

# GL380/GL381

## High Output, $\phi$ 3mm Resin Mold Type Infrared Emitting Diode

### ■ Features

- High output  
( $I_E$  : MIN. 4.5mW/sr at  $I_F = 50\text{mA}$ , GL380)  
( $I_E$  : MIN. 8.5mW/sr at  $I_F = 50\text{mA}$ , GL381 )
- Compact  $\phi 3\text{mm}$  resin mold package
- Narrow beam angle ( $\Delta\theta$  : TYP. +13°)

### ■ Applications

- Floppy disk drives
- Optoelectronic switches
- Infrared applied systems

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

Parameter	Symbol	Rating	Unit
Forward current	$I_F$	60	mA
*1 Peak forward current	$I_{FM}$	1	A
Reverse voltage	$V_R$	6	V
Power dissipation	P	150	mW
Operating temperature	$T_{opr}$	-25 to +85	°C
Storage temperature	$T_{stg}$	-40 to +85	°C
*2 Soldering temperature	$T_{sol}$	260	°C

\*1 Pulse width  $\leq 100 \mu\text{s}$ , Duty ratio = 0.01

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

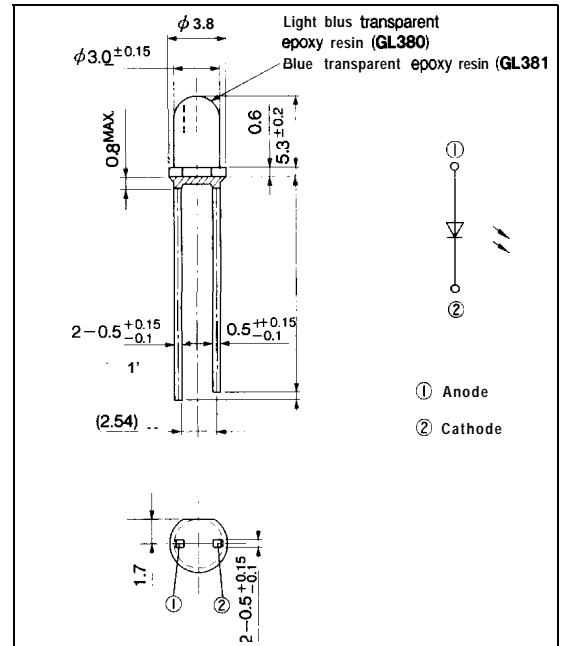
### ■ Electro-optical Characteristics

( $T_a = 25^\circ\text{C}$ )

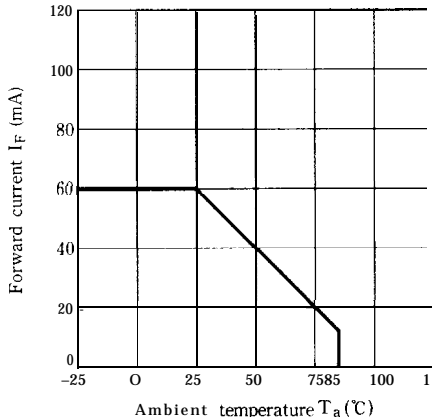
Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Forward voltage		$V_F$	$I_F = 50\text{mA}$	-	1.3	1.5	V
Peak forward voltage		$V_{FM}$	$I_{FM} = 0.5\text{A}$	-	2.2	3.5	v
Reverse current		$I_R$	$V_R = 3\text{V}$	-	-	10	$\mu\text{A}$
*3 Radiant intensity	GL380	$I_E$	$I_F = 50\text{mA}$	4.5	11	-	mW/sr
	GL381			8.5	20	-	
Peak emission wavelength		$\lambda_P$	$I_F = 5\text{mA}$	-	950	-	nm
Half intensity wavelength		$\Delta\lambda$	$I_F = 5\text{mA}$	-	45	-	nm
Terminal capacitance		$C_t$	$V_R = 0, f = 1\text{MHz}$	-	70	-	pF
Response frequency		$f_c$		-	300	-	kHz
Half intensity angle		$\Delta\theta$	$I_F = 20\text{mA}$		$\pm 13$	-	

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

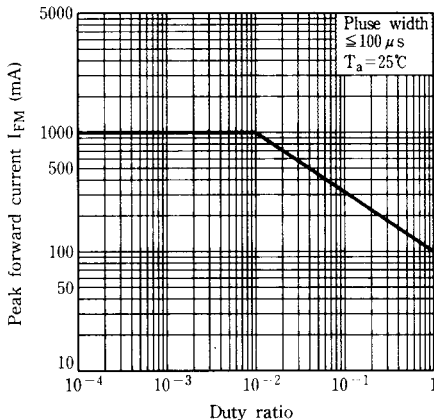
### ■ Outline Dimensions (Unit : mm)



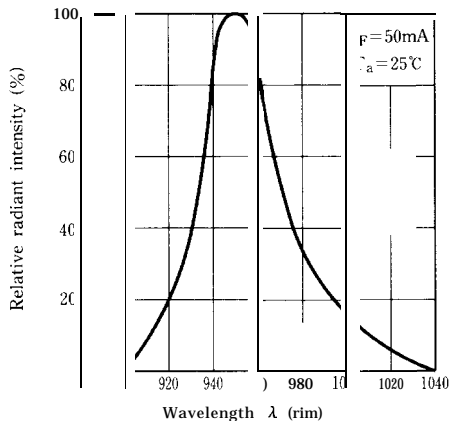
**Fig. 1 Forward Current vs. Ambient Temperature**



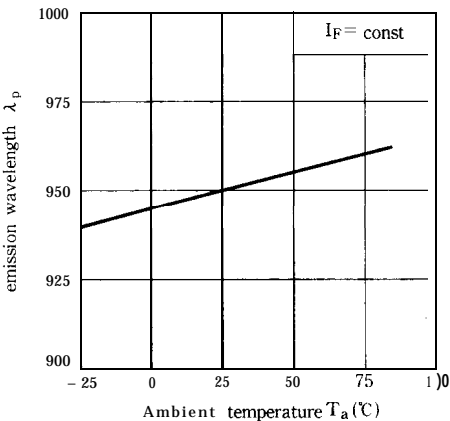
**Fig. 2 Peak Forward Current vs. Duty Ratio**



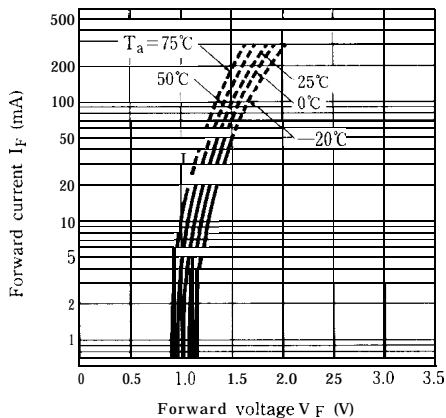
**Fig. 3 Spectral Distribution**



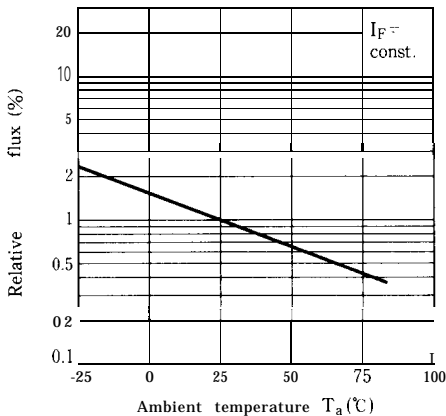
**Fig. 4 Peak Emission Wavelength vs. Ambient Temperature**



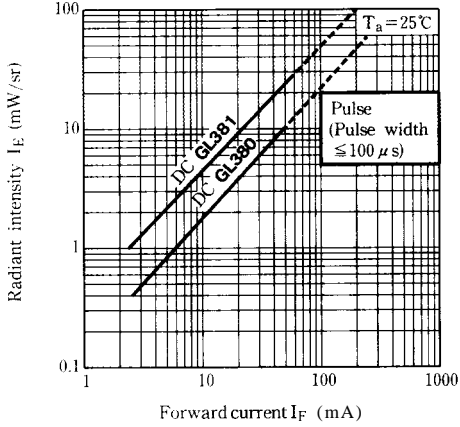
**Fig. 5 Forward Current vs. Forward Voltage**



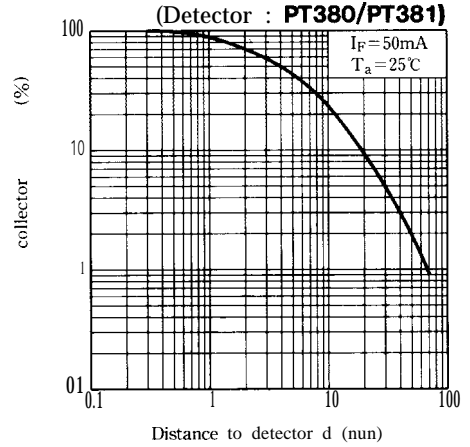
**Fig. 6 Relative Radiant Flux vs. Ambient Temperature**



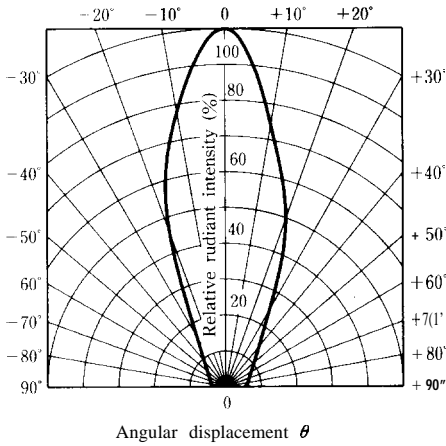
**Fig. 7 Radiant Intensity vs. Forward Current**



**Fig. 8 Relative Collector Current vs. Distance**



**Fig. 9 Radiation Diagram**



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