

## Peak Emission Wavelength: 950nm

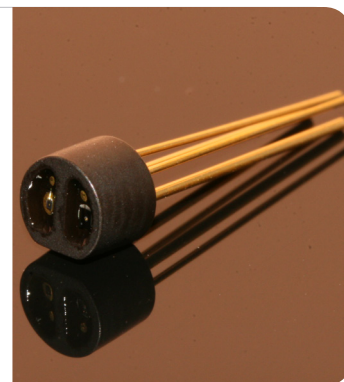
The 950nm reflective sensor consists of a 950nm infrared emitter and high sensitivity photo transistor in the same package. The black molded housing reduces the effect of external ambient light. Custom emitter/detectors are available.

### FEATURES

- > High Reliability
- > Compact (Φ4.0)
- > Short Detection Distance Optimum 0.5-1.5mm

### APPLICATIONS

- > Card Reader
- > Bar-code Reader
- > Edge Sensing / Money-bill Reader



## Absolute Maximum Ratings (Ta=25°C)



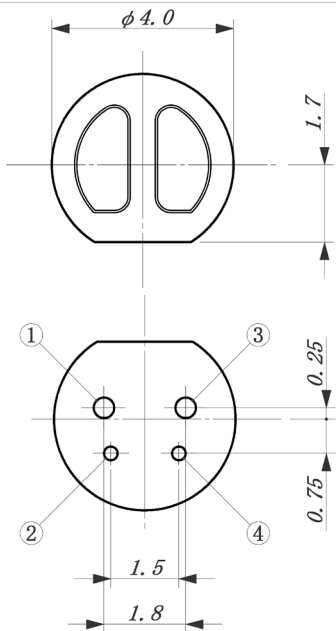
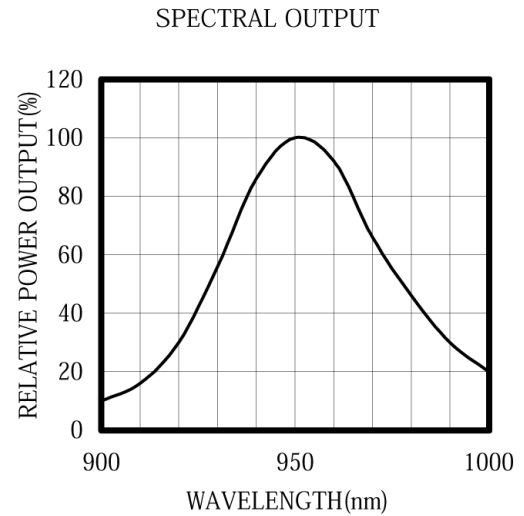
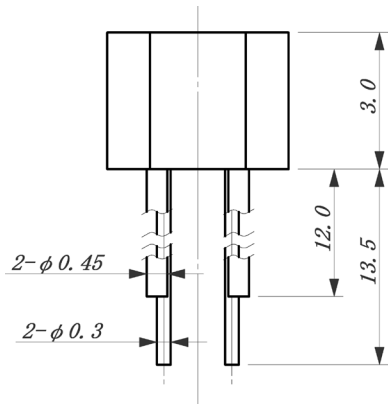
ITEMS	SYMBOL	RATINGS	UNIT
Forward Current (LED)	IF	60	mA
Pulse Forward Current (LED)*1	IFP	1	A
Reverse Voltage (LED)	VR	5	V
Power Dissipation (LED)	PD	100	mW
Collector-Emitter Voltage (PT)	Vce	20	V
Emitter-Collector Voltage (PT)	Vec	5	V
Collector Current (PT)	Ic	50	mA
Collector Power Dissipation (PT)	PC	75	mW
Total Power Dissipation	Ptot	100	mW
Operating Temperature Range	Topr	-20 ~ +80	°C

\*1: Tw=10μsec, T=10msec.

## Electrical & Optical Characteristics (Ta = 25°C)

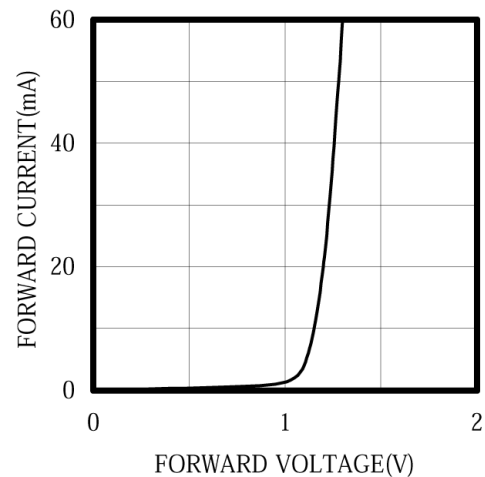
ITEMS	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Forward Voltage	VF	IF=4mA	--	1.1	1.4	V
Reverse Current	IR	VR=5V	--	--	10	μA
Peak Emission Wavelength	λp	IF=4mA	--	950	--	nm
Spectral Line Half Width	Δλ	IF=4mA	--	50	--	nm
Dark Current (I <sub>ceo</sub> )	ID	Vce=10V	--	--	100	nA
Output Current	I <sub>o</sub>	IF=4mA, Vce=10V, d=1mm *	30	100	--	μA
Cross-talk Current	I <sub>x</sub>	IF=4mA, Vce=10V	--	--	1.0	%
Rise Time (10 to 90%)	Tr	Vcc=5V, I <sub>o</sub> =0.1mA, RL=1KΩ	--	20	--	μS
Fall Time (10 to 90%)	Tf	Vcc=5V, I <sub>o</sub> =0.1mA, RL=1KΩ	--	30	--	μS
Lead Soldering Temperature*2	T <sub>ls</sub>	--	--	--	260	°C

\*1: Measured by reflecting with Aluminum evaporated mirror (d=1.00mm). \*2: Time 5 Sec max, Position: Up to 3mm from the body.



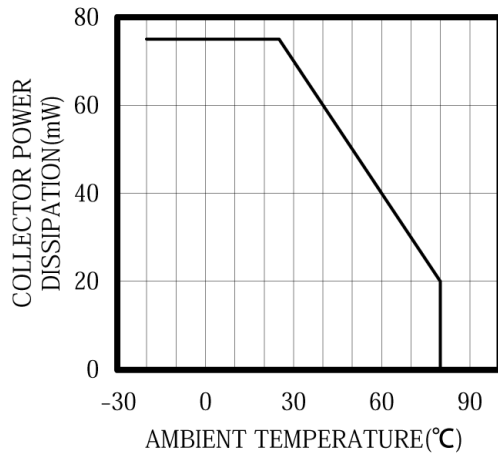
- ① LED Cathode
- ② LED Anode
- ③ PTR Collector
- ④ PTR Emitter

FORWARD I-V CHARACTERISTICS

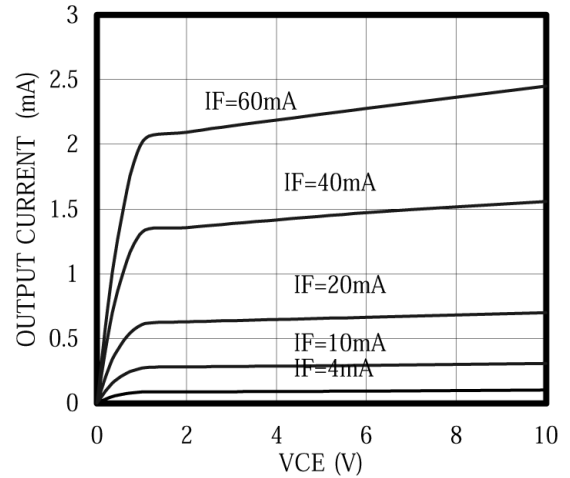


Unit: mm, Tolerance:  $\pm 0.2$

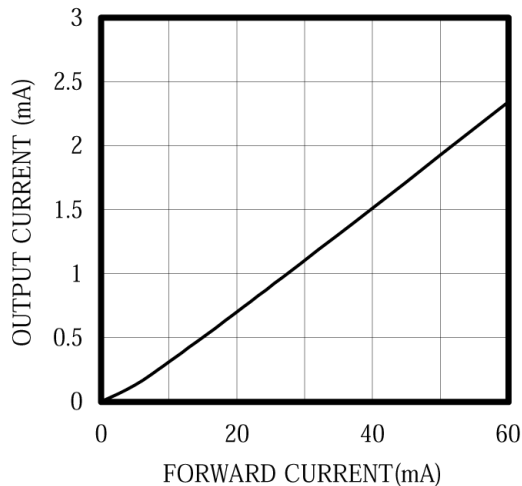
THERMAL DERATING CURVE



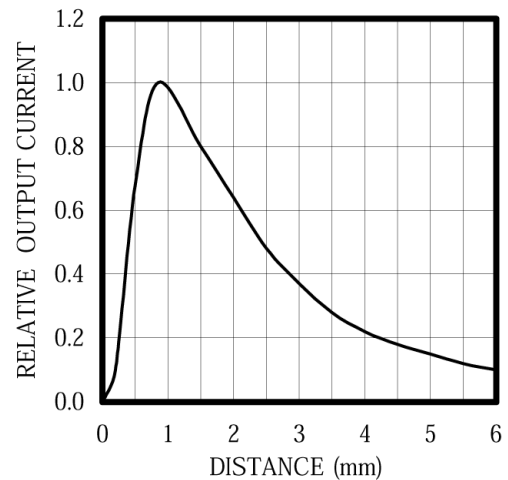
$I_o$  vs VCE



$I_F$  VS  $I_o$   
VCE=10V



$I_o$  VS DISTANCE



The information contained herein is subject to change without notice.

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