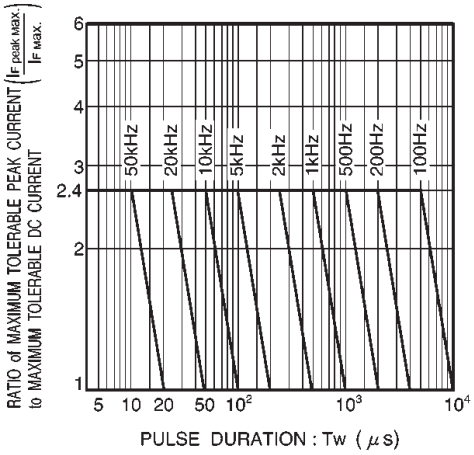


Fig. 29 Maximum tolerable peak current vs. pulse duration

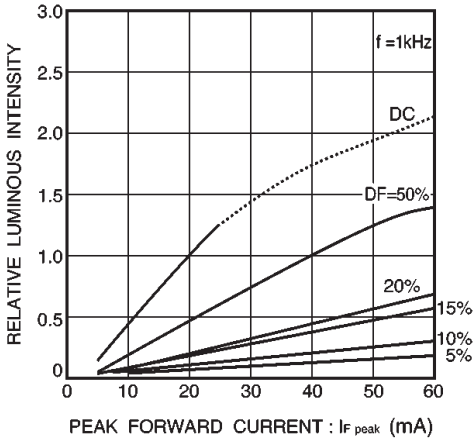


Fig. 30 Luminous intensity vs. peak forward current

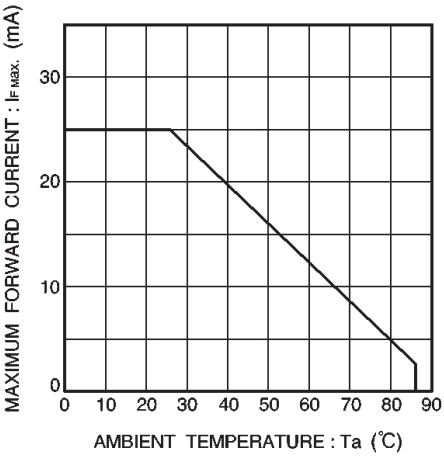


Fig. 31 Maximum forward current vs. ambient temperature