GL550/GL551

High Speed Infrared Emitting Diode

■ Features

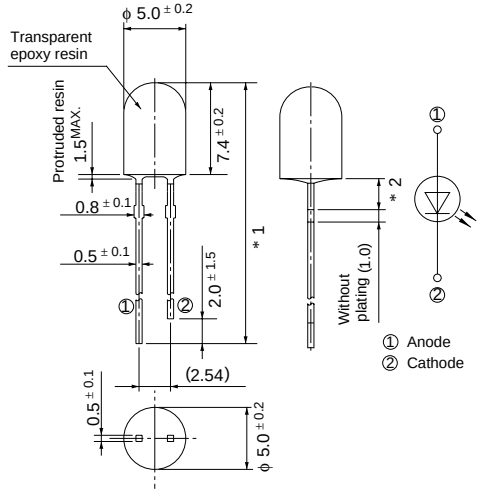
1. High speed response
   Response frequency fc : TYP. 12MHz
2. Intermediate beam angle and narrow beam angle
   GL550 half intensity angle : TYP. ± 22˚
   GL551 half intensity angle : TYP. ± 10˚
3. High output type optical output : TYP. 15mW

■ Applications

1. Audio equipment
2. AV equipment

■ Outline Dimensions

(Unit : mm)



	* 1 Dim. (mm)	* 2 Dim. (mm)
GL550	31.5 ± 2	(2.5)
GL551	33 ± 2	(4.3)

* ( ) : Reference dimensions

■ Absolute Maximum Ratings

(Ta=25˚C)

Parameter	Symbol	Rating	Unit
Forward current	I_F	100	mA
*1Peak 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
*2Soldering temperature	T_{sol}	260	˚C

*1 Pulse width 100 μ s, Duty ratio=0.01

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

" In the absence of confirmation by device specification sheets, SHARP takes no responsibility for any defects that occur in equipment using any of SHARP's devices, shown in catalogs, data books, etc. Contact SHARP in order to obtain the latest version of the device specification sheets before using any SHARP's device."

■ Electro-optical Characteristics

(Ta=25 ˚C)

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

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

Fig. 1 Forward Current vs. Ambient Temperature

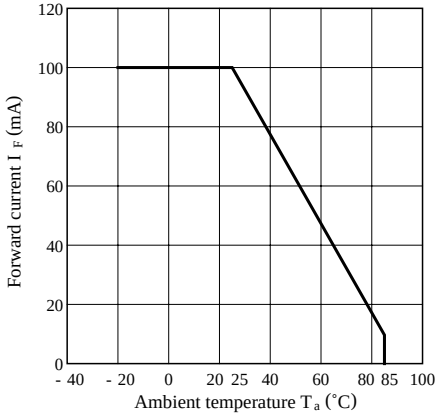


Fig. 2 Peak Forward Current vs. Duty Ratio

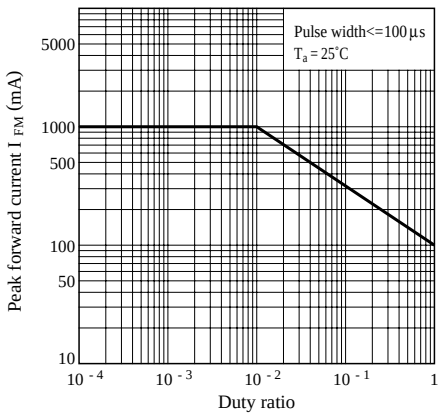


Fig. 3 Spectral Distribution

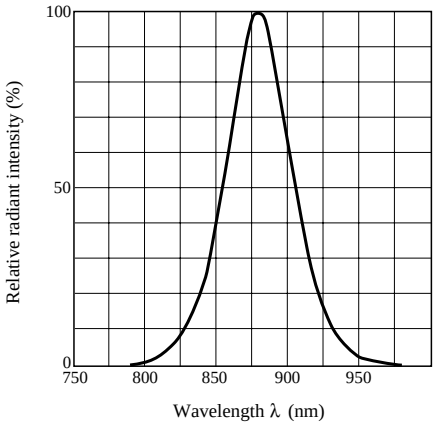


Fig. 4 Peak Emission Wavelength vs. Ambient Temperature

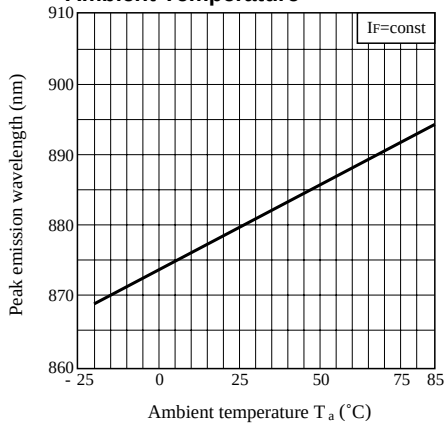


Fig. 5 Forward Current vs. Forward Voltage

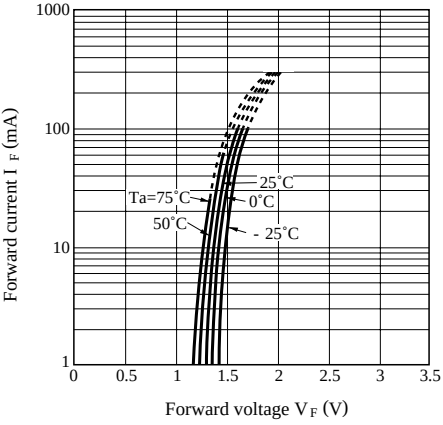


Fig. 6 Relative Radiant Flux vs. Ambient Temperature

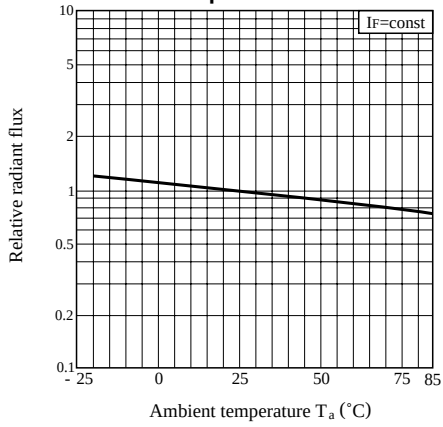


Fig. 7 Relative Radiant Output vs. Ambient Temperature (PD413PI)

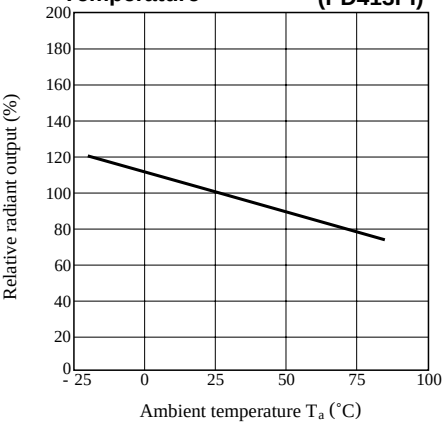


Fig. 8 Radiant Flux vs. Forward Current

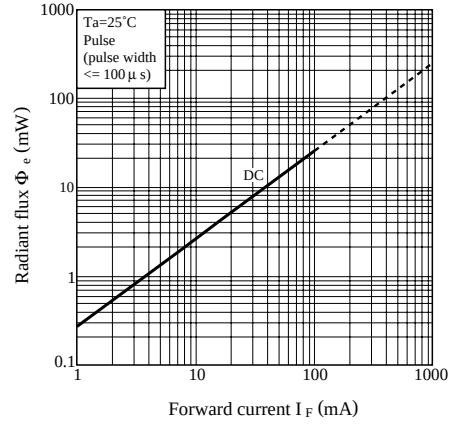


Fig. 9 Relative Collector Current vs. Distance (Detector : PD413PI)

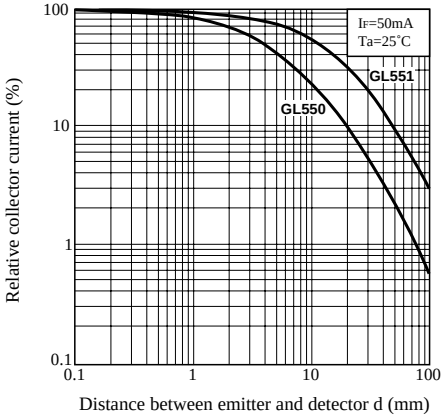


Fig. 10 Relative Radiant Intensity vs. Distance

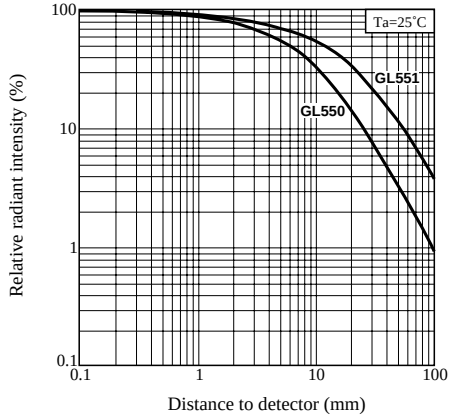


Fig. 11 Radiation Diagram (GL550)

(Ta=25 ˚C)

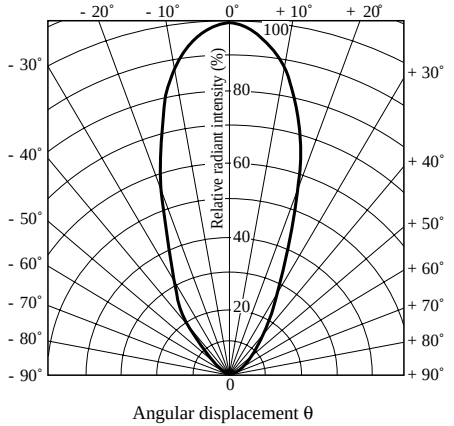
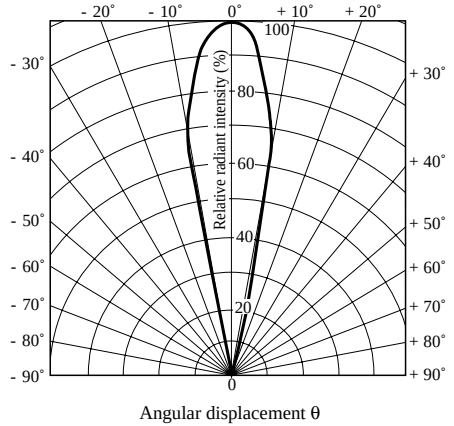


Fig. 12 Radiation Diagram (GL551)

(Ta=25 ˚C)



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