

RPR-220

Reflective photosensor (photoreflexor)

Absolute maximum ratings (Ta=25°C)

Parameter		Symbol	Limits	Unit
Input (LED)	Forward current	IF	50	mA
	Reverse voltage	VR	5	V
	Power dissipation	PD	80	mW
Output (photo-transistor)	Collector-emitter voltage	VCEO	30	V
	Emitter-collector voltage	VECO	4.5	V
	Collector current	IC	30	mA
	Collector power dissipation	PC	80	mW
Operating temperature		Topr	-25 to +85	°C
Storage temperature		Tstg	-30 to +85	°C

Electrical and optical characteristics (Ta=25°C)

Parameter		Symbol	Min.	Typ.	Max.	Unit	Conditions
Input characteristics	Forward voltage	VF	—	1.34	1.6	V	IF=50mA
	Reverse current	IR	—	—	10	μA	VR=5V
Output characteristics	Dark current	ICEO	—	—	0.5	μA	VCE=10V
	Peak sensitivity wavelength	λP	—	800	—	nm	—
Transfer characteristics	Collector current	IC	0.08	0.3	0.8	mA	VCE=2V, IF=10mA
	Collector-emitter saturation voltage	VCE(sat)	—	0.1	0.3	V	IF=20mA, IC=0.1mA
	Response time	tr+tf	—	10	—	μs	VCE=5V, IF=20mA, RL=100Ω
Infrared light emitting diode	Cut-off frequency	fc	—	1	—	MHz	IF=50mA * Non-coherent Infrared light emitting diode used.
	Peak light emitting wavelength	λP	—	940	—	nm	—
Photo transistor	Response time	tr+tf	—	10	—	μs	VCC=5V, IC=1mA, RL=100Ω * This product is not designed to be protected against electromagnetic wave.
	Maximum sensitivity wavelength	λP	—	800	—	nm	—

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

Electrical and optical characteristics curves

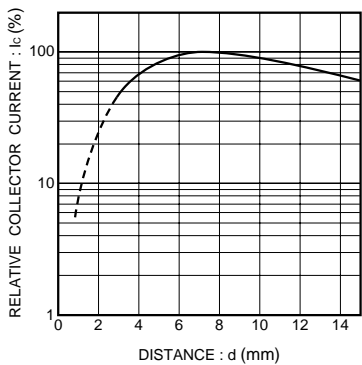


Fig.1 Relative output vs. distance

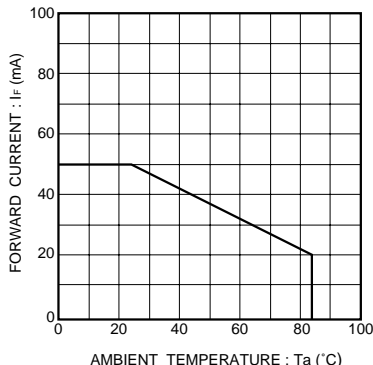


Fig.2 Forward current vs. ambient temperature

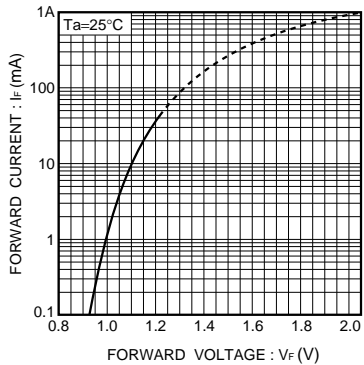


Fig.3 Forward current vs. forward voltage

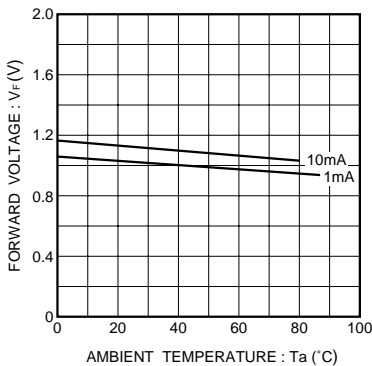


Fig.4 Forward voltage vs. ambient temperature

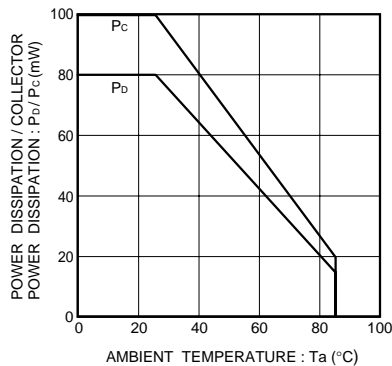


Fig.5 Power dissipation / collector power dissipation vs. ambient temperature

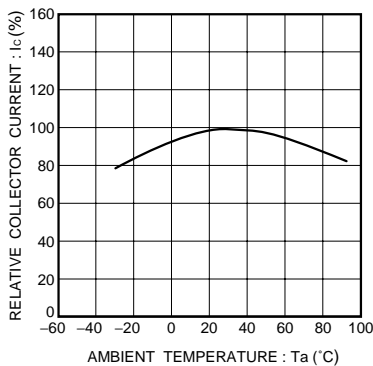
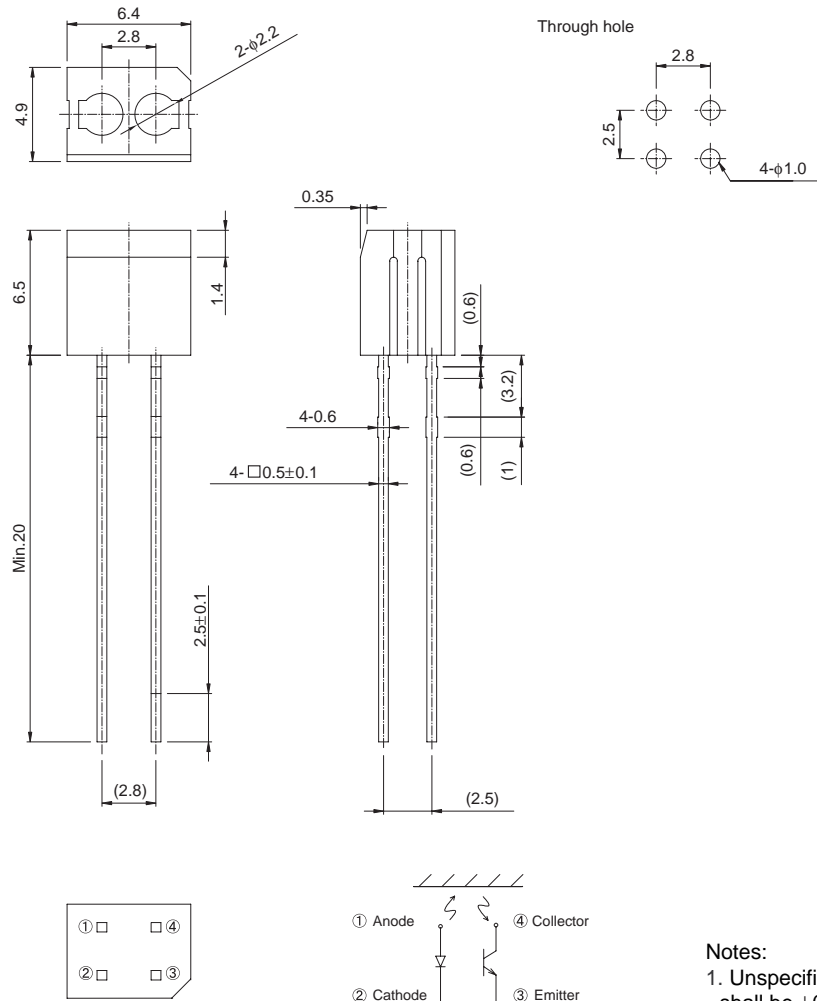


Fig.6 Relative output vs. ambient temperature

External dimensions (Unit : mm)



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

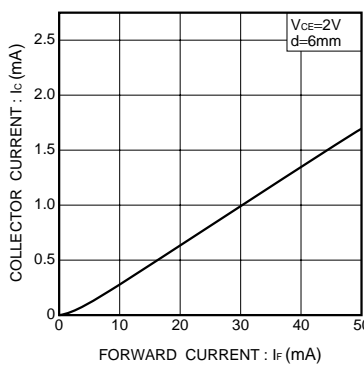


Fig.7 Collector current vs. forward current

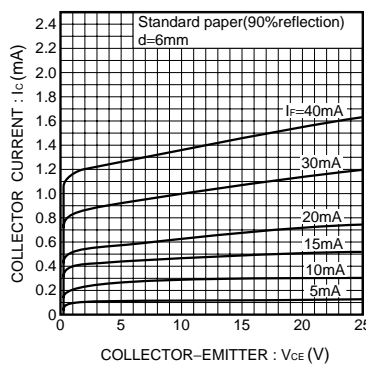


Fig.8 Output characteristics

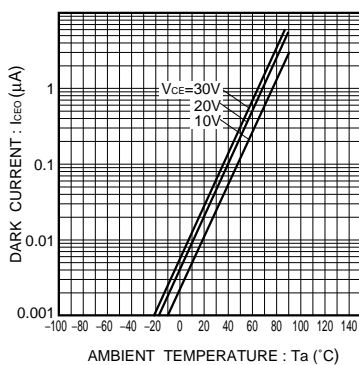


Fig.9 Dark current vs. ambient temperature

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