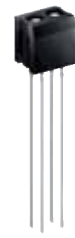


# RPR-220

## Reflective photosensor (photoreflexor)



### Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit	
Input (LED)	Forward current	I <sub>F</sub>	50	mA
	Reverse voltage	V <sub>R</sub>	5	V
	Power dissipation	P <sub>D</sub>	80	mW
Output (photo-transistor)	Collector-emitter voltage	V <sub>CEO</sub>	30	V
	Emitter-collector voltage	V <sub>ECO</sub>	4.5	V
	Collector current	I <sub>C</sub>	30	mA
	Collector power dissipation	P <sub>C</sub>	80	mW
Operating temperature	T <sub>opr</sub>	-25 to +85	°C	
Storage temperature	T <sub>stg</sub>	-30 to +85	°C	

### Applications

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

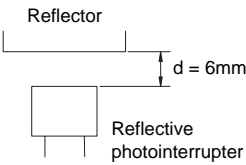
### Features

- 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 <sub>F</sub>	1.34	1.6	V	I <sub>F</sub> =50mA	
	Reverse current	I <sub>R</sub>	-	10	μA	V <sub>R</sub> =5V	
Output characteristics	Dark current	I <sub>CEO</sub>	-	0.5	μA	V <sub>CE</sub> =10V	
	Peak sensitivity wavelength	λ <sub>P</sub>	-	800	nm	-	
Transfer characteristics	Collector current	I <sub>C</sub>	0.08	0.3	0.8	mA	V <sub>CE</sub> =2V, I <sub>F</sub> =10mA
	Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	-	0.1	0.3	V	I <sub>F</sub> =20mA, I <sub>C</sub> =0.1mA
	Response time	t <sub>r</sub> ·t <sub>f</sub>	-	10	-	μs	V <sub>CE</sub> =5V, I <sub>F</sub> =20mA, R <sub>L</sub> =100Ω
Infrared light emitting diode	Cut-off frequency	f <sub>c</sub>	-	1	-	MHz	I <sub>F</sub> =50mA * Non-coherent Infrared light emitting diode used.
	Peak light emitting wavelength	λ <sub>P</sub>	-	940	-	nm	-
Photo transistor	Response time	t <sub>r</sub> ·t <sub>f</sub>	-	10	-	μs	V <sub>CC</sub> =5V, I <sub>C</sub> =1mA, R <sub>L</sub> =100Ω * This product is not designed to be protected against electromagnetic wave.
	Maximum sensitivity wavelength	λ <sub>P</sub>	-	800	-	nm	-

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



### Electrical and optical characteristics curves

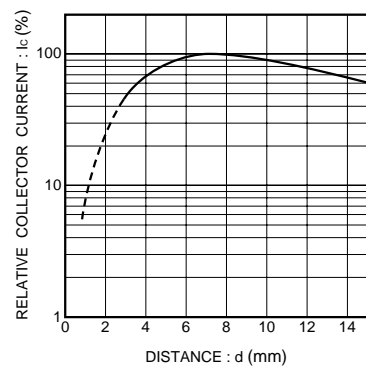


Fig.1 Relative output vs. distance

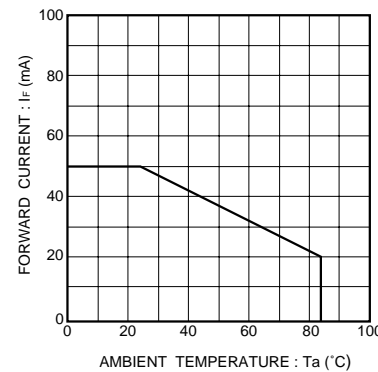


Fig.2 Forward current vs. ambient temperature

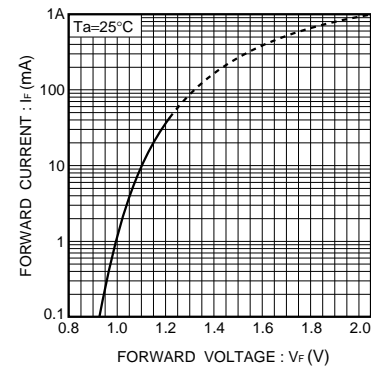


Fig.3 Forward current vs. forward voltage

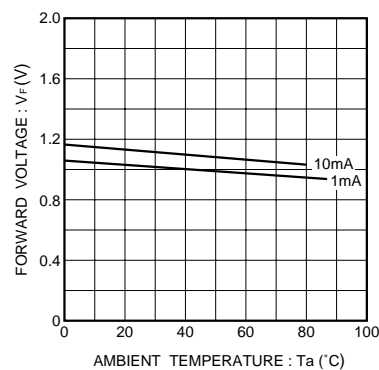


Fig.4 Forward voltage vs. ambient temperature

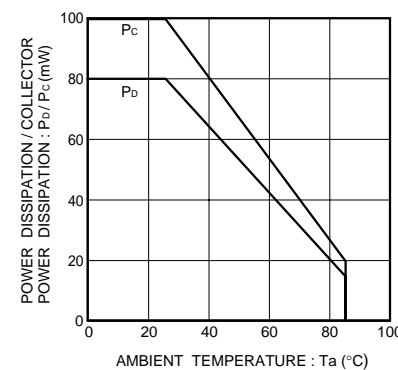


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

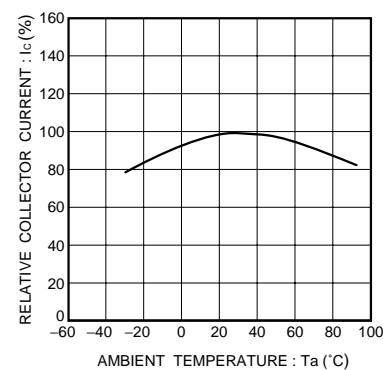


Fig.6 Relative output vs. ambient temperature

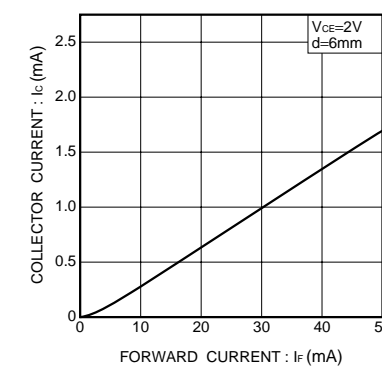


Fig.7 Collector current vs. forward current

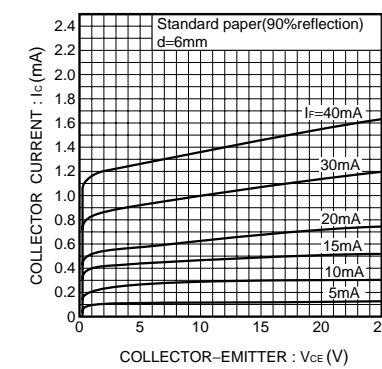


Fig.8 Output characteristics

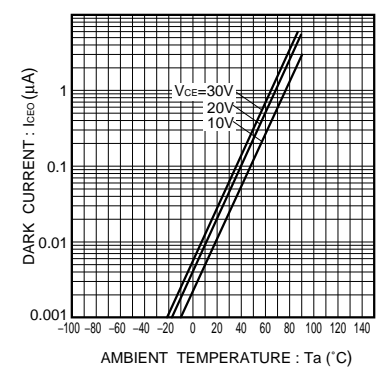
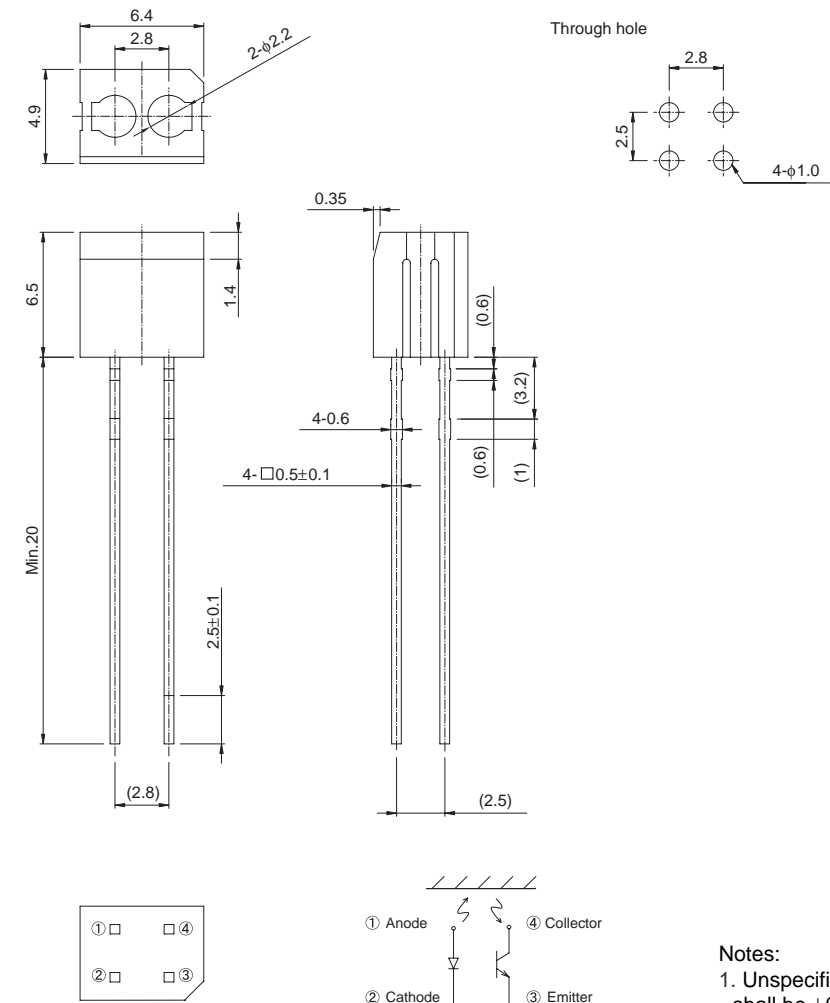


Fig.9 Dark current vs. ambient temperature

### External dimensions (Unit : mm)



### Notes:

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

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