

## Peak Emission Wavelength: 590nm

The 590nm reflective sensor consists of a 590nm visible emitter and high sensitivity photo diode 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)



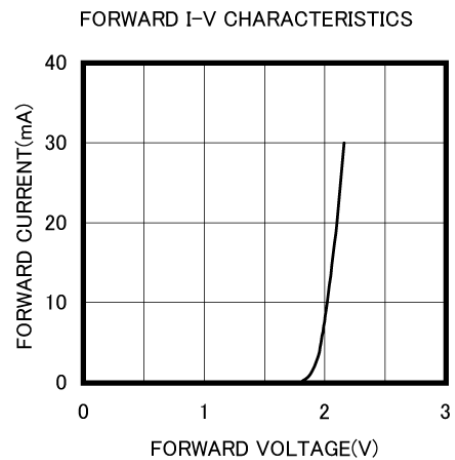
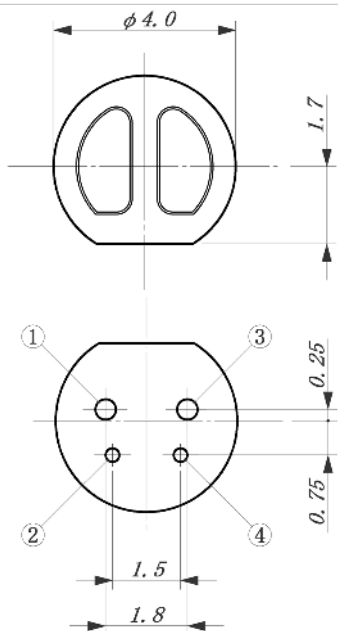
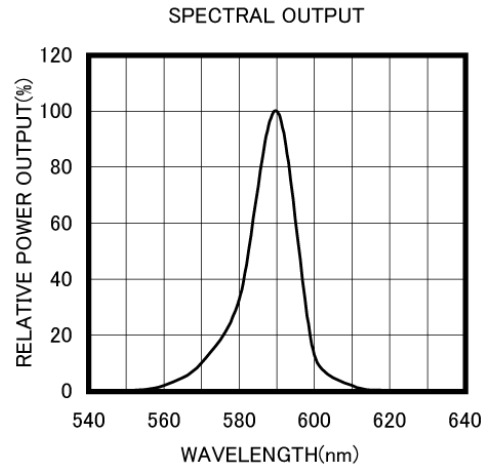
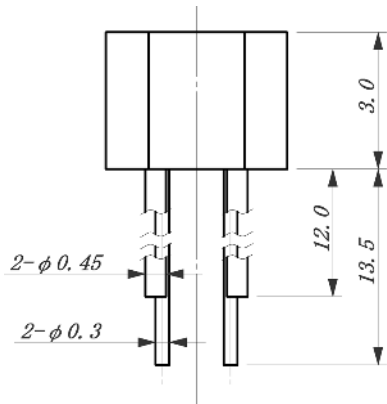
ITEMS	SYMBOL	RATINGS	UNIT
Forward Current (LED)	IF	30	mA
Pulse Forward Current (LED)*1	IFP	50	mA
Reverse Voltage (LED)	VR	5	V
Power Dissipation (LED)	PD	100	mW
Reverse Voltage (PD)	VR	30	V
Power Dissipation (PD)	PD	75	mW
Total Power Dissipation	Ptot	100	mW
Operating Temperature Range	Topr	-20 ~ +80	°C
Storage Temperature Range	Tstg	-30 ~ +100	°C

\*1: Tw=10μsec, T=10msec.

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

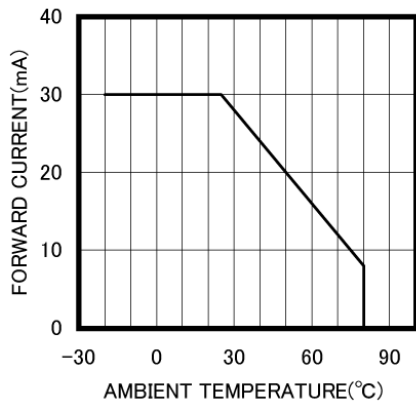
ITEMS	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT
Forward Voltage	VF	IF=20mA	--	2.0	2.5	V
Reverse Current	IR	VR=4V	--	--	10	μA
Peak Emission Wavelength	λp	IF=20mA	--	590	--	nm
Spectral Line Half Width	Δλ	IF=20mA	--	13	--	nm
Dark Current (I <sub>ceo</sub> )	ID	VR=10V	--	--	100	nA
Output Current	I <sub>o</sub>	IF=20mA, VR=10V, d=1mm *	--	0.3	--	μA
Cross-talk Current	I <sub>x</sub>	IF=20mA, VR=10V	--	--	10.0	nA
Rise Time (10 to 90%)	Tr	VR=10V, IF=20mA, RL=1KΩ	--	1.0	--	μS
Fall Time (10 to 90%)	Tf	VR=10V, IF=20mA, RL=1KΩ	--	1.0	--	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.

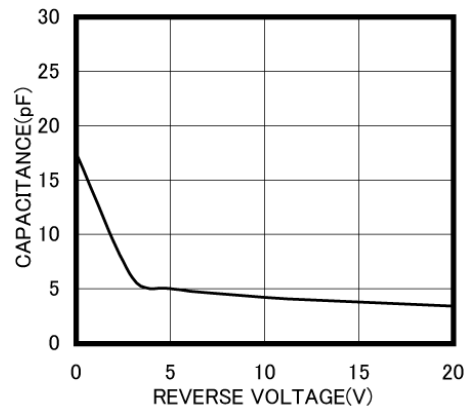


Unit: mm, Tolerance:  $\pm 0.2$

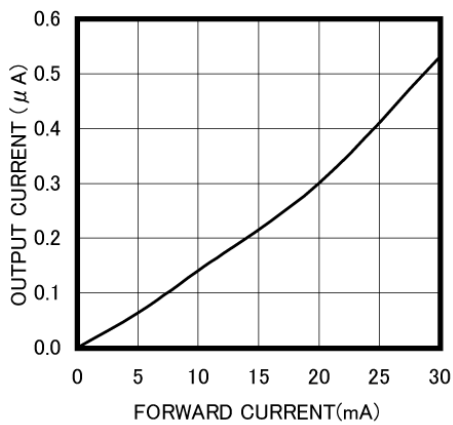
THERMAL DERATING CURVE



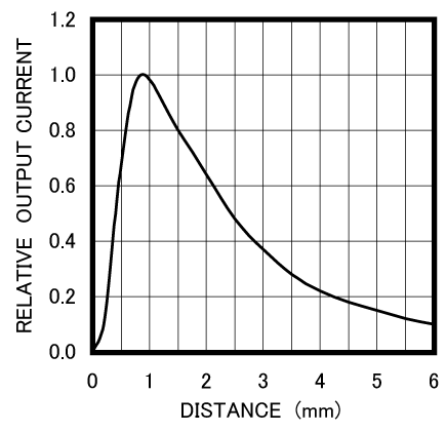
CAPACITANCE vs REVERSE VOLTAGE



IF VS I<sub>o</sub> @VR=10V



I<sub>o</sub> VS DISTANCE



The information contained herein is subject to change without notice.

2011-08-11