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# GL537/GL538

## φ 5mm Resin Mold Type Infrared Emitting Diode

### ■ Features

1. High output power  
I<sub>E</sub>: TYP. 30mW/sr at I<sub>F</sub> = 50mA (**GL538**)
2. Beam angle  
**GL538** Δθ : TYP. ± 13°  
**GL537** Δθ : TYP. ± 25°
3. φ 5mm epoxy resin package

### ■ Applications

1. Infrared remote controllers for TVs, VCRs, audio equipment and air conditioners

### ■ Absolute Maximum Ratings (T<sub>a</sub> = 25°C)

Parameter	Symbol	Rating	Unit
Power dissipation	P	150	mW
Forward current	I <sub>F</sub>	100	mA
*1 Peak forward current	I <sub>FM</sub>	1	A
Reverse voltage	V <sub>R</sub>	6	V
Operating temperature	T <sub>opr</sub>	- 25 to + 85	°C
Storage temperature	T <sub>stg</sub>	- 40 to + 85	°C
*2 Soldering temperature	T <sub>sol</sub>	260	°C

\*1 Pulse width ≤ 100 μs, Duty ratio = 0.01

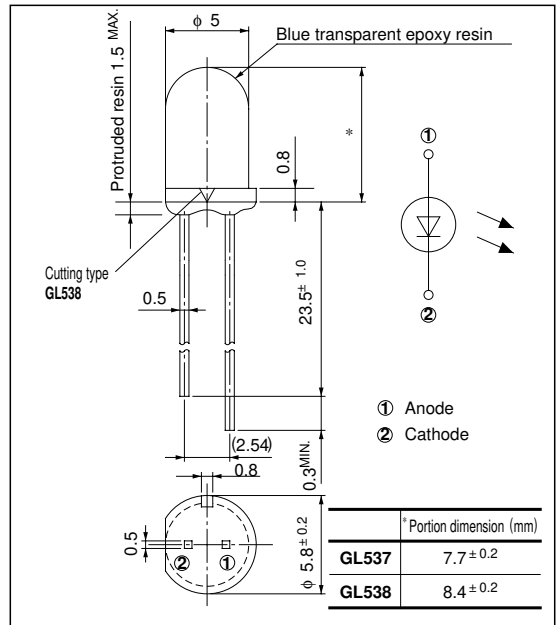
\*2 For 3 seconds at the position of 2.6mm from the bottom face of resin package.

### ■ Electro-optical Characteristics (T<sub>a</sub> = 25°C)

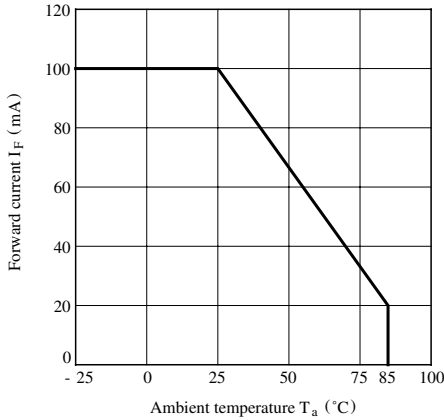
Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	V <sub>F</sub>	I <sub>F</sub> = 50mA	-	1.3	1.5	V
Peak forward voltage	V <sub>FM</sub>	I <sub>FM</sub> = 0.5A	-	1.9	3.0	V
Reverse current	I <sub>R</sub>	V <sub>R</sub> = 3V	-	-	10	μA
Peak emission wavelength	λ <sub>P</sub>	I <sub>F</sub> = 5mA	-	950	-	nm
Half intensity wavelength	Δλ	I <sub>F</sub> = 5mA	-	45	-	nm
*3 Radiation intensity	<b>GL537</b>	I <sub>F</sub> = 50mA	6	13	-	mW/sr
	<b>GL538</b>		15	30	-	
Terminal capacitance	C <sub>t</sub>	V <sub>R</sub> = 0, f = 1kHz	-	50	-	pF
Response frequency	f <sub>c</sub>	-	-	300	-	kHz
Half intensity angle	<b>GL537</b>	I <sub>F</sub> = 20mA	-	± 25	-	°
	<b>GL538</b>		-	± 13	-	

\*3 I<sub>E</sub>: Value obtained by converting the value in power of radiant fluxes emitted at the solid angle of 0.01 sr (steradian) in the direction of mechanical axis of the lens portion into 1 sr of all those emitted from the light emitting diode.

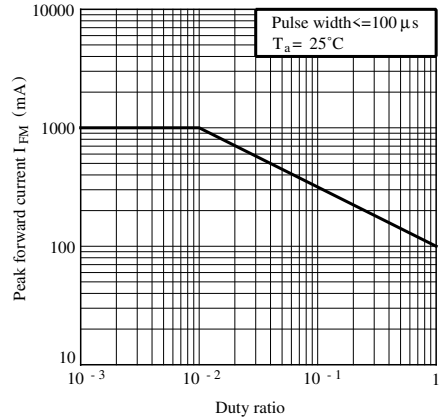
### ■ Outline Dimensions (Unit : mm)



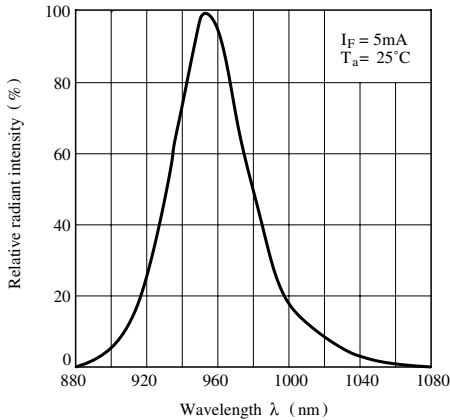
**Fig. 1 Forward Current vs. Ambient Temperature**



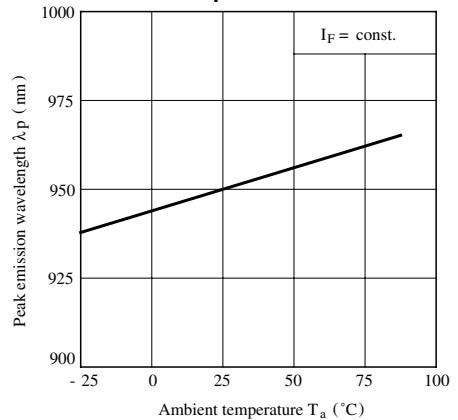
**Fig. 2 Peak Forward Current vs. Duty Ratio**



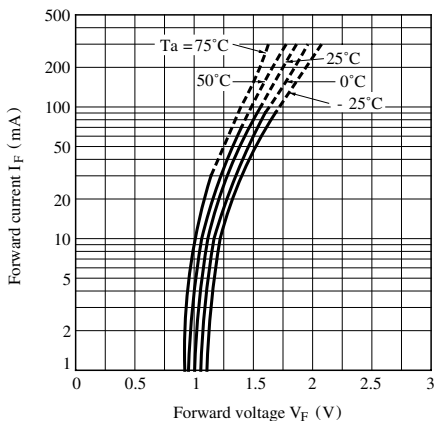
**Fig. 3 Spectral Distribution**



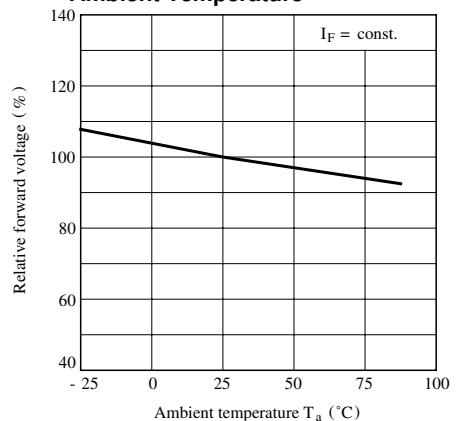
**Fig. 4 Peak Emission Wave length vs. Ambient Temperature**



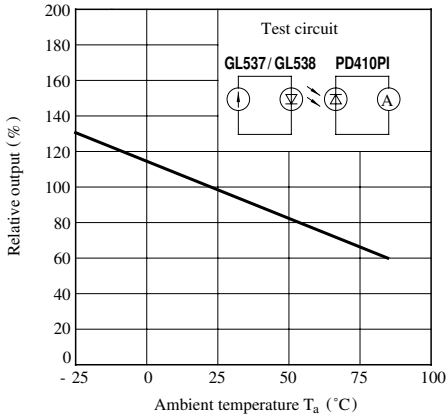
**Fig. 5 Forward Current vs. Forward Voltage**



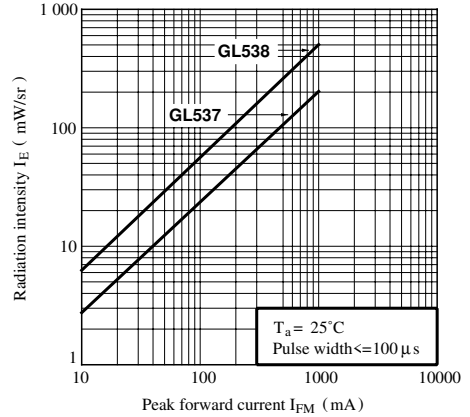
**Fig. 6 Relative Forward Voltage vs. Ambient Temperature**



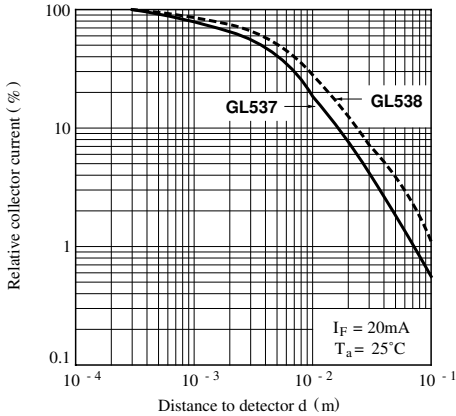
**Fig. 7 Relative Output vs. Ambient Temperature (Detector : PD410PI)**



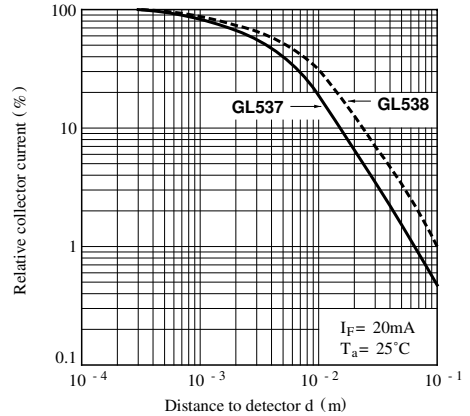
**Fig. 8 Radiation Intensity vs. Peak Forward Current**



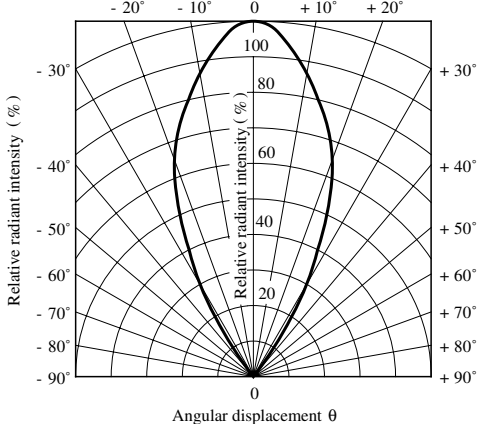
**Fig. 9 Relative Collector Current vs. Distance (Detector : PD410PI)**



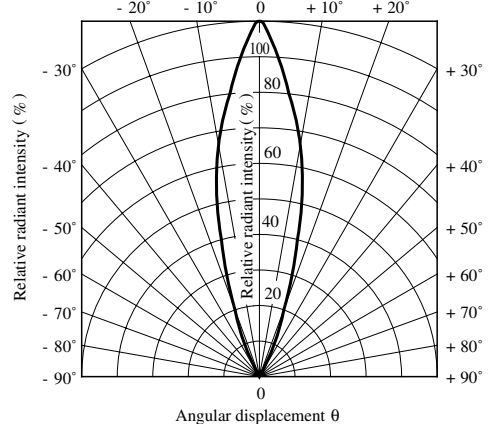
**Fig.10 Relative Collector Current vs. Distance (Detector : PD49PI)**



**Fig.11-a Radiation Diagram (GL537) (Ta = 25°C)**



**Fig.11-b Radiation Diagram (GL538) (Ta = 25°C)**



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    - Alarm equipment
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