## GL537/GL538

# ■ Features

1. High output power

 $I_E$ : TYP. 30mW/sr at  $I_F = 50mA$  (GL538)

2. Beam angle

**GL538**  $\Delta\theta$  : TYP. ± 13° **GL537**  $\Delta\theta$  : TYP. ± 25°

3. \$\phi\$ 5mm epoxy resin package

#### ■ Applications

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

#### ■ Absolute Maximum Ratings

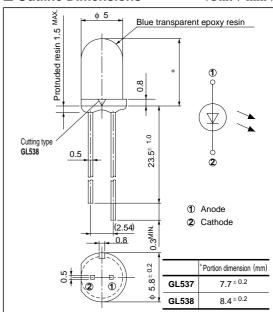
 $(Ta = 25^{\circ}C)$ 

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

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#### **■** Electro-optical Characteristics

 $(Ta = 25^{\circ}C)$ 

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage		V <sub>F</sub>	$I_F = 50 \text{mA}$	-	1.3	1.5	V
Peak forward voltage		V <sub>FM</sub>	$I_{FM} = 0.5A$	-	1.9	3.0	V
Reverse current		$I_R$	$V_R = 3V$	-	-	10	μА
Peak emission wavelength		λP	$I_F = 5mA$	-	950	-	nm
Half intensity wavelength		Δλ	$I_F = 5mA$	-	45	-	nm
*3Radiation intensity	GL537	I <sub>E</sub>	I <sub>F</sub> = 50mA	6	13	-	mW/sr
	GL538			15	30	-	
Terminal capacitance		Ct	$V_R = 0$ , $f = 1kHz$	-	50	-	pF
Response frequency		fc	-	-	300	-	kHz
Half intensity angle	GL537	Δθ	I <sub>F</sub> = 20mA	-	± 25	-	۰
	GL538			-	± 13	-	۰

<sup>\*3</sup> I E: 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.

<sup>\*1</sup> Pulse width $\leq$ =100  $\mu$  s, Duty ratio = 0.01

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



Fig. 1 Forward Current vs.

Ambient Temperature

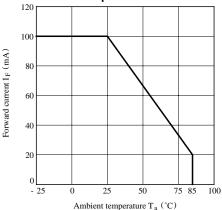


Fig. 3 Spectral Distribution

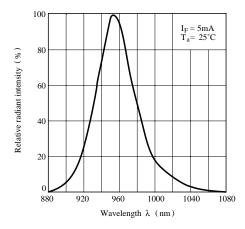


Fig. 5 Forward Current vs. Forward Voltage

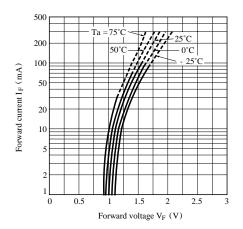


Fig. 2 Peak Forward Current vs. Duty Ratio

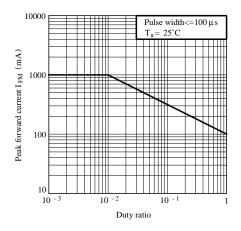


Fig. 4 Peak Emission Wave length vs.
Ambient Temperature

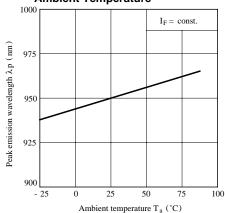


Fig. 6 Relative Forward Voltage vs.
Ambient Temperature

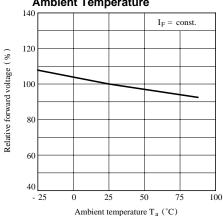


Fig. 7 Relative Output vs. Ambient Temperature (Detector : PD410PI)

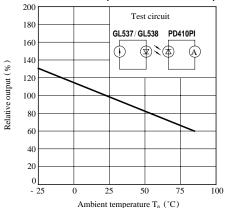


Fig. 9 Relative Collector Current vs.
Distance (Detector : PD410PI)

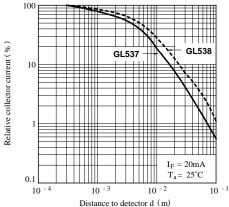
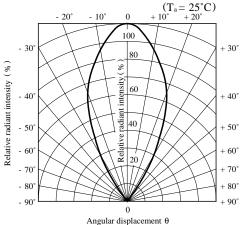


Fig.11-a Radiation Diagram (GL537)



• Please refer to the chapter "Precautions for Use."

Fig. 8 Radiation Intensity vs. Peak Forward Current

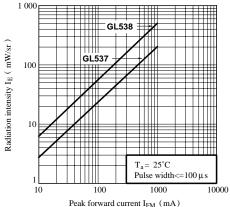


Fig.10 Relative Collector Current vs.
Distance (Detector: PD49PI)

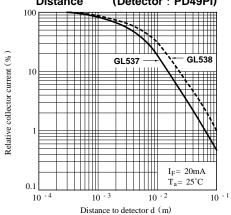
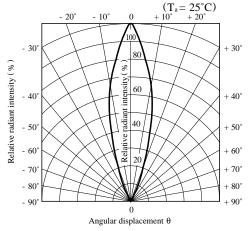


Fig.11-b Radiation Diagram (GL538)



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- Telecommunication equipment [terminal]
- Test and measurement equipment
- Industrial control
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- Alarm equipment
- Various safety devices, etc.
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