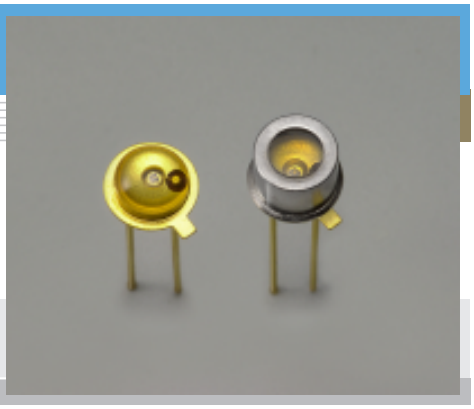
Infrared LED
L1939 series

ϕ300 µm emission spot, no electrode in emission area



Features

- Small emission spot: ϕ300 µm
- Wide directivity
- High reliability, long life

Applications

- Auto-focus
- Optical switches
- Mark sensors

■ Absolute maximum ratings (Ta=25 °C)

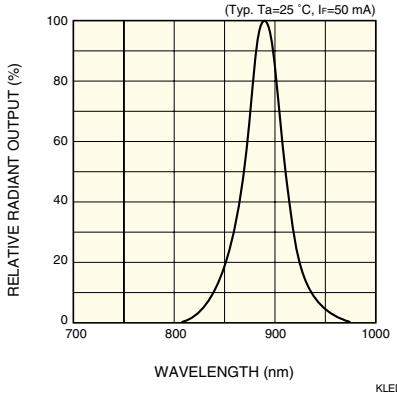
Parameter	Symbol	Condition	Value	Unit
Forward current	I_F		100	mA
Reverse voltage	V_R		5	V
Pulse forward current	I_{FP}	Pulse width=10 µs Duty ratio=1 %	1.5	A
Operating temperature	Topr		-30 to +85	°C
Storage temperature	Tstg		-40 to +100 *	°C

* L1939 is guaranteed to resist temperature cycle test of up to 5 cycles.

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

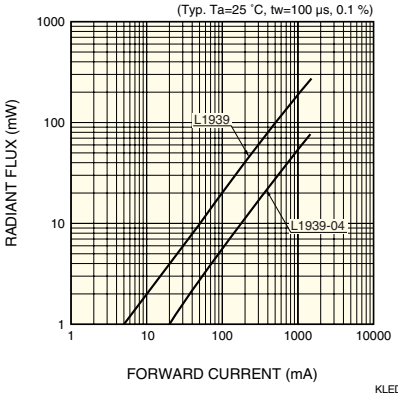
Parameter	Symbol	Condition	L1939			L1939-04			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Peak emission wavelength	λp	I_F=50 mA	870	890	920	870	890	920	nm
Spectral half width	Δλ	I_F=50 mA	-	50	-	-	50	-	nm
Forward voltage	V_F	I_F=50 mA	-	1.4	1.5	-	1.4	1.5	V
Pulse forward voltage	V_{FP}	I_F=1.5 A	-	2.7	3.4	-	2.7	3.4	V
Reverse current	I_R	V_R=5 V	-	-	5	-	-	5	µA
Radiant flux	ϕe	I_F=50 mA	8.0	10.0	-	2.0	2.8	-	mW
Radiant illuminance	P_E	I_F=50 mA	-	0.4	-	-	0.35	-	mW/cm^2
Rise time	tr	I_F=50 mA, 10 to 90 %	-	0.45	0.7	-	0.45	0.7	µs
Fall time	tf	I_F=50 mA, 90 to 10 %	-	0.45	0.7	-	0.45	0.7	µs

■ Emission spectrum



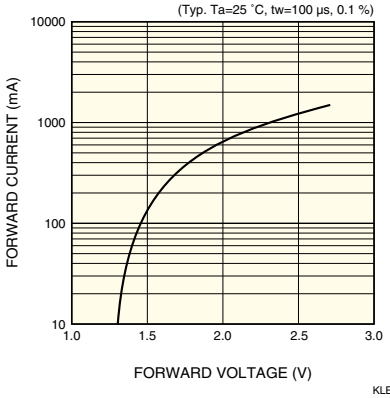
KLEDB0201EA

■ Radiant flux vs. forward current



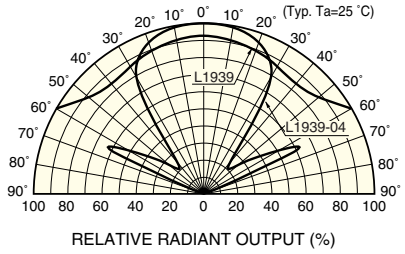
KLEDB0146EA

■ Forward current vs. forward voltage



KLEDB0147EA

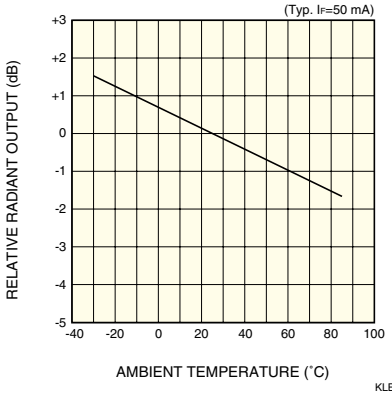
■ Directivity



Except for reflection ingredient of the base.

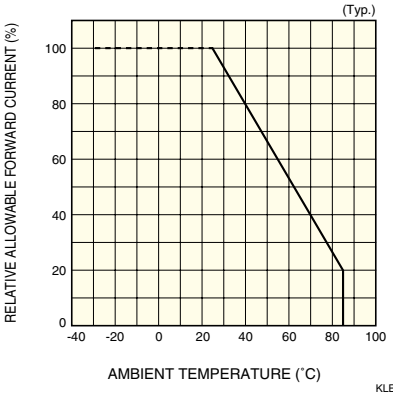
KLEDB0148EA

■ Radiant output vs. ambient temperature



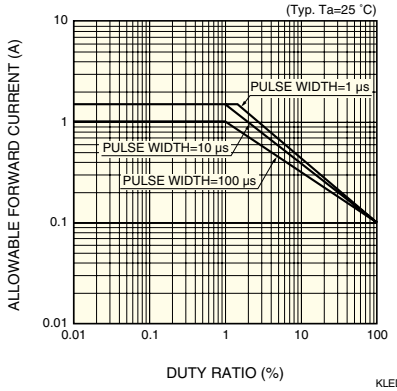
KLEDB0145EA

■ Allowable forward current vs. ambient temperature



KLEDB0027EB

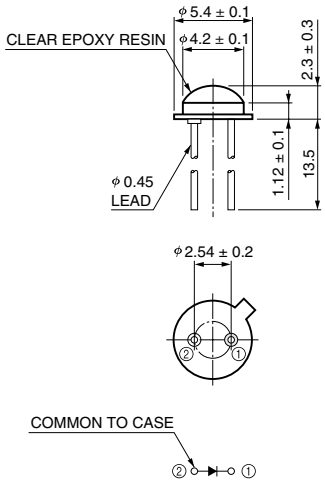
■ Allowable forward current vs. duty ratio



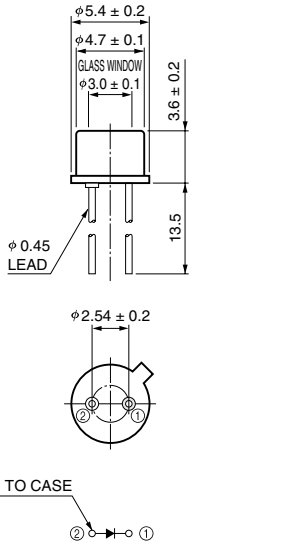
KLEDB0149EA

■ Dimensional outlines (unit: mm)

① L1939



② L1939-04



KLEDA0009ED

KLEDA0053EB

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