

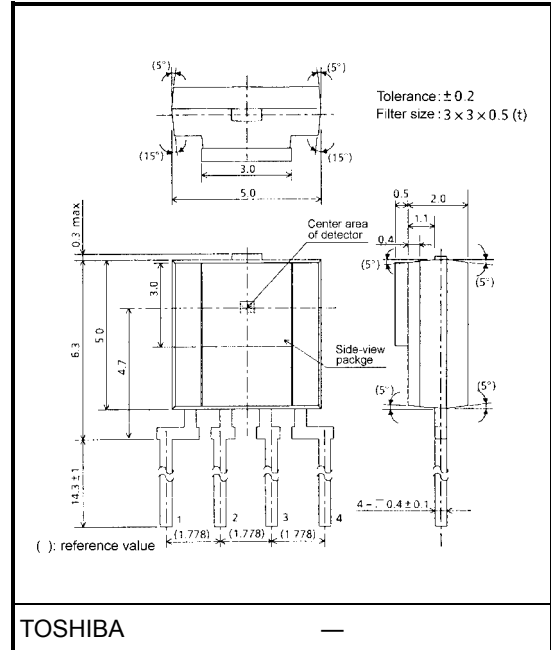
# TPS818

Luminosity Adjustment for TV Screens, CRT Monitors and Liquid-crystal Display Monitors  
 Notebook PCs and Portable Information Devices  
 Cellular and PHS Phones  
 Other Equipment Requiring Luminosity Adjustment

Unit: mm

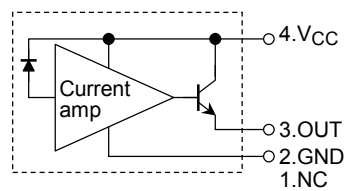
The TPS818 is a linear-output (current output type) photo-IC which incorporates a photodiode and a current amp circuit in a single chip. A luminous efficiency correction filter mounted on the detector ensures accurate luminosity output levels. The device's excellent output linearity enables automatic adjustment of the luminosity of a TV screen or PC monitor in accordance with the ambient brightness of the operating environment.

- High sensitivity  
 : Light current  $I_L = 240 \mu\text{A}$  (typ.) @EV = 100 lx
- Little fluctuation in light current  
 : 1.67 times width ( $\pm 25^\circ$  typ.)
- Low current consumption  
 :  $I_{CC} = 1 \mu\text{A}$  (max) @VCC = 5.5 V
- Excellent illumination output linearity
- Luminous efficiency correction filter mounted on detector:  $\lambda_p = 560 \text{ nm}$  (typ.)
- Open-emitter output
- Side-view package
- Environmentally friendly silicon used as chip material instead of CdS  
 Suitable as a substitute for CdS-based products



Weight: 0.22 g (typ.)

## Pin Connection



## Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Supply voltage	V <sub>CC</sub>	-0.5~7	V
Output voltage	V <sub>OUT</sub>	≤ V <sub>CC</sub>	V
Light current	I <sub>L</sub>	10	mA
Permissible power dissipation	P	150	mW
Operating temperature range	T <sub>opr</sub>	-25~85	°C
Storage temperature range	T <sub>stg</sub>	-40~100	°C
Soldering temperature range (5s) (Note 1)	T <sub>sol</sub>	260	°C

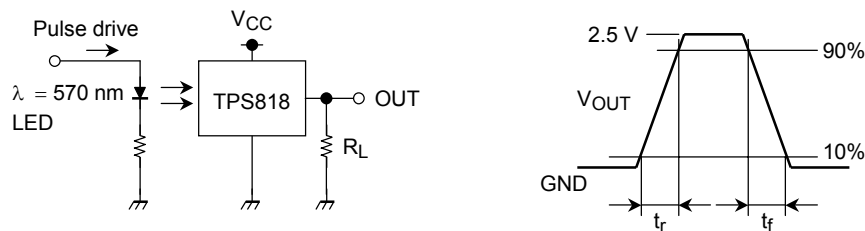
Note 1: Solder under the lead stopper.

## Electrical and Optical Characteristics (Ta = 25°C, V<sub>CC</sub> = 5 V)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Supply voltage	V <sub>CC</sub>	—	4.5	5	5.5	V
Supply current	I <sub>CC</sub>	V <sub>CC</sub> = 5.5 V, E <sub>V</sub> = 0	—	0.01	1	μA
Light current (1)	I <sub>L</sub> (1)	E <sub>V</sub> = 10 lx (Note 2)	18	24	30	μA
Light current (2)	I <sub>L</sub> (2)	E <sub>V</sub> = 100 lx (Note 2)	180	240	300	μA
Dark current	I <sub>LEAK</sub>	V <sub>CC</sub> = 5.5 V, E <sub>V</sub> = 0	—	—	0.5	μA
Peak sensitivity wavelength	λ <sub>P</sub>	—	—	560	—	nm
Switching time	t <sub>r</sub>	R <sub>L</sub> = 10 kΩ, λ = 570 nm	—	0.3	—	ms
	t <sub>f</sub>		—	0.8	—	

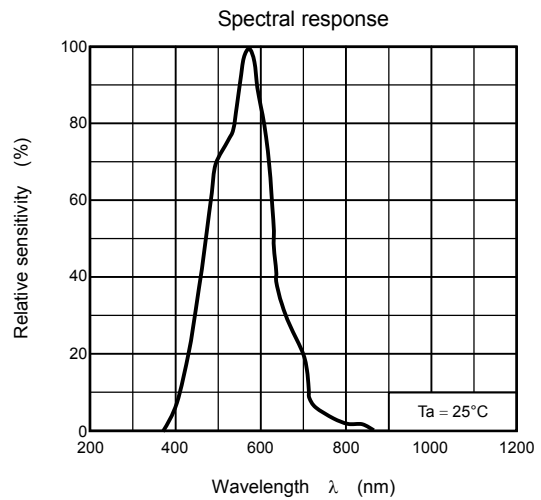
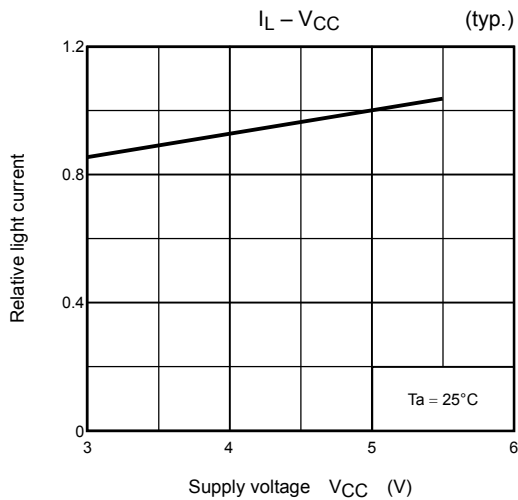
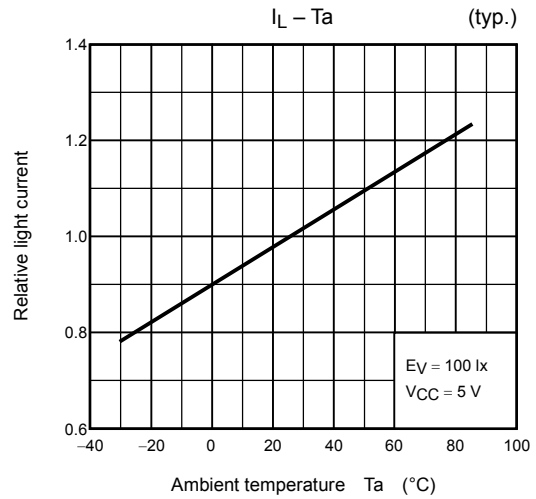
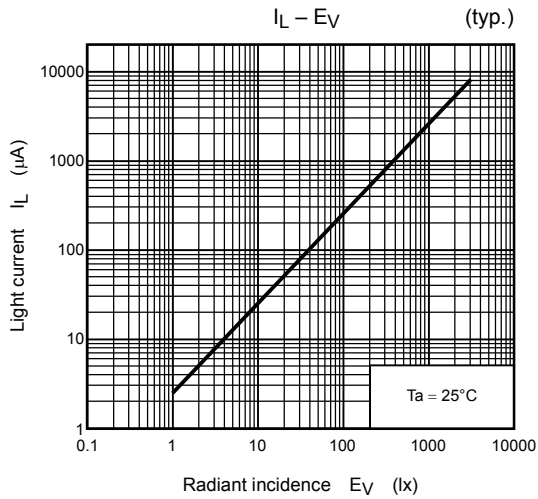
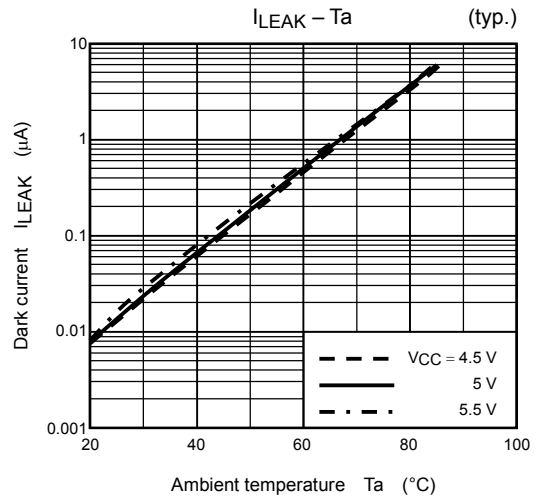
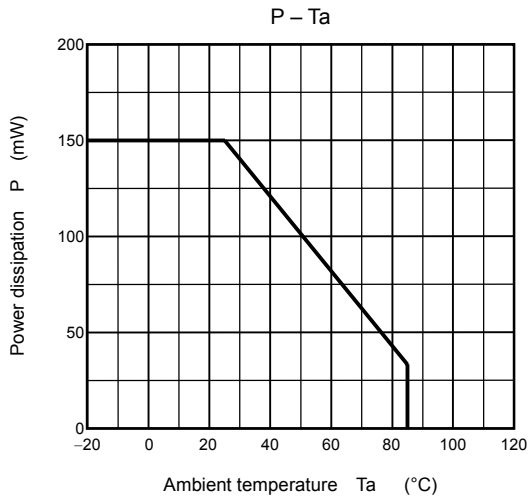
Note 2: A CIE Standard A light source is used (color temperature = 2870°K).

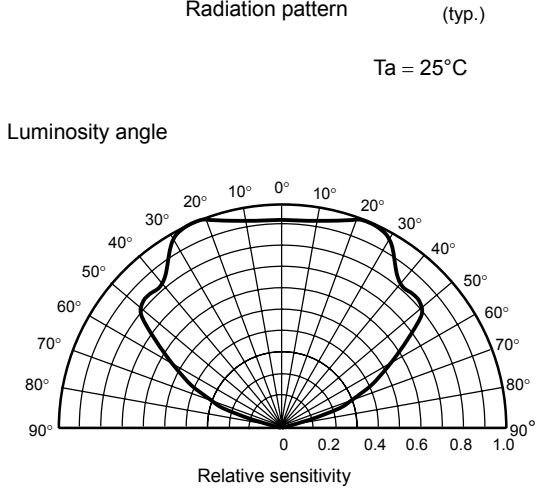
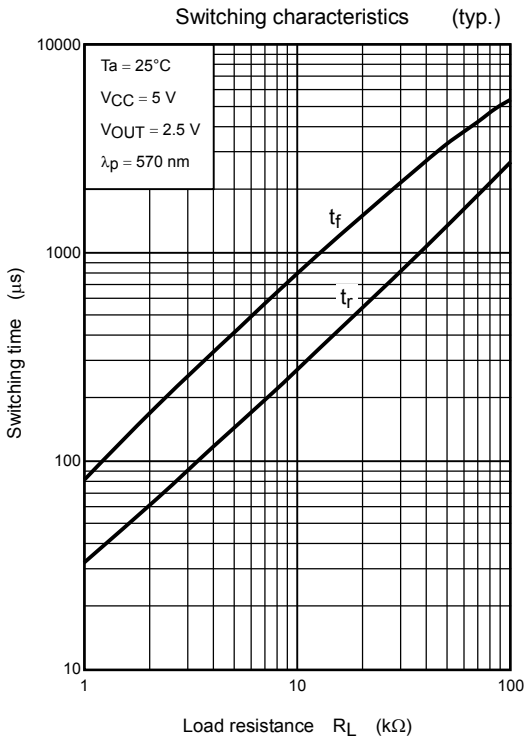
## Rise Time/Fall Time Measurement Method



## Handling Precautions

- When forming the leads, bend each lead under the lead stopper. Soldering must be performed after the leads have been formed.
- Soldering must be performed under the stopper.
- To stabilize the power line, insert a bypass capacitor of up to 0.01 μF between V<sub>CC</sub> and GND, close to the device.





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