

GL550/GL551

High Speed Infrared Emitting Diode

■ Features

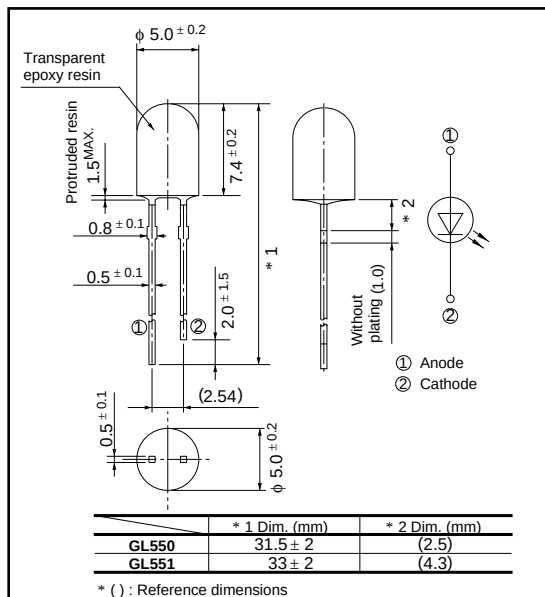
1. High speed response
Response frequency f_c : TYP. 12MHz
2. Intermediate beam angle and narrow beam angle
GL550 half intensity angle : TYP. $\pm 22^\circ$
GL551 half intensity angle : TYP. $\pm 10^\circ$
3. High output type optical output : TYP. 15mW

■ Applications

1. Audio equipment
2. AV equipment

■ Outline Dimensions

(Unit : mm)



■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Forward current	I_F	100	mA
*1 Peak forward current	I_{FM}	1	A
Reverse voltage	V_R	4	V
Power dissipation	P	190	mW
Operating temperature	T_{opr}	- 20 to + 85	°C
Storage temperature	T_{stg}	- 30 to + 100	°C
*2 Soldering temperature	T_{sol}	260	°C

*1 Pulse width 100 μs, Duty ratio=0.01

*2 For MAX. 3 seconds at the position of 3.0 mm from the resin edge

■ Electro-optical Characteristics

(Ta=25 °C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage		V_F	$I_F = 50\text{mA}$	-	1.5	1.75	V
Peak forward voltage		V_{FM}	$I_{FM} = 0.5\text{A}$	-	-	3.5	V
Reverse current		I_R	$V_R = 3\text{V}$	-	-	10	μA
Terminal capacitance		C_t	$V_R = 0, f = 1\text{MHz}$	-	70	-	pF
Radiant flux		Φ_e	$I_F = 50\text{mA}$	10	-	22	mW
Peak emission wavelength		λ_p	$I_F = 50\text{mA}$	850	880	900	nm
Half intensity wavelength		$\Delta \lambda$	$I_F = 50\text{mA}$	-	40	-	nm
Half intensity angle	GL550	$\Delta \theta$	$I_F = 50\text{mA}$	-	± 22	-	$^\circ$
	GL551			-	± 10	-	$^\circ$
Response frequency		$^*3 f_c$	$I_F = 50\text{mA} + 10\text{mA}_{p-p}$	-	12	-	MHz

*3 Frequency to bring about -3dB reduction of modulated radiant flux from 100Hz

Fig. 1 Forward Current vs. Ambient Temperature

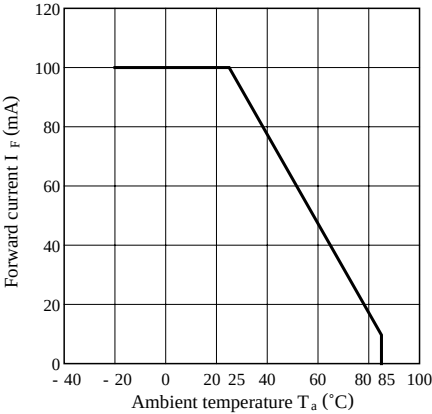


Fig. 2 Peak Forward Current vs. Duty Ratio

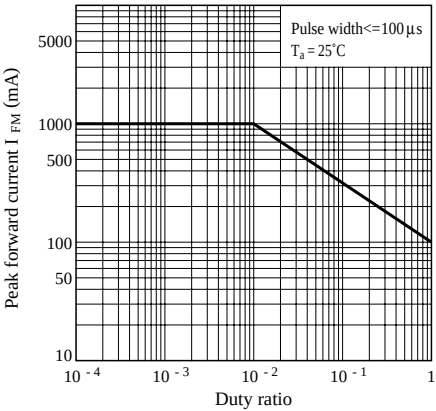


Fig. 3 Spectral Distribution

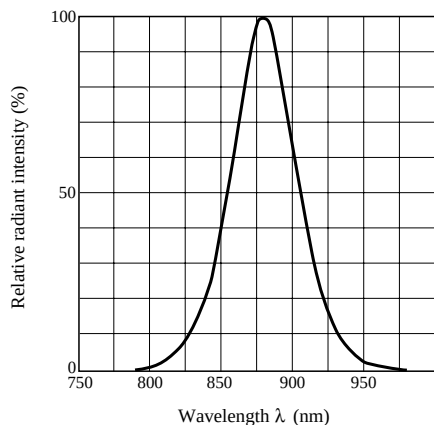


Fig. 4 Peak Emission Wavelength vs. Ambient Temperature

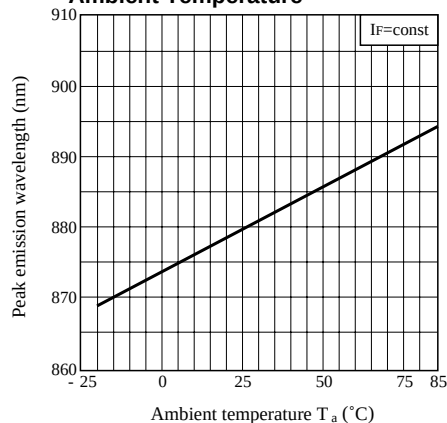


Fig. 5 Forward Current vs. Forward Voltage

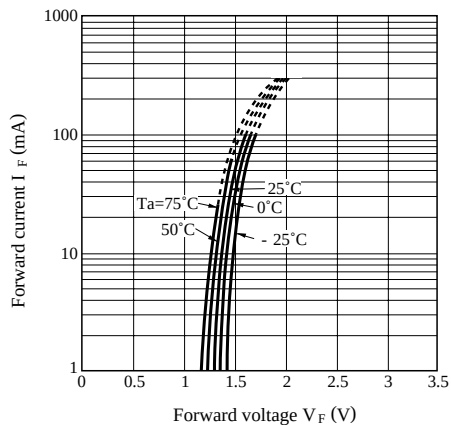


Fig. 6 Relative Radiant Flux vs. Ambient Temperature

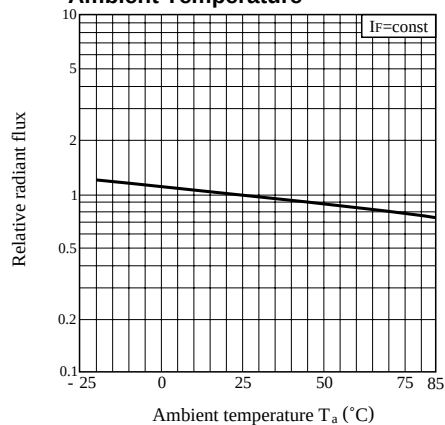


Fig. 7 Relative Radiant Output vs. Ambient Temperature (PD413PI)

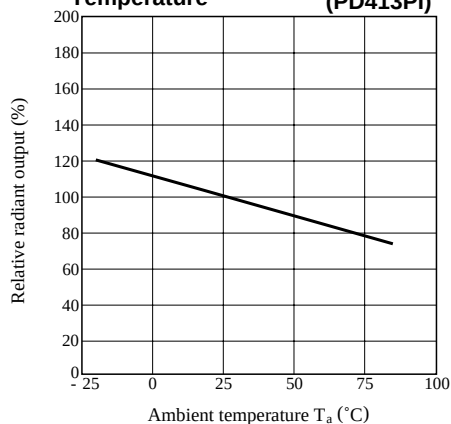


Fig. 8 Radiant Flux vs. Forward Current

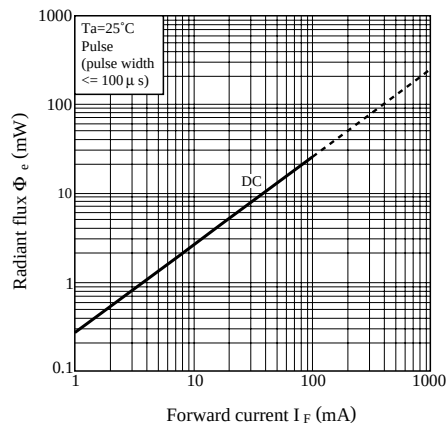


Fig. 9 Relative Collector Current vs. Distance
(Detector : PD413PI)

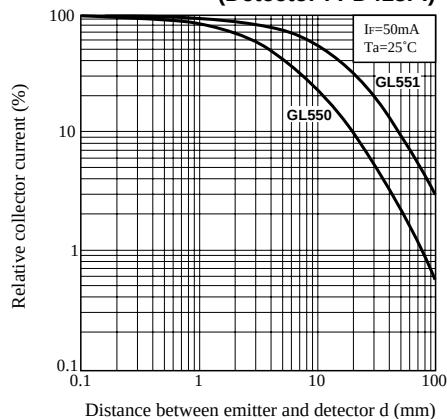


Fig. 10 Relative Radiant Intensity vs. Distance

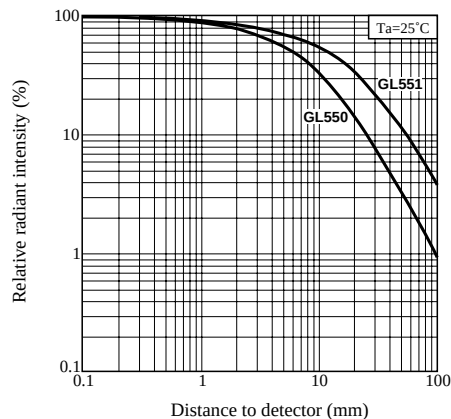


Fig. 11 Radiation Diagram (GL550) ($T_a = 25^\circ\text{C}$)

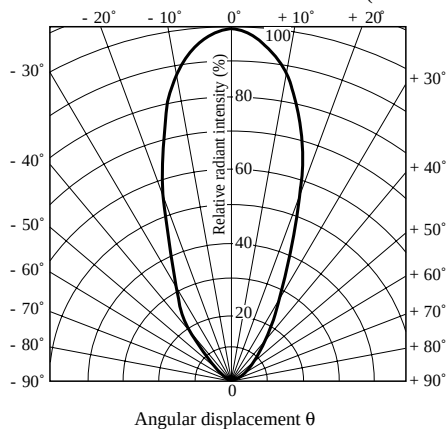
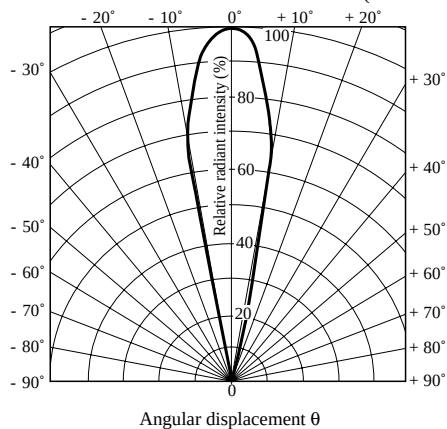


Fig. 12 Radiation Diagram (GL551) ($T_a = 25^\circ\text{C}$)



● Please refer to the chapter "Precautions for Use". (Page 78 to 93)

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