

Infrared LED

L8957

Low cost LED ideal for optical encoders

L8957 is an infrared LED using a low-cost lens and available at a lower price than other products up to now.

Features

- Low price
- Uses low cost lens

Applications

- Optical encoders
- Optical switches

■ Absolute maximum ratings (Ta=25 °C, unless otherwise noted)

Parameter	Symbol	Condition	Value	Unit
Reverse voltage	VR		5	V
Forward current	IF		80	mA
Forward current reduction rate	-		0.67	mA/°C
Pulse forward current	IFP	Pulse width=10 μs Duty ratio=1 %	0.5	A
Pulse forward current reduction rate	-		4.2	mA/°C
Power dissipation	P		150	mW
Operating temperature	Topr		-30 to +85	°C
Storage temperature	Tstg		-40 to +100	°C

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Peak emission wavelength	λ_p	IF=30 mA	840	870	900	nm
Spectral half width	$\Delta\lambda$	IF=30 mA	-	45	-	nm
Optical output *1	Pe	IF=30 mA	1.5	2.1	-	mW
Forward voltage	VF	IF=30 mA	-	1.5	1.65	V
Reverse current	IR	VR=5 V	-	-	5	μA
Spot light size *2	Bw	IF=30 mA	4.8 *3	5.4	-	mm
Cut-off frequency *4	fc	IF=30 mA ± 4 mAp-p	25	40	-	MHz

*1: Measured with a photodiode (active area: $\phi 8$ mm) installed 10 mm away from LED stem undersurface.

*2: Full width at half maximum of beam spot measured with an image sensor installed 13 mm away from LED stem undersurface.

*3: Reference value

*4: Frequency at which the optical output drops by -3 dB from that at 100 kHz.