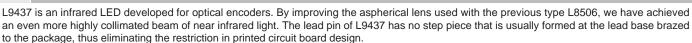
Infrared LED **L9437**

LED emitting collimated light for optical encoder





Features

- Collimated light beam
- Uniform light spot
- Narrow directivity: ±5°
- High-speed response: 40 MHz Typ.
- High reliability

Applications

Optical encoder

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

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

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

		(14 25 5)					
Parameter	Symbol	Condition	Min.	Тур.	Max.	Unit	
Peak emission wavelength	λр	IF=30 mA	840	870	900	nm	
Spectral half width	Δλ	IF=30 mA	•	45	-	nm	
Optical output *1	Pe	IF=30 mA	1.25	1.6	-	mW	
Forward voltage	VF	IF=30 mA	-	1.5	1.65	V	
Reverse current	lR	VR=5 V	-	-	5	μA	
Light spot size *2	Bw	IF=30 mA	4.0 *3	4.3	-	mm	
Cut-off frequency *4	fc	$IF=30 \text{ mA} \pm 4 \text{ mAp-p}$	25	40	-	MHz	

^{*1:} Measured with a photodiode (active area: φ8 mm) installed 25 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.