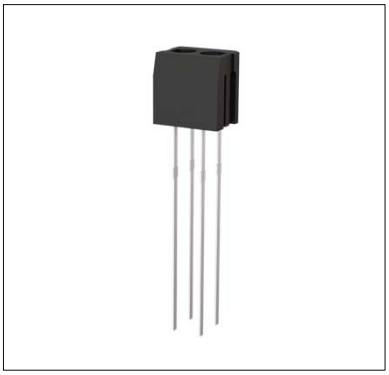
Reflective photosensor (photoreflector)

RPR-220 Datasheet

●Applications

- Compact disc players
- Copiers
- Game machines
- Office automation equipment

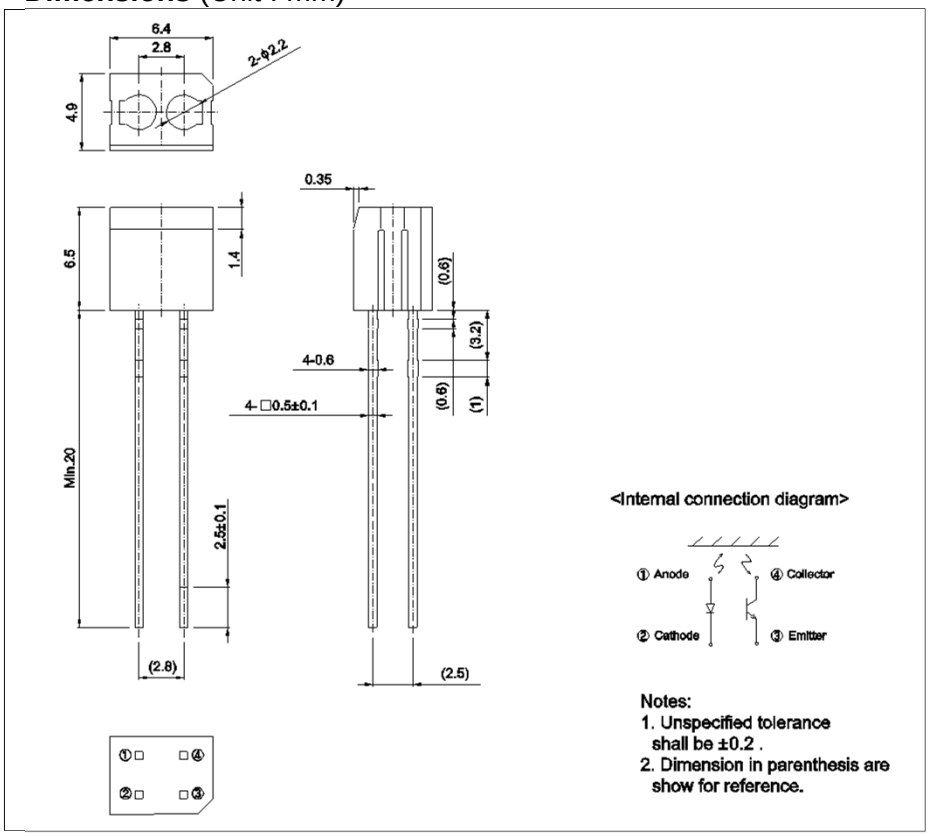
●Outline



●Features

1) A plastic lens is used for high sensitivity.
2) A built-in visible light filter minimizes the influence of stray light.
3) Lightweight and compact.

●Dimensions (Unit : mm)



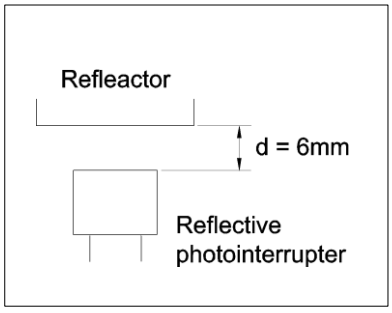
●Absolute maximum ratings (T_a = 25°C)

Parameter		Symbol	Value	Unit
Input (LED)	Forward current	I_F	50	mA
	Reverse voltage	V_R	5	V
	Power dissipation	P_D	80	mW
Output (photo-transistor)	Collector-emitter voltage	V_{CEO}	30	V
	Emitter-collector voltage	V_{ECO}	4.5	V
	Collector current	I_C	30	mA
	Collector power dissipation	P_C	80	mW
Operating temperature		T_{opr}	−25 to +85	°C
Storage temperature		T_{stg}	−30 to +85	°C

●Electrical and optical characteristics (T_a = 25°C)

Parameter		Symbol	Conditions	Values			Unit
				Min.	Typ.	Max.	
Input characteristics	Forward voltage	V_F	I_F =50mA	-	1.34	1.6	V
	Reverse current	I_R	V_R =5V	-	-	10	μA
Output characteristics	Dark current	I_{CEO}	V_{CE}=10V	-	-	0.5	μA
	Peak sensitivity wavelength	λ_p	-	-	800	-	nm
Transfer characteristics	Collector current	I_C	V_{CE} =2V, I_F=10mA *	0.08	0.3	0.8	mA
	Collector-emitter saturation voltage	$V_{CE(sat)}$	I_F =20mA, I_C=0.1mA *	-	0.1	0.3	V
	Response time	tr·tf	V_{CC} =5V, I_F=20mA, R_L=100Ω *	-	10	-	μs
Infrared light emitter diode	Cut-off frequency	f_C	I_F =50mA * Non-coherent Infrared light emitting diode used.	-	1	-	MHz
	Peak light emitting wavelength	λ_p		-	940	-	nm
Photo transistor	Response time	tr·tf	V_{CC} =5V, I_C=1mA, R_L=100Ω *This product is not designed to be protected against electromagnetic wave.	-	10	-	μs
	Maximum sensitivity wavelength	λ_p	-	-	800	-	nm

* Reflector object : Standard white paper. (Reflection ratio = 90%)



●Electrical and optical characteristics curves

Fig.1 Relative Output Current vs.Distance

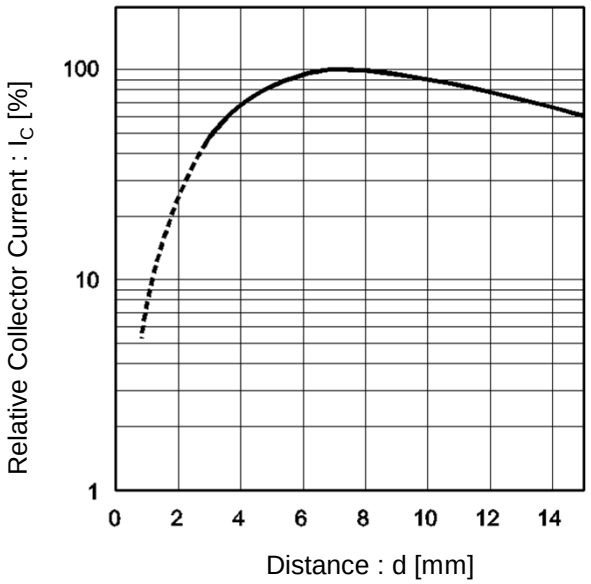


Fig.2 Forward Current vs.Ambient Temperature

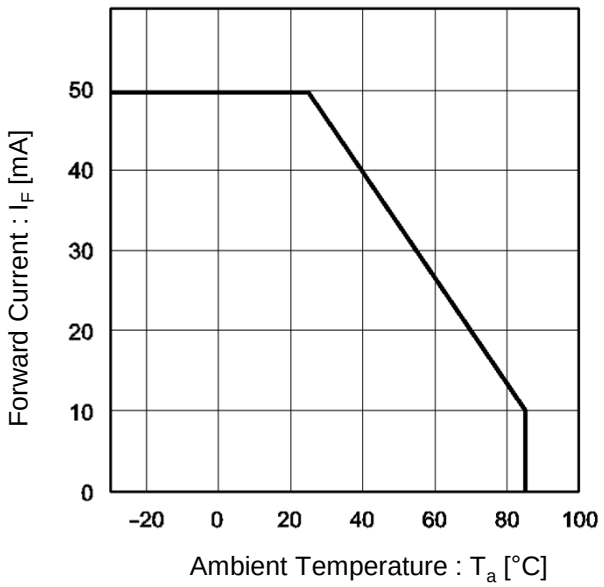


Fig.3 Forward Current vs. Forward Voltage

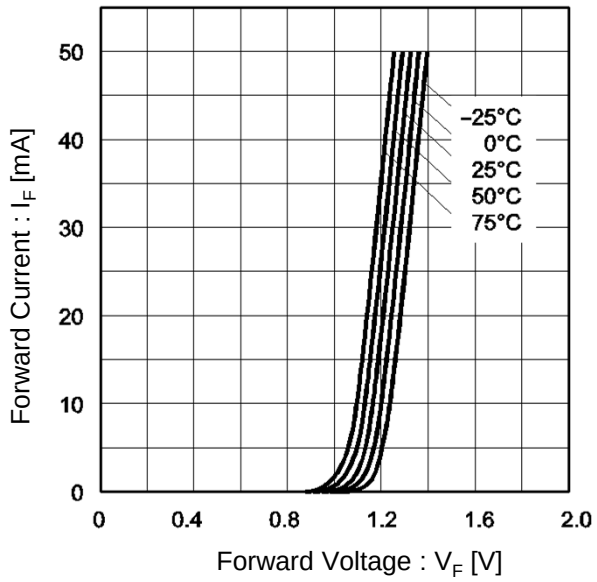
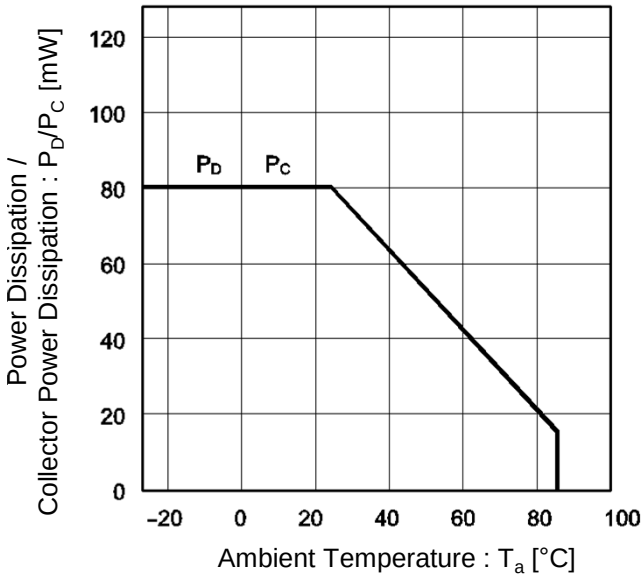


Fig.4 Power Dissipation / Collector Power Dissipation vs. Ambient Temperature



●Electrical and optical characteristics curves

Fig.5 Relative Output vs. Ambient Temperature

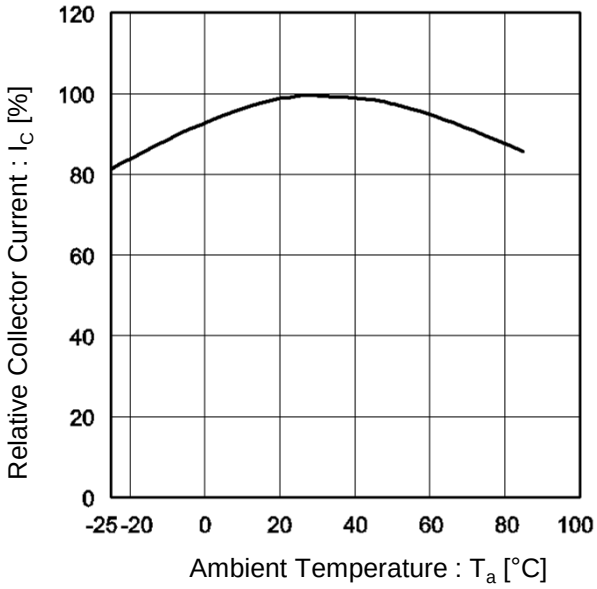


Fig.6 Collector Current vs. Forward Current

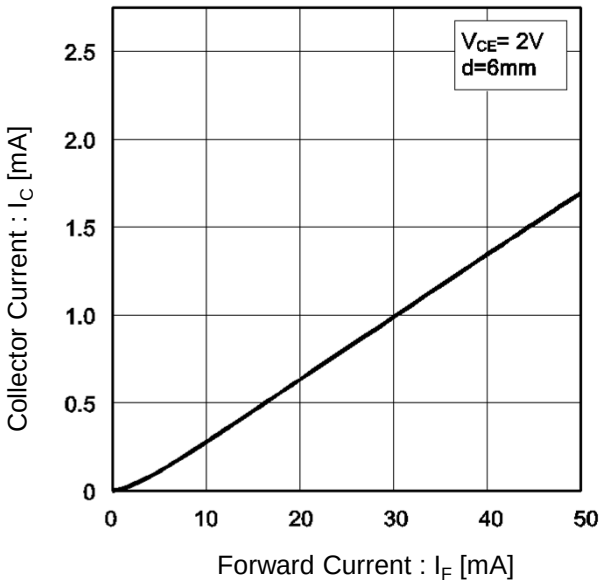


Fig.7 Output Characteristics

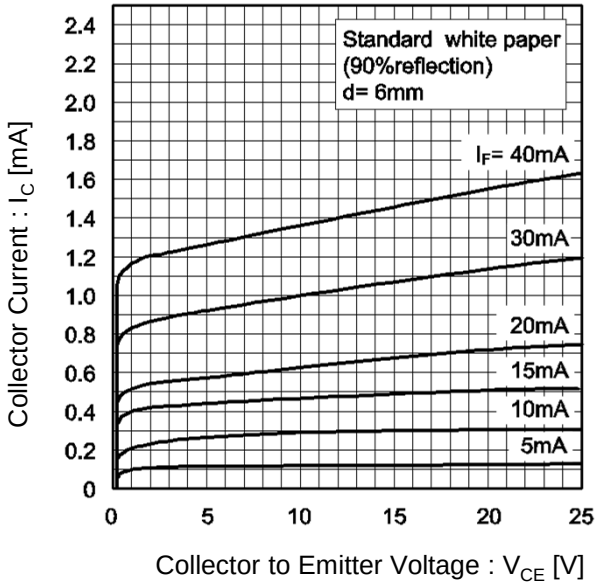
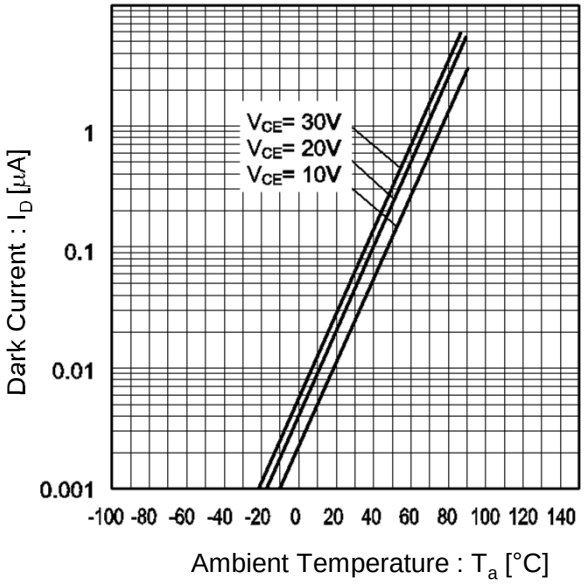


Fig.8 Dark Current vs. Ambient Temperature



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