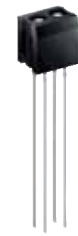


RPR-220

Reflective photosensor (photoreflector)



Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	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_{CE0}	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	

Applications

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

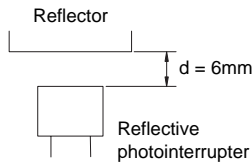
Features

- 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.

Electrical and optical characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions	
Input characteristics	Forward voltage	V_F	1.34	1.6	V	$I_F=50\text{mA}$	
	Reverse current	I_R	-	10	μA	$V_R=5\text{V}$	
Output characteristics	Dark current	I_{CE0}	-	0.5	μA	$V_{CE}=10\text{V}$	
	Peak sensitivity wavelength	λ_P	800	-	nm	-	
Transfer characteristics	Collector current	I_C	0.08	0.3	0.8	mA	$V_{CE}=2\text{V}, I_F=10\text{mA}$
	Collector-emitter saturation voltage	$V_{CE(sat)}$	-	0.1	0.3	V	$I_F=20\text{mA}, I_C=0.1\text{mA}$
	Response time	$t_r \cdot t_f$	-	10	-	μs	$V_{CE}=5\text{V}, I_F=20\text{mA}, R_L=100\Omega$
Infrared light emitting diode	Cut-off frequency	f_c	1	-	MHz	$I_F=50\text{mA}$ * Non-coherent Infrared light emitting diode used.	
	Peak light emitting wavelength	λ_P	940	-	nm	-	
Photo transistor	Response time	$t_r \cdot t_f$	10	-	μs	$V_{CC}=5\text{V}, I_C=1\text{mA}, R_L=100\Omega$ * This product is not designed to be protected against electromagnetic wave.	
	Maximum sensitivity wavelength	λ_P	800	-	nm	-	

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



Electrical and optical characteristics curves

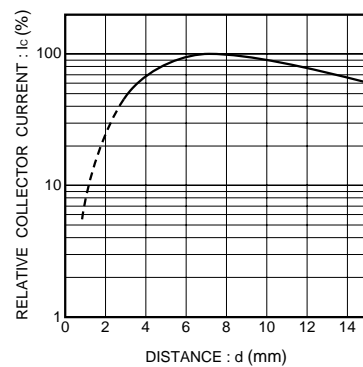


Fig.1 Relative output vs. distance

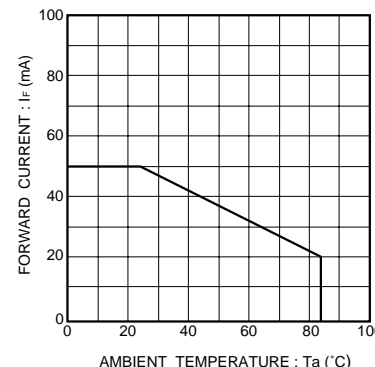


Fig.2 Forward current vs. ambient temperature

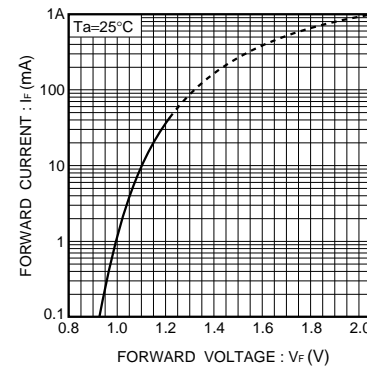


Fig.3 Forward current vs. forward voltage

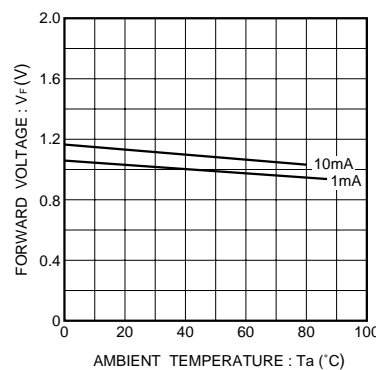


Fig.4 Forward voltage vs. ambient temperature

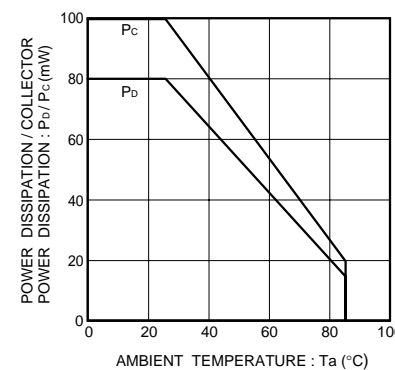


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

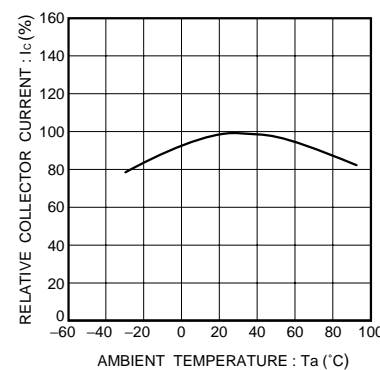


Fig.6 Relative output vs. ambient temperature

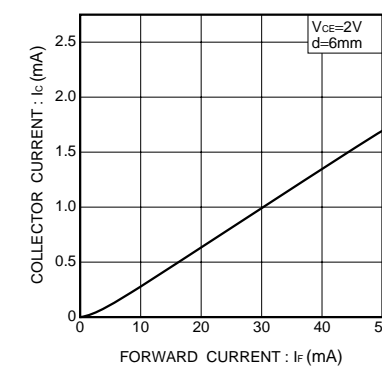


Fig.7 Collector current vs. forward current

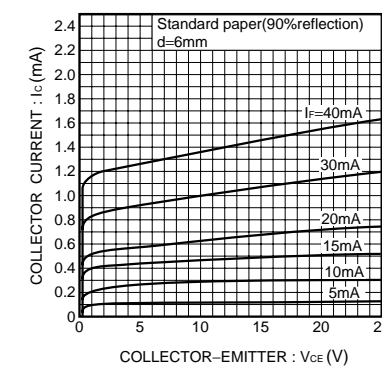


Fig.8 Output characteristics

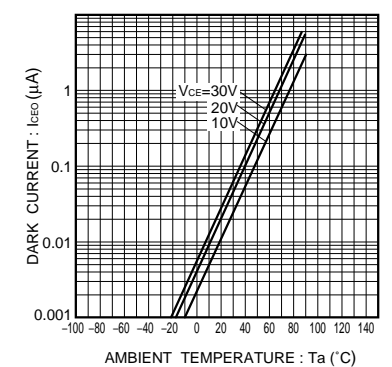
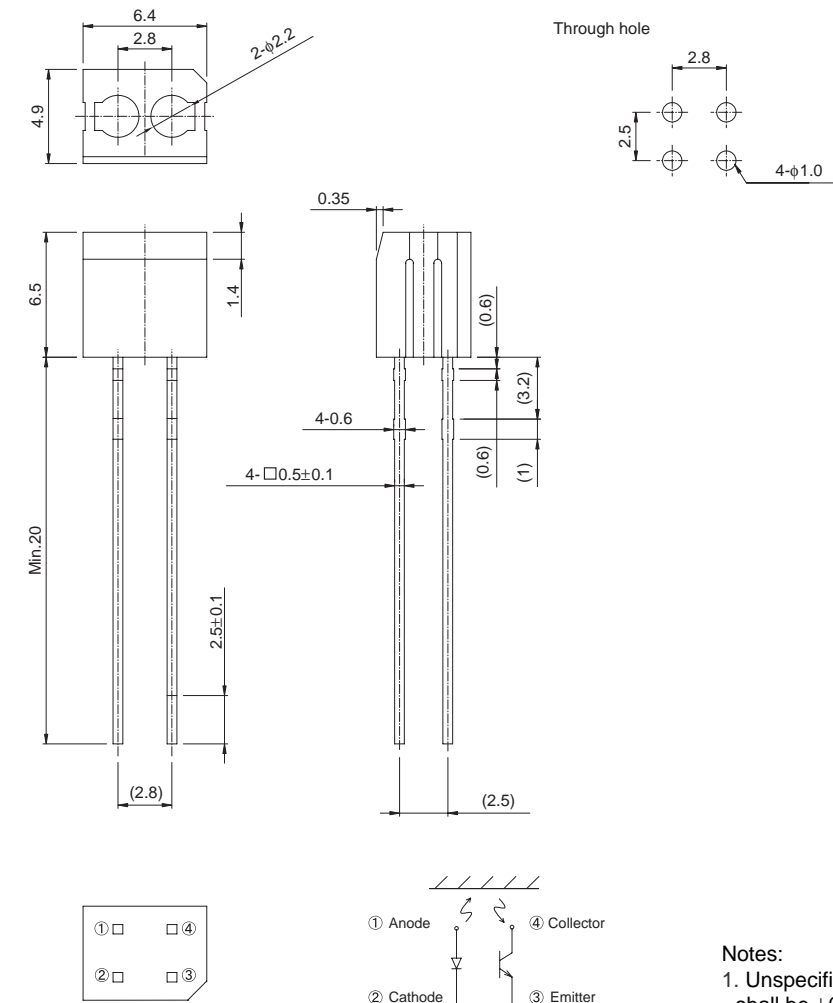


Fig.9 Dark current vs. ambient temperature

External dimensions (Unit : mm)



- Notes:
1. Unspecified tolerance shall be ± 0.2 .
 2. Dimension in parenthesis show for reference.

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