

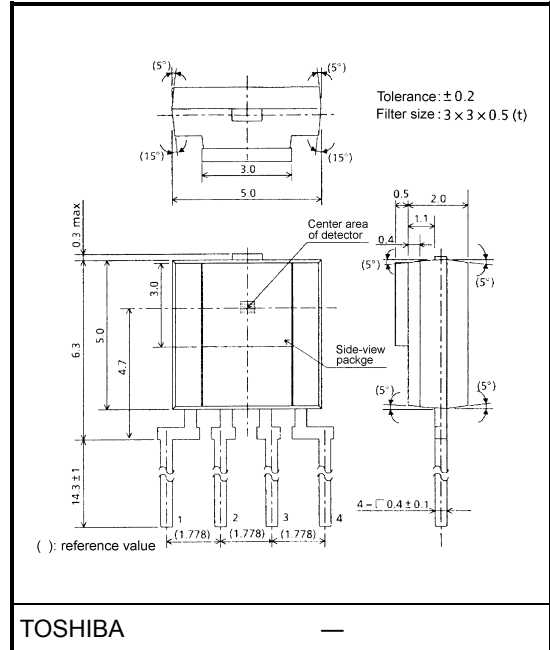
TPS818

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

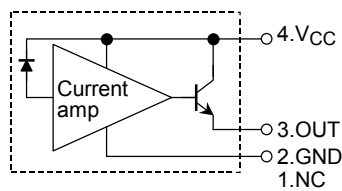
The TPS818 is a linear-output (current output type) photo-IC which incorporates a photodiode and a current amp circuit in a single chip. A luminous efficiency correction filter mounted on the detector ensures accurate luminosity output levels. The device's excellent output linearity enables automatic 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 _{CC} | -0.5~7 | V |
| Output voltage | V _{OUT} | ≤ V _{CC} | V |
| Light current | I _L | 10 | mA |
| Permissible power dissipation | P | 150 | mW |
| Operating temperature range | T _{opr} | -25~85 | °C |
| Storage temperature range | T _{stg} | -40~100 | °C |
| Soldering temperature range (5s) (Note 1) | T _{sol} | 260 | °C |

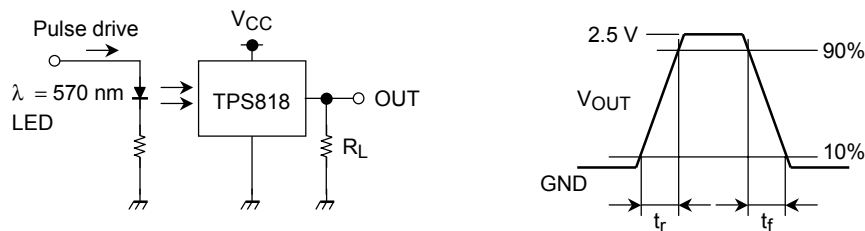
Note 1: Solder under the lead stopper.

Electrical and Optical Characteristics (Ta = 25°C, V_{CC} = 5 V)

| Characteristics | Symbol | Test Condition | Min | Typ. | Max | Unit |
|-----------------------------|--------------------|---|-----|------|-----|------|
| Supply voltage | V _{CC} | — | 4.5 | 5 | 5.5 | V |
| Supply current | I _{CC} | V _{CC} = 5.5 V, E _V = 0 | — | 0.01 | 1 | μA |
| Light current (1) | I _L (1) | E _V = 10 lx (Note 2) | 18 | 24 | 30 | μA |
| Light current (2) | I _L (2) | E _V = 100 lx (Note 2) | 180 | 240 | 300 | μA |
| Dark current | I _{LEAK} | V _{CC} = 5.5 V, E _V = 0 | — | — | 0.5 | μA |
| Peak sensitivity wavelength | λ _P | — | — | 560 | — | nm |
| Switching time | t _r | R _L = 10 kΩ, λ = 570 nm | — | 0.3 | — | ms |
| | t _f | | — | 0.8 | — | |

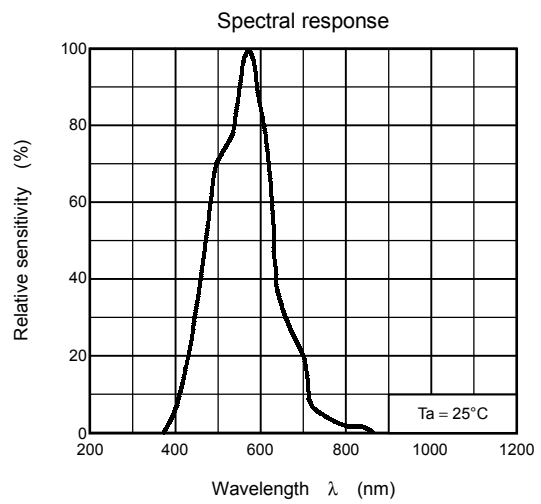
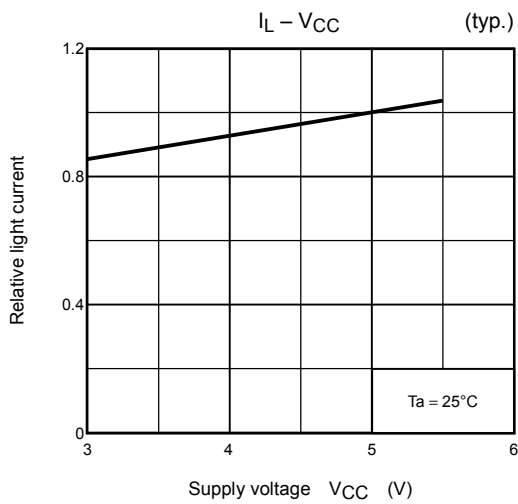
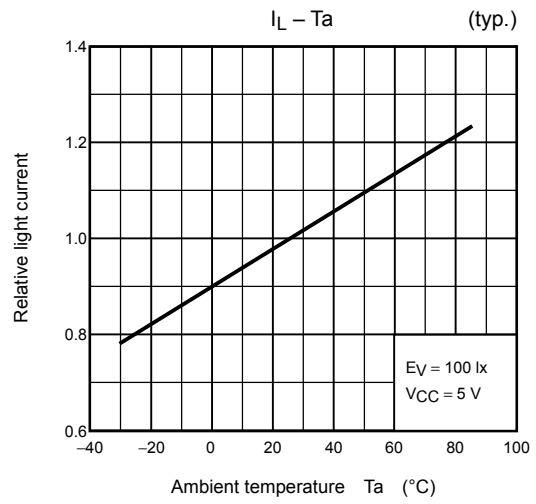
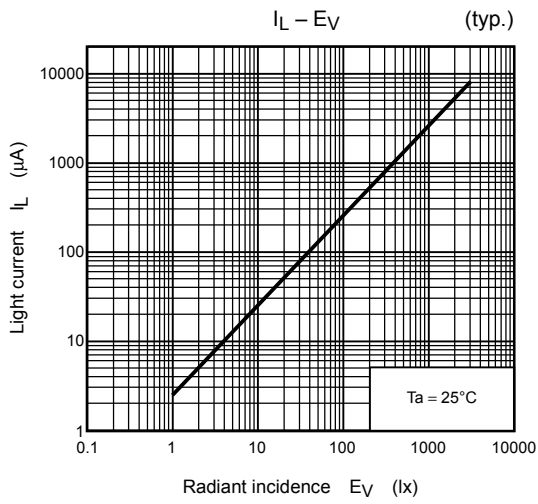
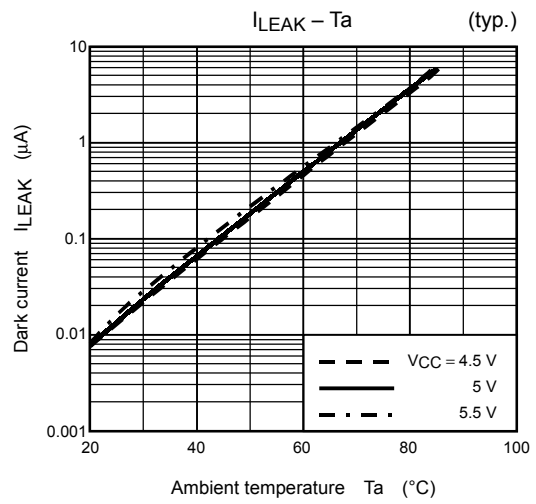
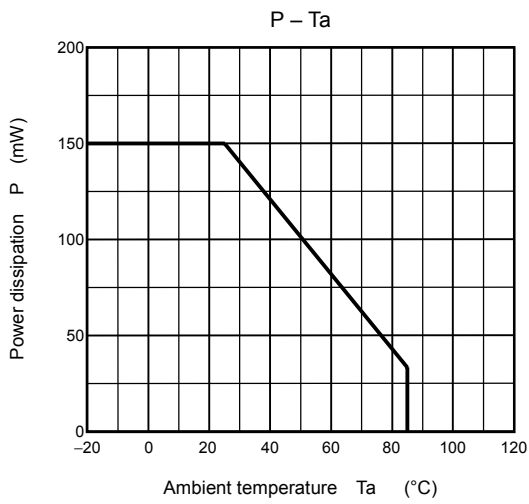
Note 2: A CIE Standard A light source is used (color temperature = 2870°K).

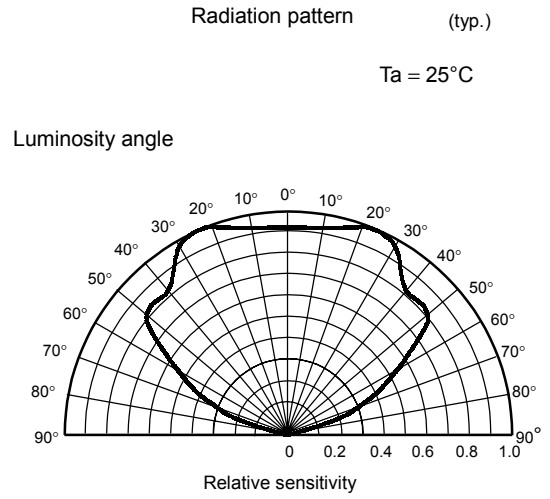
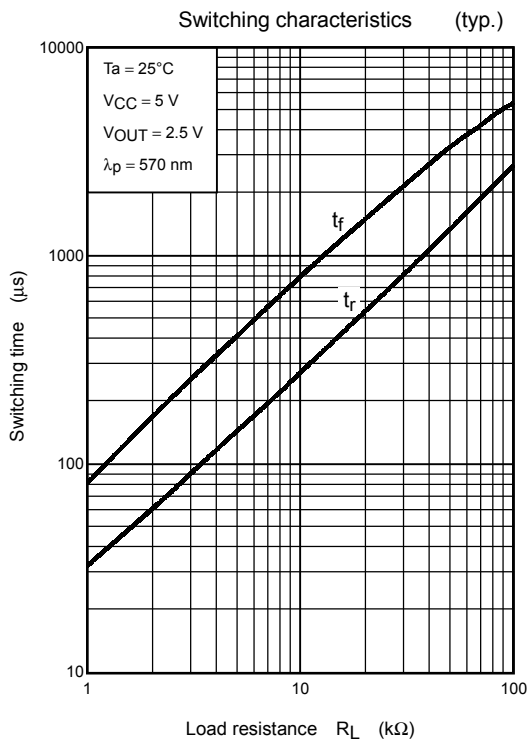
Rise Time/Fall Time Measurement Method



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_{CC} and GND, close to the device.





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