Red light source high output reflective photosensor (photoreflector)

RPR-220UC30N

The RPR-220UC30N employs a red light source which peak emitting wavelength is λp=630mm in the emitting side. Therefore, it enables not only to judge whether it is an object with conventional function or not, but also to distinguish a cyanogens color due to its complementary. Peak sensitivity wavelength which is λp=600nm also goes very well with the receiving side.

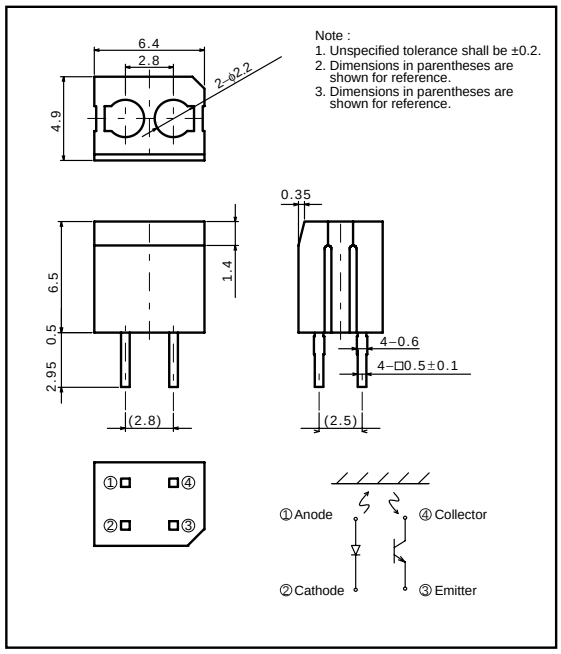
●Application

Printers, facsimile machines and various control machineries

●Features

1) High output at Ic 0.4mA (typ.) output
2) Detection distance is from 6mm to 12mm.
3) It is unnecessary to cut a lead which length is 2.95mm after mounting.

●External dimensions (Unit : mm)



●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_{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		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		V_F	–	2.0	2.6	V	I_F=50mA
	Reverse current		I_R	–	–	100	μA	V_R=9V
	Peak emitting wavelength		λ_P	–	630	–	nm	–
Output characteristics	Dark current		I_{CEO}	–	–	10	μA	V_{CE}=10V
	Peak sensitivity wavelength		λ_P	–	600	–	nm	–
Transfer characteristics	Collector current		I_C	0.08	0.4	0.8	mA	V_{CE}=5V, I_F=10mA
	Collector-emitter saturation voltage		$V_{CE(sat)}$	–	0.1	0.3	V	I_F=20mA, I_C=0.1mA
	Response time	Rising time	tr	–	10	–	μs	V_{CC}=5V, I_F=20mA, R_L=100Ω
		Falling time	tf	–	10	–	μs	

●Electrical and optical characteristic curves

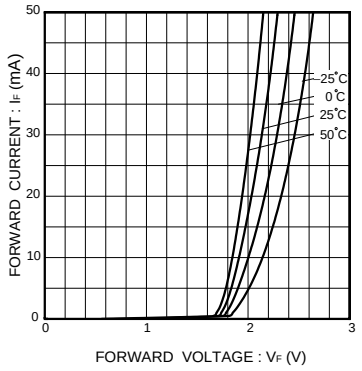


Fig.1 Forward current vs. forward voltage

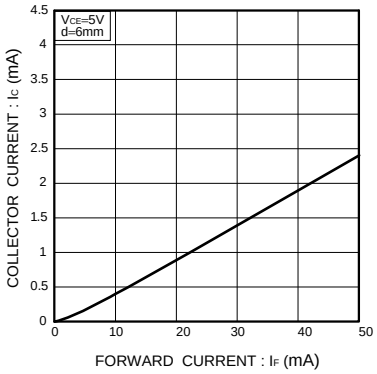


Fig.2 Collector current vs. forward current

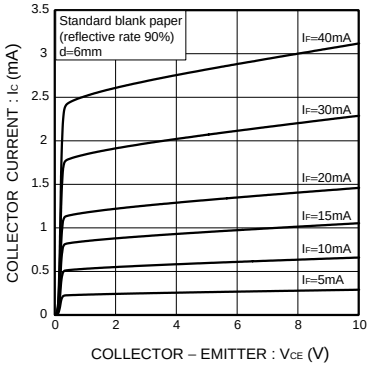


Fig.3 Output characteristics

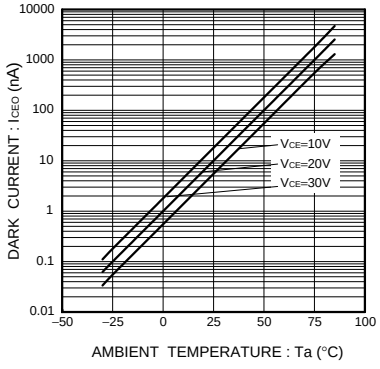


Fig.4 Dark current vs. ambient temperature

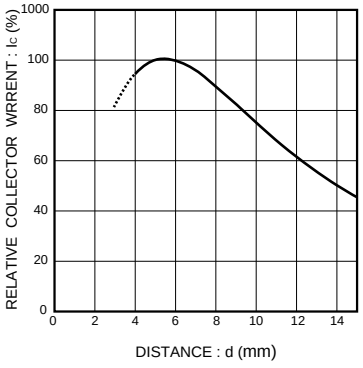


Fig.5 Relative output vs. distance

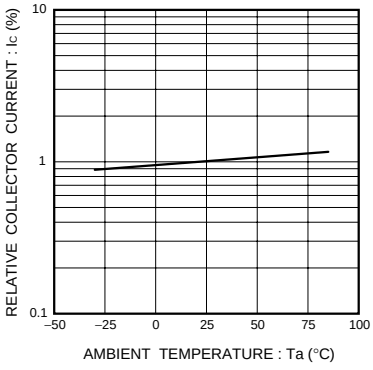


Fig.6 Relative output vs. ambient temperature

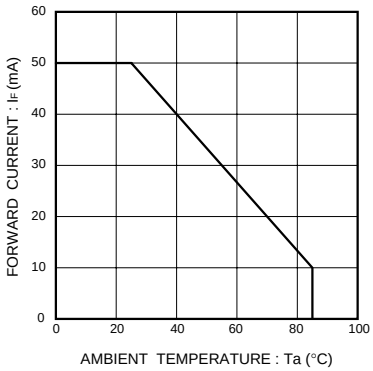
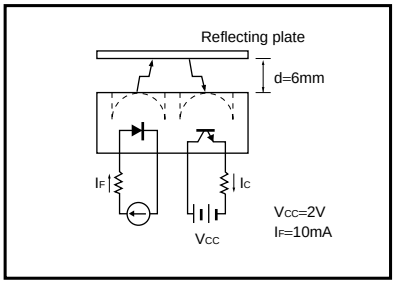


Fig.7 Forward current vs. ambient temperature

●Circuit for testing transfer characteristics



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