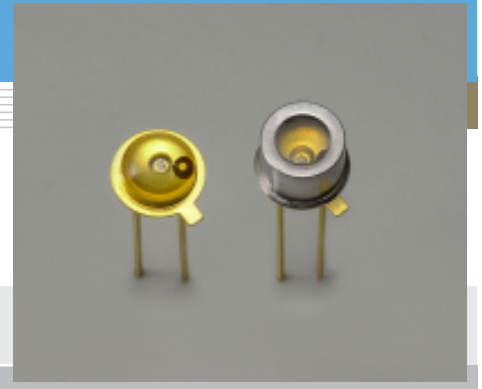


Infrared LED

L1939 series

$\phi 300 \mu\text{m}$ emission spot, no electrode in emission area



Features

- Small emission spot: $\phi 300 \mu\text{m}$
- Wide directivity
- High reliability, long life

Applications

- Auto-focus
- Optical switches
- Mark sensors

■ Absolute maximum ratings (Ta=25 °C)

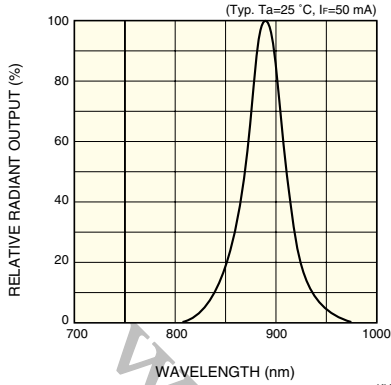
Parameter	Symbol	Condition	Value	Unit
Forward current	IF		100	mA
Reverse voltage	VR		5	V
Pulse forward current	IFP	Pulse width=10 μs Duty ratio=1 %	1.5	A
Operating temperature	Topr		-30 to +85	°C
Storage temperature	Tstg		-40 to +100 *	°C

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

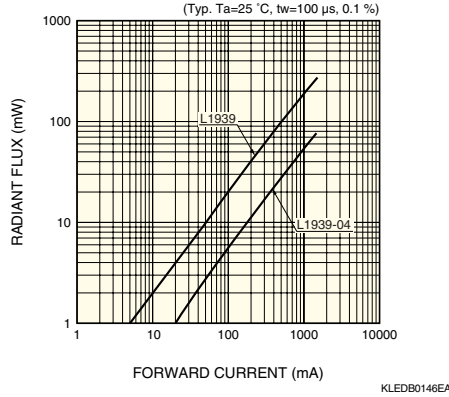
■ Electrical and optical characteristics (Ta=25 °C)

Parameter	Symbol	Condition	L1939			L1939-04			Unit
			Min.	Typ.	Max.	Min.	Typ.	Max.	
Peak emission wavelength	λ_p	IF=50 mA	870	890	920	870	890	920	nm
Spectral half width	$\Delta\lambda$	IF=50 mA	-	50	-	-	50	-	nm
Forward voltage	VF	IF=50 mA	-	1.4	1.5	-	1.4	1.5	V
Pulse forward voltage	VFP	IF=1.5 A	-	2.7	3.4	-	2.7	3.4	V
Reverse current	IR	VR=5 V	-	-	5	-	-	5	μA
Radiant flux	ϕ_e	IF=50 mA	8.0	10.0	-	2.0	2.8	-	mW
Radiant illuminance	PE	IF=50 mA	-	0.4	-	-	0.35	-	mW/cm^2
Rise time	tr	IF=50 mA, 10 to 90 %	-	0.45	0.7	-	0.45	0.7	μs
Fall time	tf	IF=50 mA, 90 to 10 %	-	0.45	0.7	-	0.45	0.7	μs

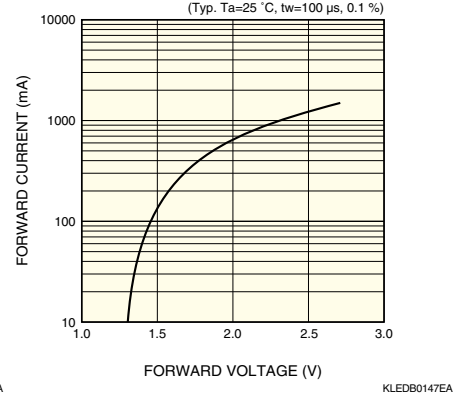
■ Emission spectrum



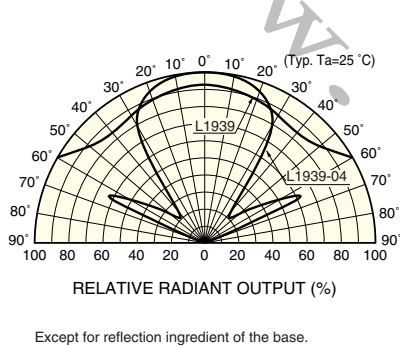
■ Radiant flux vs. forward current



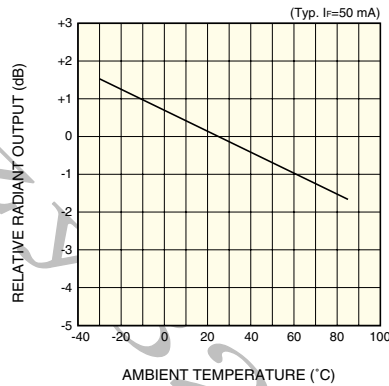
■ Forward current vs. forward voltage



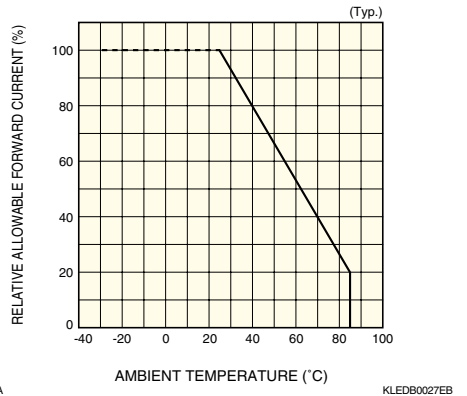
■ Directivity



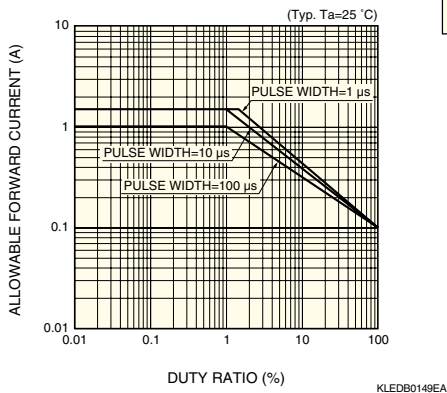
■ Radiant output vs. ambient temperature



■ Allowable forward current vs. ambient temperature

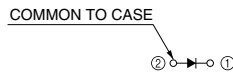
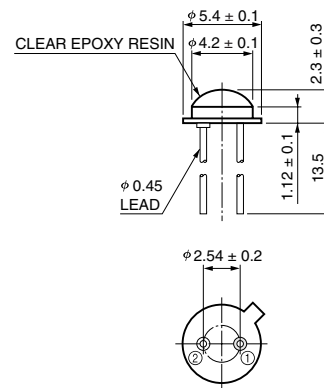


■ Allowable forward current vs. duty ratio



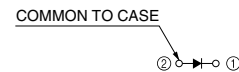
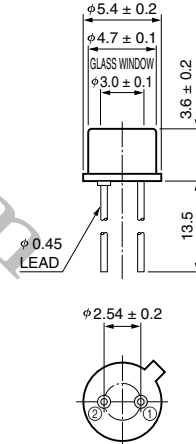
■ Dimensional outlines (unit: mm)

① L1939



KLEDA0009ED

② L1939-04



KLEDA0053EB

HAMAMATSU

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