

# GL514/GL513F

## TO-18 Type Infrared Emitting Diode

### ■ Features

- Output : **GL514**  $\Phi_e$  MIN. 3.31mW at  
 $I_F = 100\text{mA}$   
**GL513F**  $\Phi_e$  MIN. 1.44mW at  
 $I_F = 100\text{mA}$
- Beam angle : **GL514**  $\Delta\theta$  : TYP.  $\pm 7^\circ$   
**GL513F**  $\Delta\theta$  : TYP.  $\pm 50^\circ$
- To- 18 type standard package
- High reliability, long operation life

### ■ Applications

- Optoelectronic switches
- Smoke detectors
- Infrared applied systems

### ■ Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Rating	Unit
Power dissipation	P	250	mW
Forward current	$I_F$	150	mA
<sup>*1</sup> Peak forward current	$I_{FM}$	2	A
Reverse voltage	$V_R$	6	V
Operating temperature	$T_{opr}$	- 40 to + 125	$^\circ\text{C}$
Storage temperature	$T_{stg}$	- 55 to + 125	$^\circ\text{C}$
<sup>*2</sup> Soldering temperature	$T_{sol}$	260	$^\circ\text{C}$

<sup>\*1</sup> Pulse width  $\leq 200\mu\text{s}$

Duty ratio = 0.01

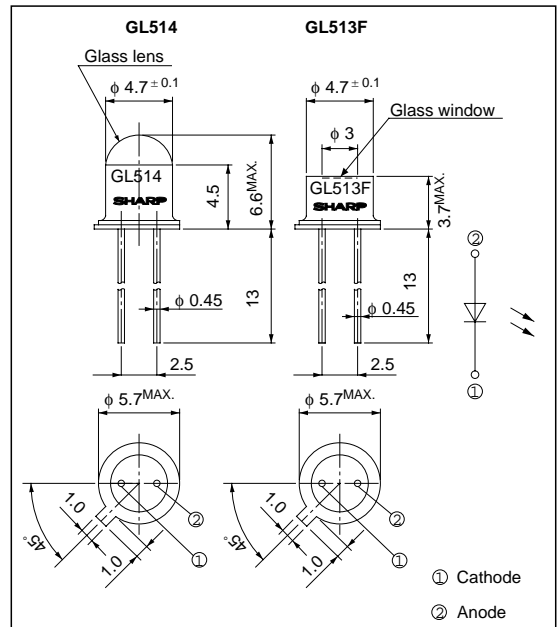
<sup>\*2</sup> For 10 seconds at the position of 1.3mm from the bottom face of can package.

### ■ Electro-optical Characteristics ( $T_a = 25^\circ\text{C}$ )

Parameter	Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage	$V_F$	$I_F = 100\text{mA}$	-	1.35	1.6	V
Peak forward voltage	$V_{FM}$	$I_{FM} = 1.5\text{A}$	-	2.75	4.0	V
Reverse current	$I_R$	$V_R = 5\text{V}$	-	-	100	$\mu\text{A}$
Terminal capacitance	$C_t$	$V = 0, f = 1\text{MHz}$	-	70	-	pF
<sup>*3</sup> Radiant flux	<b>GL514</b>	$I_F = 100\text{mA}$	3.31	5.35	10.0	mW
	<b>GL513F</b>		1.44	2.88	-	mW
Peak emission wavelength	$\lambda_p$	$I_F = 100\text{mA}$	-	950	-	nm
Half intensity wavelength	$\Delta\lambda$	$I_F = 100\text{mA}$	-	45	-	nm

### ■ Outline Dimensions

(Unit : mm)

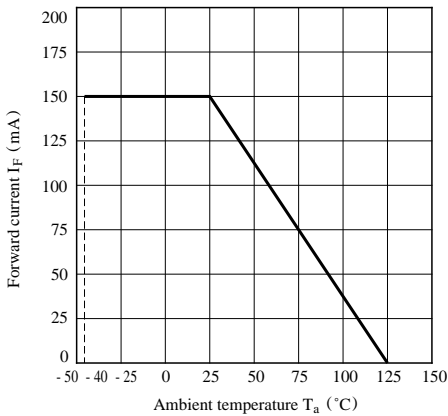


**\*3 Classification Table of Radiant Flux**

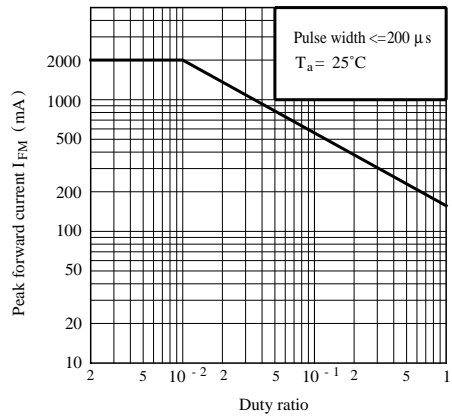
Model No.	Rank Mark	$\Phi_e$ (mW)
<b>GL514A</b>	A	5.35 to 10.0
<b>GL514</b>	-	3.31 to 10.0

at  $I_F = 100\text{mA}$ ,  $T_a = 25^\circ\text{C}$

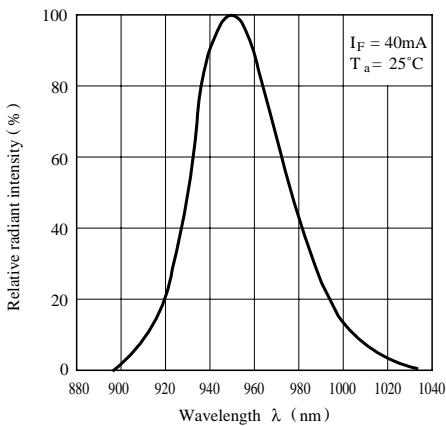
**Fig. 1 Forward Current vs. Ambient Temperature**



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



**Fig. 3 Spectral Distribution**



**Fig. 4 Peak Emission Wavelength vs. Ambient Temperature**

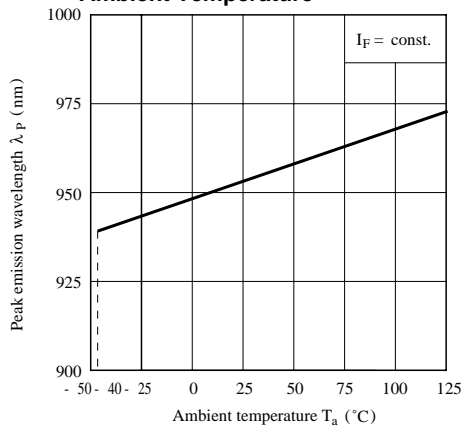


Fig. 5 Forward Current vs. Forward Voltage

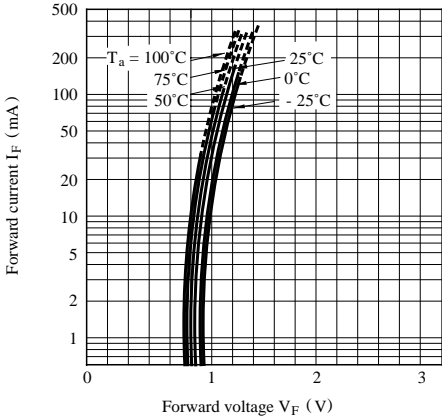


Fig. 6 Relative Radiant Flux vs. Ambient Temperature

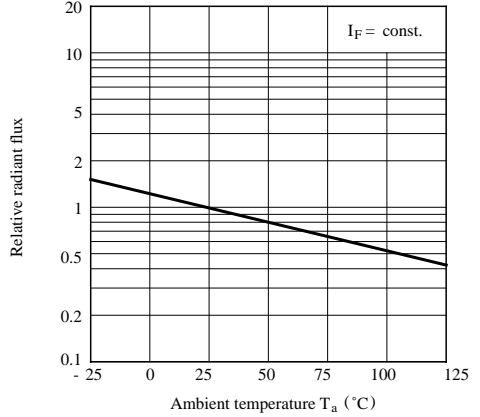


Fig. 7 Radiant Flux vs. Forward Current (GL514)

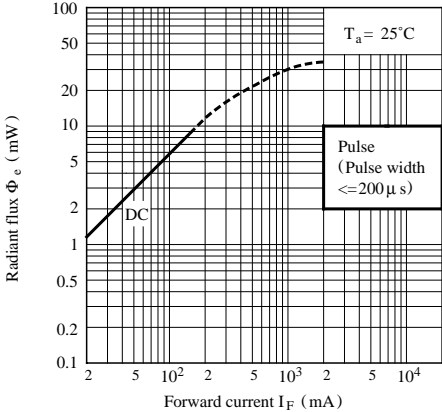


Fig. 8 Radiant Flux vs. Forward Current (GL513F)

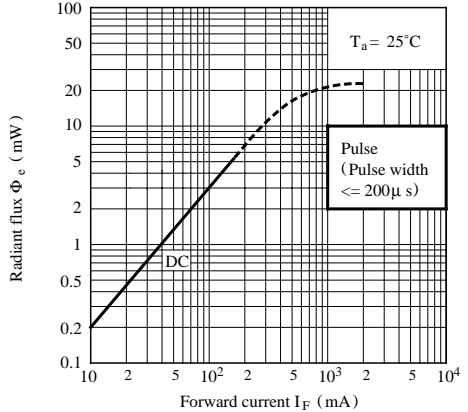


Fig. 9 Relative Radiant Intensity vs. Distance (GL514)

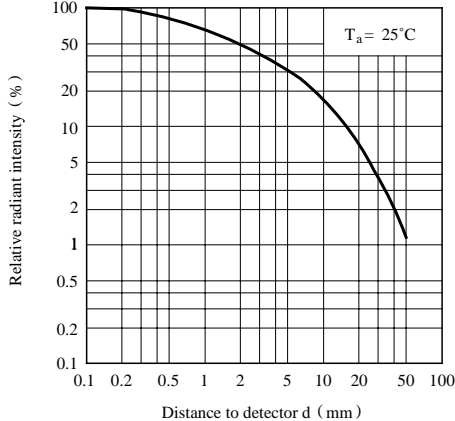
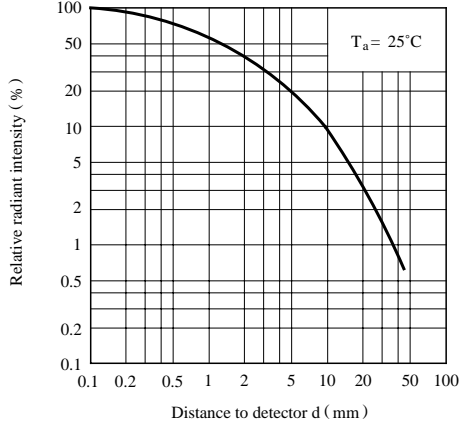
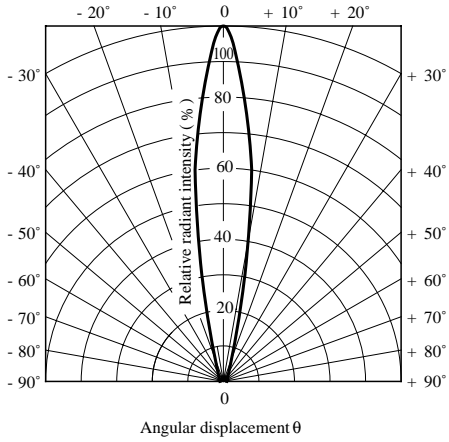
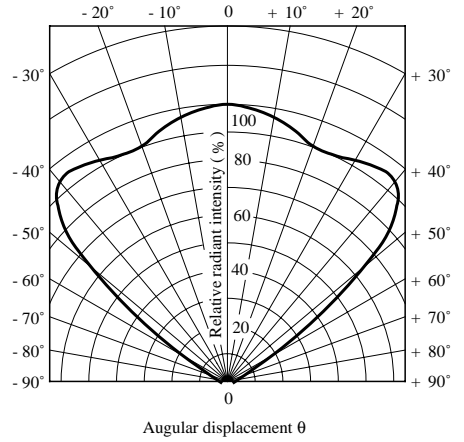


Fig. 10 Relative Radiant Intensity vs. Distance (GL513F)



**Fig.11 Radiation Diagram (GL514)** $(T_a = 25^\circ\text{C})$ **Fig.12 Radiation Diagram (GL513F)** $(T_a = 25^\circ\text{C})$ 

● Please refer to the chapter “Precautions for Use.”