

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.

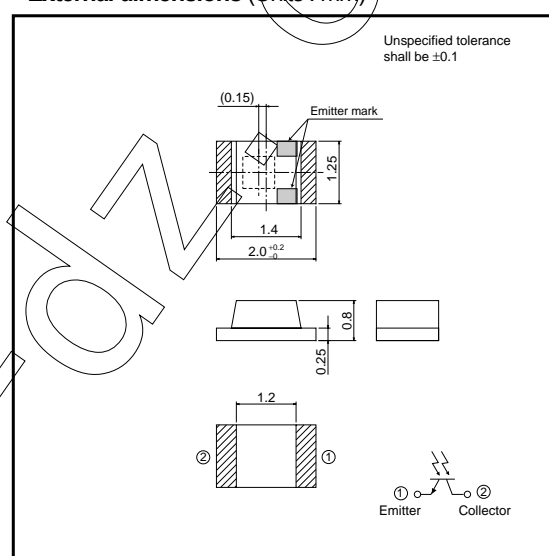
●Application

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_{CEO}	20	V
Emitter-collector voltage	V_{ECO}	5	V
Collector current	I_C	10	mA
Collector power dissipation	P_C	50	mW
Operating temperature	T_{opr}	-30~+85	°C
Storage temperature	T_{stg}	-40~+100	°C

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

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Light current	I_C	0.25	0.4	0.6	mA	$V_{CE}=5V$, $E=500Lx$
Dark current	I_{CEO}	—	—	0.5	μA	$V_{CE}=10V$ (Black box)
Peak sensitivity wavelength	λ_P	—	600	—	nm	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	—	—	0.4	V	$I_C=0.1mA$, $E=500Lx$
Half-angle	$\theta_{1/2}$	—	±60	—	deg	—
Response time	t_{r-tf}	—	10	—	μs	$V_{CC}=5V$, $I_C=1mA$, $R_L=100\Omega$

Sensors

●Electrical and optical characteristic curves

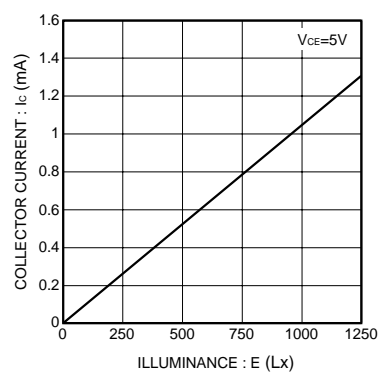


Fig.1 Collector current-Illuminance

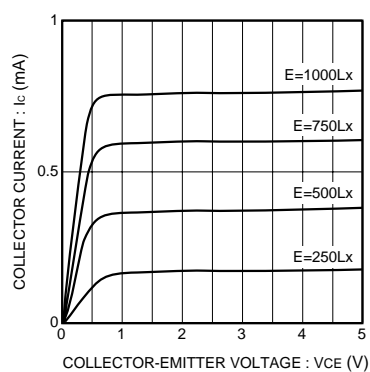


Fig.2 Output characteristics

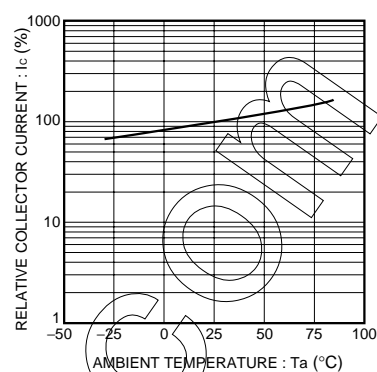


Fig.3 Relative output-Ambient temperature

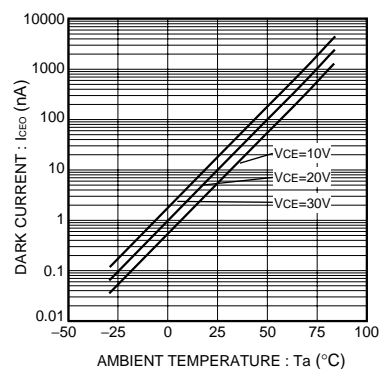


Fig.4 Dark current-Ambient temperature

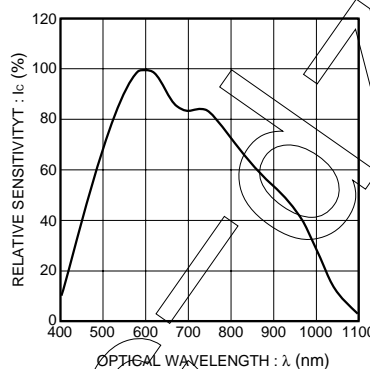


Fig.7 Spectral sensitivity characteristics

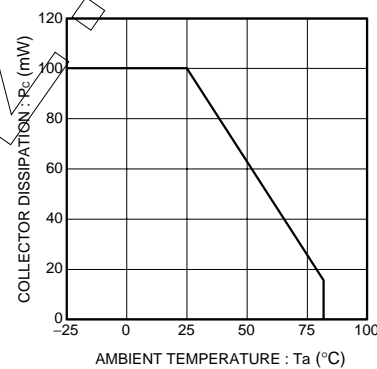


Fig.6 Collector dissipation-Ambient temperature

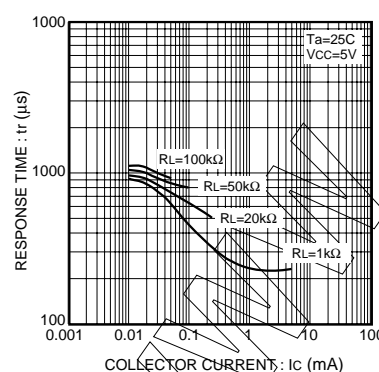


Fig.7 Response time-Collector current

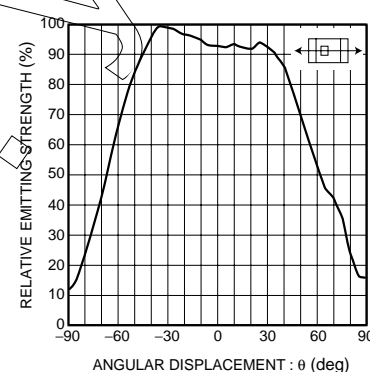


Fig.8 Directional pattern

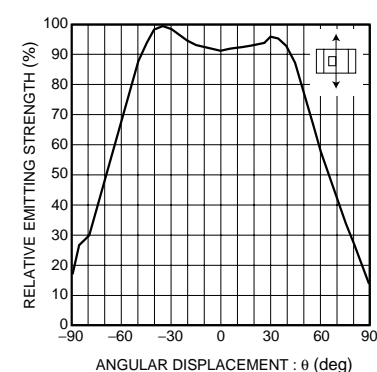


Fig.9 Directional pattern

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