

SHARP EL8K/ MELEC DIV
Infrared Light Emitting Diodes

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GL527/GL528/GL537/GL538

GL527/GL528

GL537/GL538

φ5mm Resin Mold Type Infrared Light Emitting Diode

T-41-11

Features

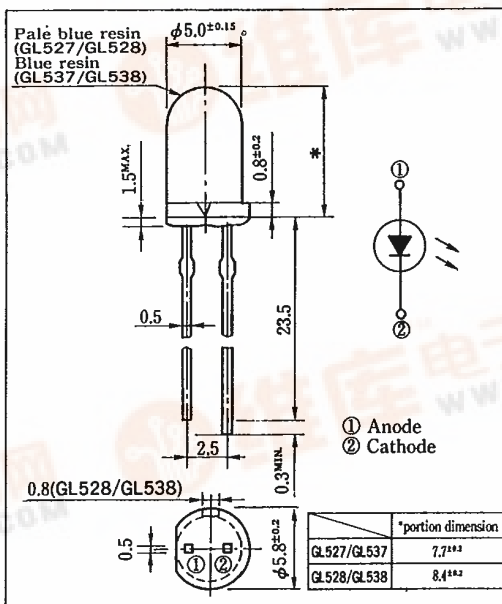
- High output power
GL528
 I_E : MIN. 12mW/sr at $I_F=50\text{mA}$
GL538
 I_E : MIN. 15mW/sr at $I_F=50\text{mA}$
- Beam angle
GL528/GL538 $\Delta\theta$: TYP. $\pm 13^\circ$
GL527/GL537 $\Delta\theta$: TYP. $\pm 25^\circ$
- φ5mm epoxy resin package

Applications

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

Outline Dimensions

(Unit : mm)



Absolute Maximum Ratings

(Ta=25°C)

Parameter	Symbol	Rating	Unit
Power dissipation	P	150	mW
Forward current	I_F	100	mA
*1 Peak forward current	I_{FM}	1	A
Reverse voltage	V_R	6	V
Operating temperature	T_{OPR}	-25 ~ +85	°C
Storage temperature	T_{STG}	-40 ~ +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

(Ta=25°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}	$I_{FM}=0.5\text{A}$	—	1.9	3.0	V
Reverse current	I_R	$V_R=3\text{V}$	—	—	10	μA
Terminal capacitance	C_t	$V_R=0$, $f=1\text{kHz}$	—	50	140	pF
Response frequency	f_c		—	300	—	kHz
*3 Radiation intensity	GL527	$I_F=50\text{mA}$	5.0	10	—	mW/sr
	GL528		12	23	—	
	GL537		6.0	13	—	
	GL538		15	30	—	
Peak emission wavelength	λ_p	$I_F=5\text{mA}$	—	940	—	nm
Half intensity wavelength	$\Delta\lambda$	$I_F=5\text{mA}$	—	45	—	nm
Half intensity angle	GL527/GL537	$\Delta\theta$	—	± 25	—	deg.
	GL528/GL538		—	± 13	—	deg.

*3 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.

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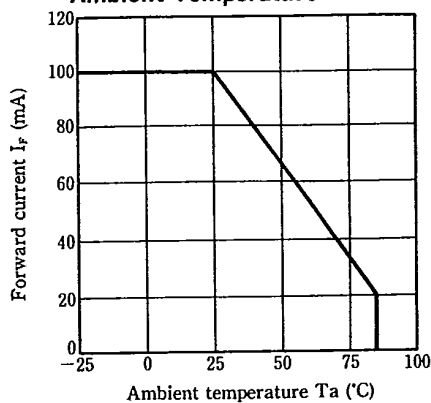
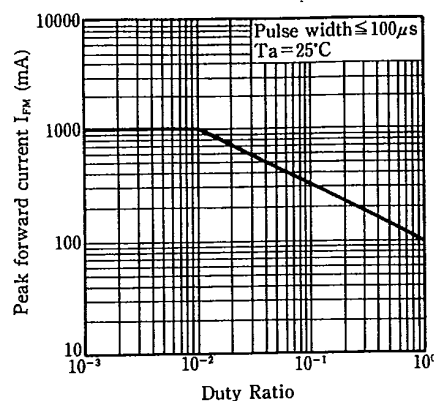
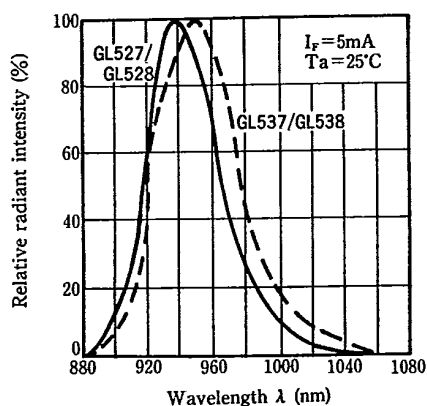
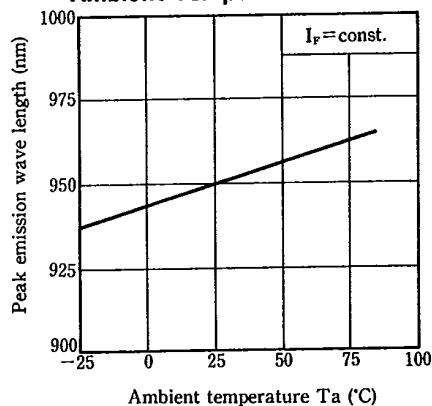
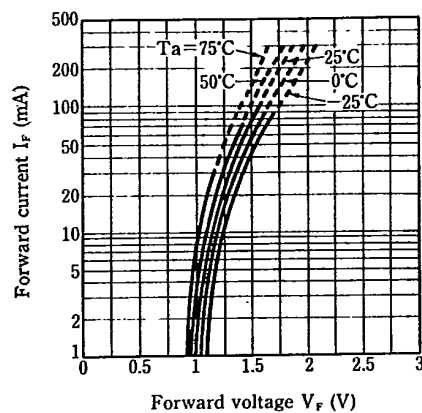
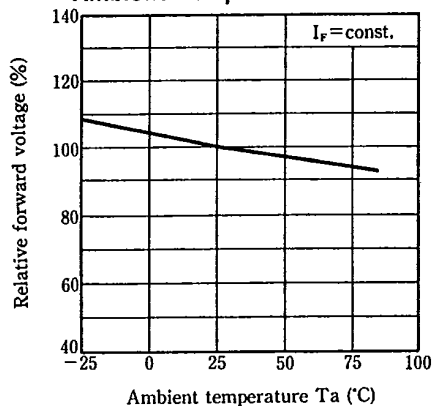
Fig. 1 Forward Current vs. Ambient Temperature**Fig. 2 Peak Forward Current vs. Duty Ratio****Fig. 3 Spectral Distribution (GL527/GL528)****Fig. 4 Peak Emission Wave length vs. Ambient Temperature****Fig. 5 Forward Current vs. Forward Voltage****Fig. 6 Relative Forward Voltage vs. Ambient Temperature**

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

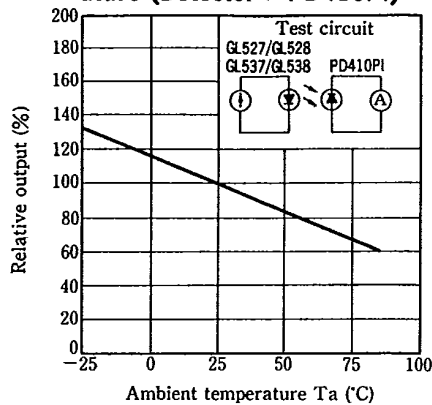


Fig. 8 Radiation Intensity vs. Peak Forward Current

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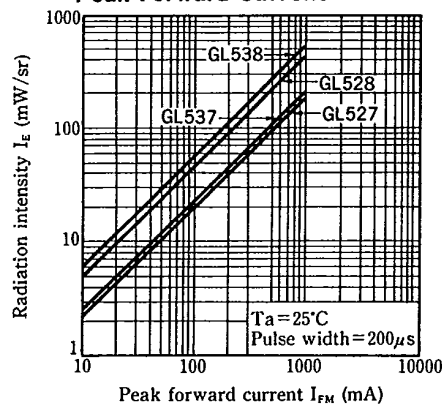


Fig. 9 Relative Collector Current vs. Distance (Detector : PD410PI) (GL527/GL537/GL528/GL538)

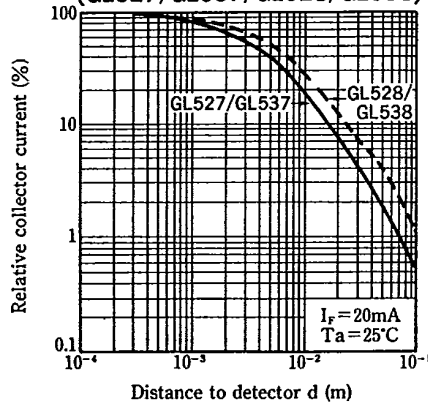


Fig. 10 Relative Collector Current vs. Distance (Detector : PD49PI) (GL527/GL537/GL528/GL538)

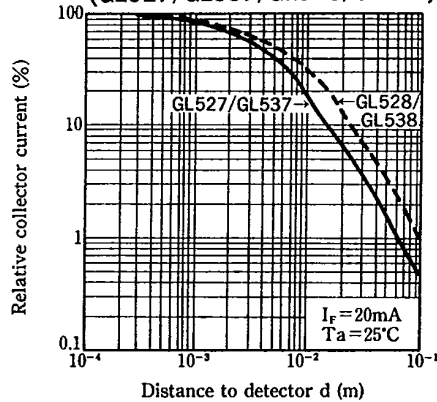


Fig. 11 Radiation Diagram (GL527/GL537) (Ta = 25°C)

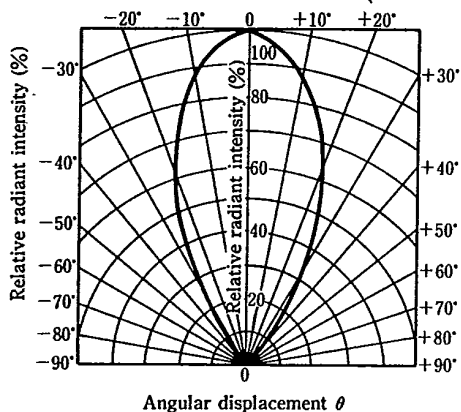


Fig. 12 Radiation Diagram (GL528/GL538) (Ta = 25°C)

