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Sensors

# Phototransistor, surface mount type

## RPM-075PT

Quite new phototransistor which peak sensitivity is designed as same level as human eye. Best sensor to detect illuminance. (Peak sensitivity is 600nm.) Small and light weight package which can be used for reflow soldering and Pd free soldering.

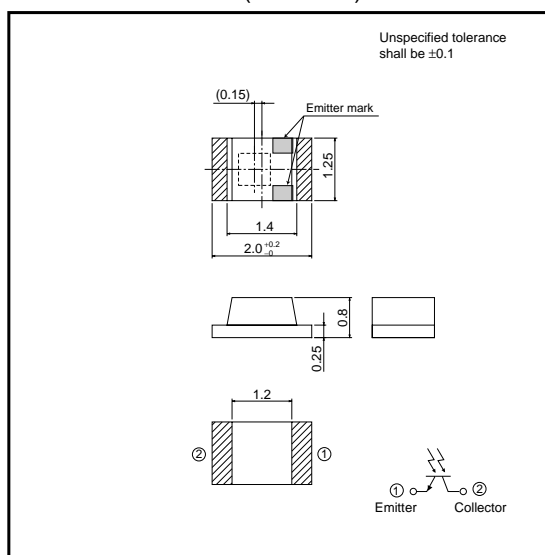
●Application

Control of lighting cellular phones, LCD displays, etc.  
 Control of strobe. (DSC, camcorder, etc.)

●Features

- 1) Best sensor to detect illuminance.  
 (Peak sensitivity is 600nm.)
- 2) Small (2125) and light weight package (3mg) which can be used for reflow soldering and Pd free soldering.
- 3) Linear against wide range of illuminance from a few Lx to 10000Lx over.
- 4) Use Si good for an environment. (not CdS)

●External dimensions (Units : mm)



●Absolute maximum ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-emitter voltage	V <sub>CEO</sub>	20	V
Emitter-collector voltage	V <sub>ECO</sub>	5	V
Collector current	I <sub>C</sub>	10	mA
Collector power dissipation	P <sub>C</sub>	50	mW
Operating temperature	T <sub>opr</sub>	-30~+85	°C
Storage temperature	T <sub>stg</sub>	-40~+100	°C

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Light current	I <sub>C</sub>	0.25	0.4	0.6	mA	V <sub>CE</sub> =5V, E=500Lx
Dark current	I <sub>CEO</sub>	-	-	0.5	μA	V <sub>CE</sub> =10V (Black box)
Peak sensitivity wavelength	λ <sub>P</sub>	-	600	-	nm	-
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	-	-	0.4	V	I <sub>C</sub> =0.1mA, E=500Lx
Half-angle	θ <sub>1/2</sub>	-	±60	-	deg	-
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

**RPM-075PT**

**Sensors**

**●Electrical and optical characteristic curves**

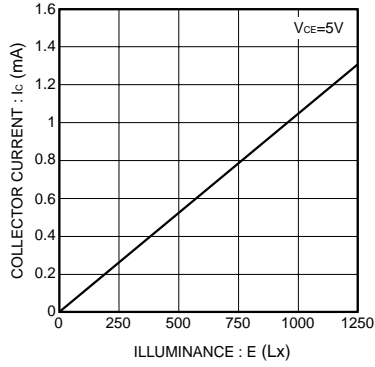


Fig.1 Collector current-Illuminance

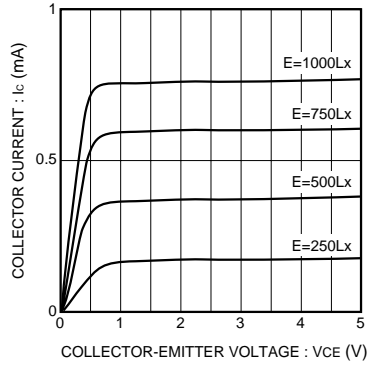


Fig.2 Output characteristics

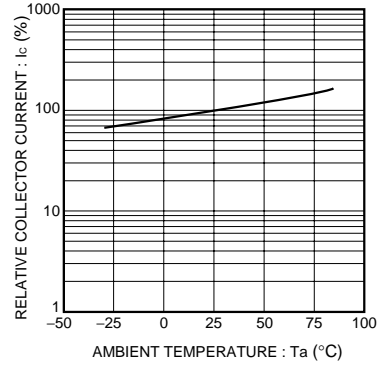


Fig.3 Relative output-Ambient temperature

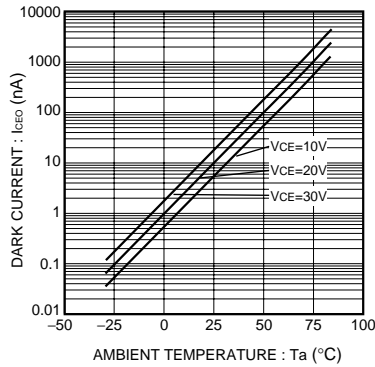


Fig.4 Dark current-Ambient temperature

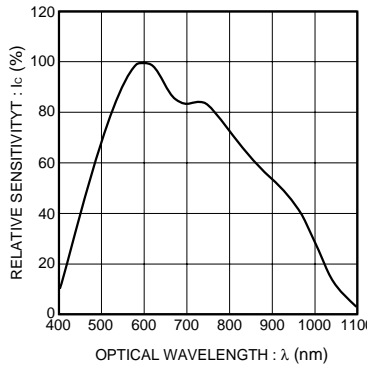


Fig.7 Spectral sensitivity characteristics

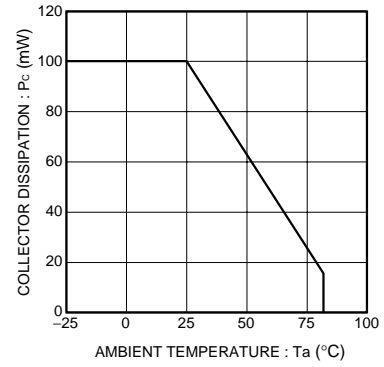


Fig.6 Collector dissipation-Ambient temperature

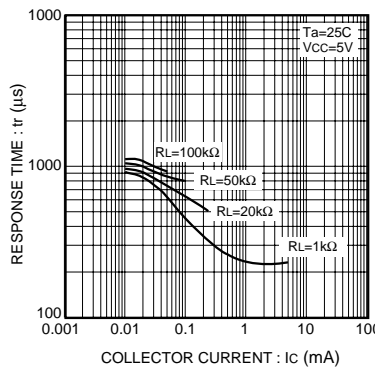


Fig.7 Response time-Collector current

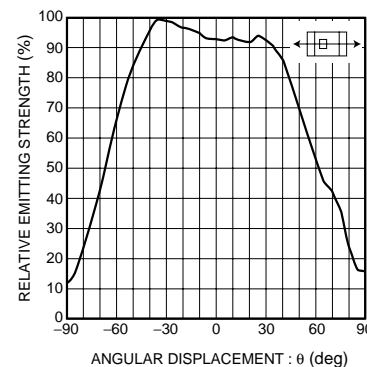


Fig.8 Directional pattern

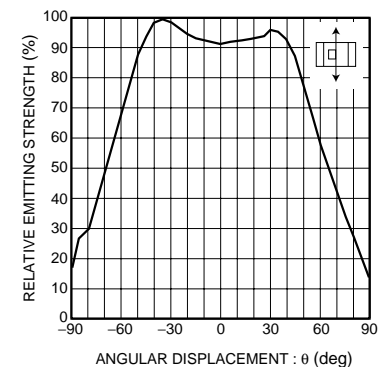


Fig.9 Directional pattern