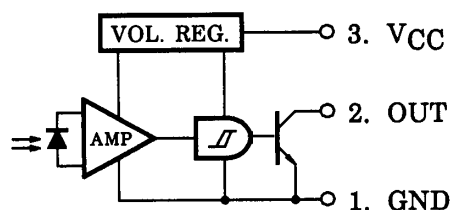
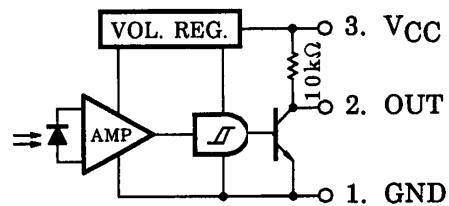


Pin Connection

TPS841(F)



TPS843(F)



Opto-Electrical Characteristics

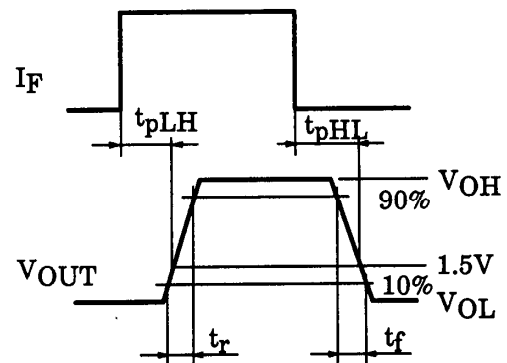
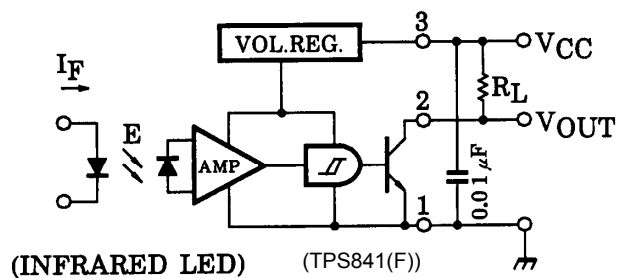
($T_a = -30$ to 95°C , $V_{CC} = 2.7$ to 15 V , typical values are all at 25°C .)

Characteristics			Symbol	Test Condition	Min	Typ.	Max	Unit
Supply voltage			V _{CC}	—	2.7	—	15	V
High level supply current			I _{CCH}	E = 2 mW/cm ² (Note 2)	—	0.5	1.2	mA
Low level supply current	TPS841(F)	I _{CCL}	E = 0	—	0.9	2	mA	
	TPS843(F)			—	2.9	4		
High level output current	TPS841(F)	I _{OH}	E = 2 mW/cm ² V _O = 15 V (Note 2)	—	—	6.3	μA	
High level output voltage	TPS843(F)	V _{OH}	E = 2 mW/cm ² (Note 2)	0.9*V _{CC}	—	—	V	
Low level output voltage			V _{OL}	I _{OL} = 16 mA, E = 0	—	0.07	0.4	V
“L→H” Threshold radiant incidence			E _{LH}	Ta = 25°C	—	0.2	0.3	mW/ cm ²
				—	—	—	0.6	
Hysteresis ratio			E _{HL} /E _{LH}	Ta = 25°C	0.5	0.65	0.9	—
Peak sensitivity wavelength			λ _P	—	—	900	—	nm
Switching time	Propagation delay time	“L→H”	t _{pLH}	Ta = 25°C V _{CC} = 3.3 V E = 2 mW/cm ² R _L = 10 kΩ (Note 3)	—	—	9	μs
		“H→L”	t _{pHL}		—	—	15	
	Rise time		t _r		—	0.02	0.5	
	Fall time		t _f		—	0.8	3	

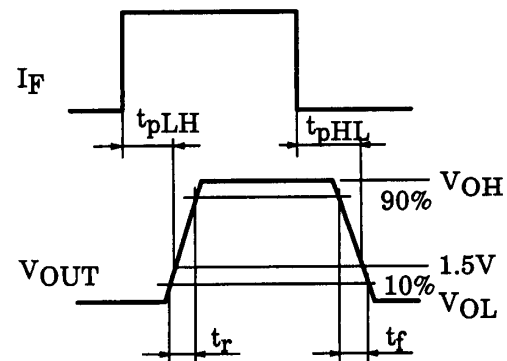
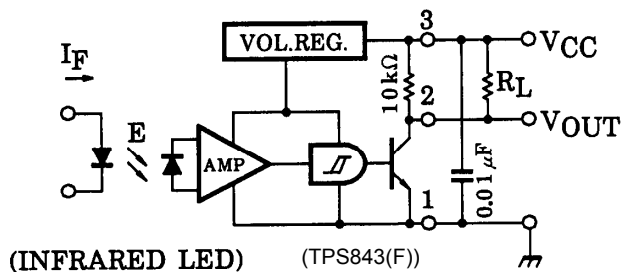
Note 2: CIE standard light source A (standard tungsten bulb) with color temperature = 2856 K.

Note 3: Switching time measurement circuit and waveform.

TPS841(F)

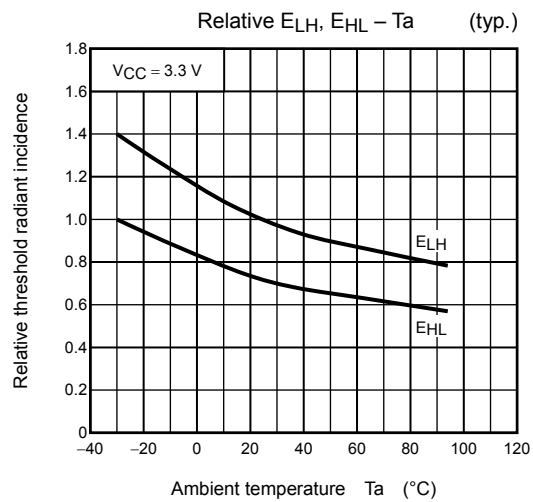
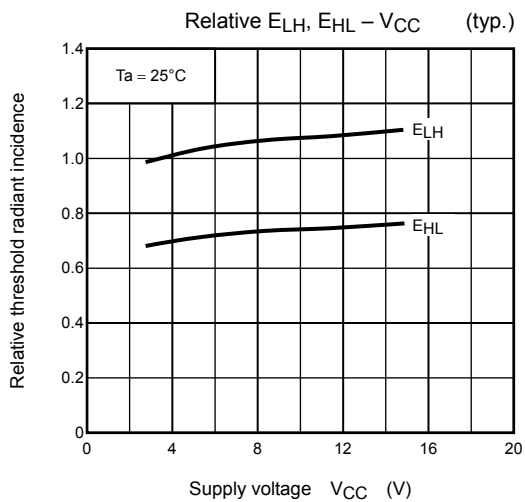
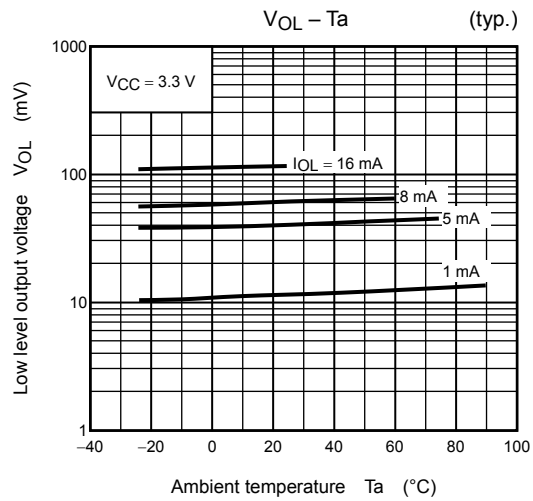
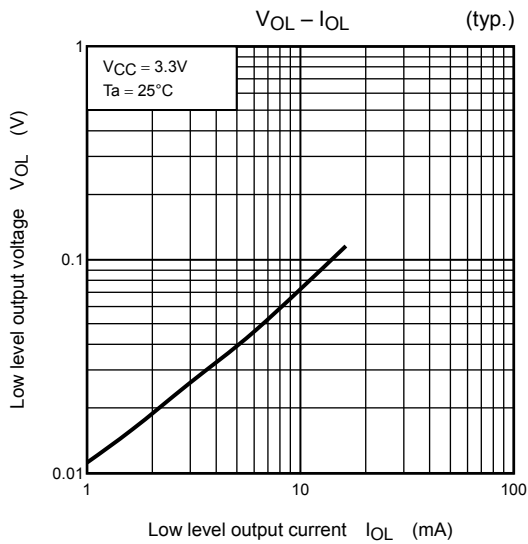
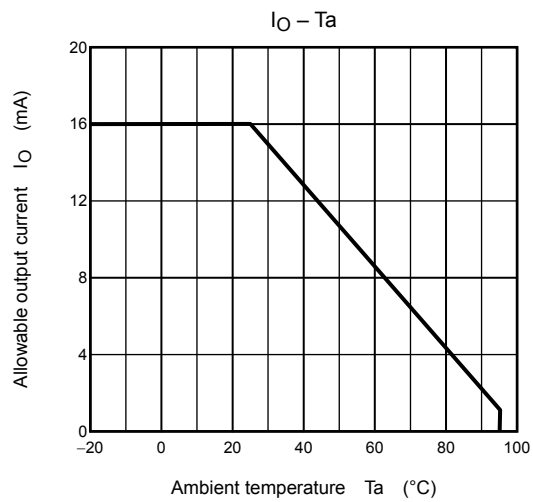
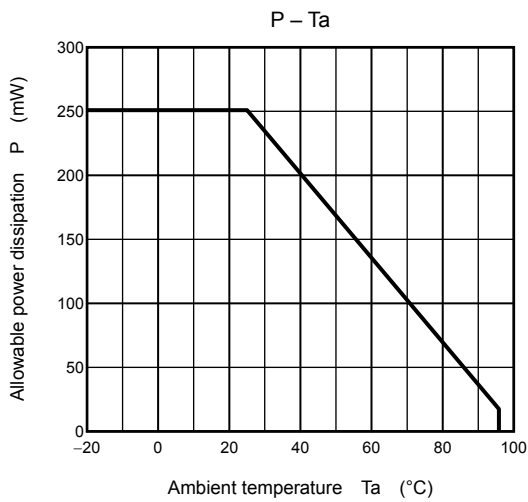


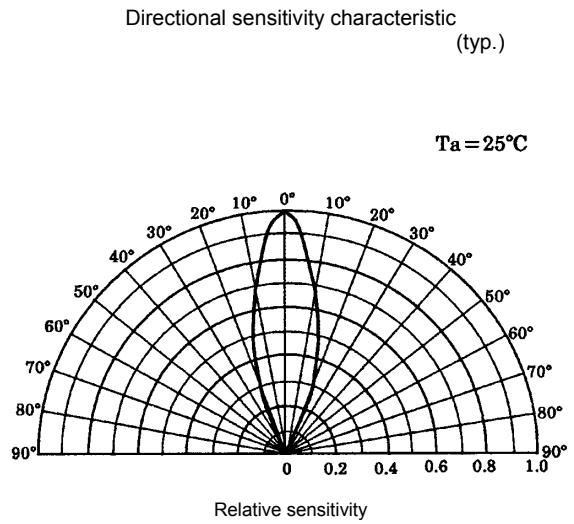
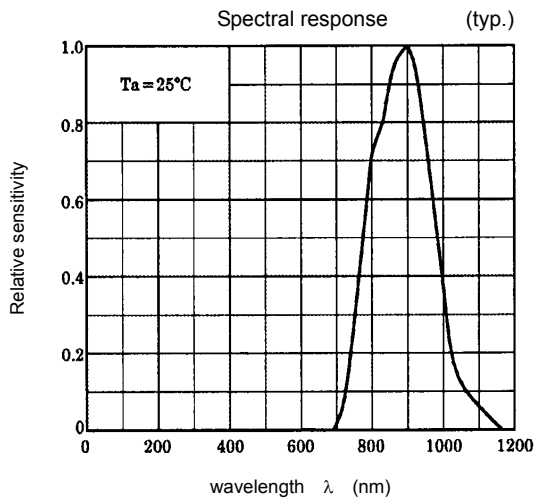
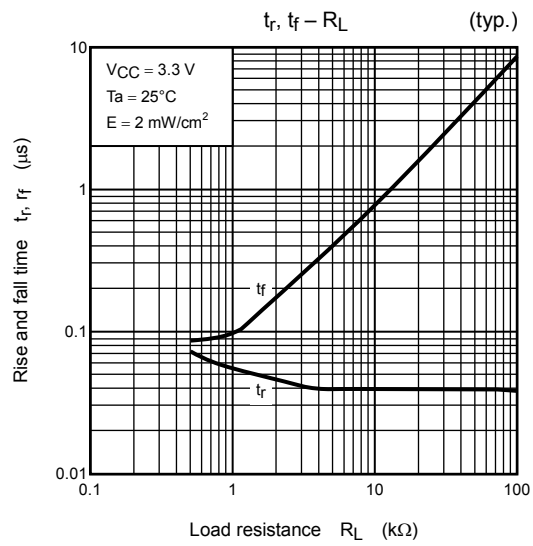
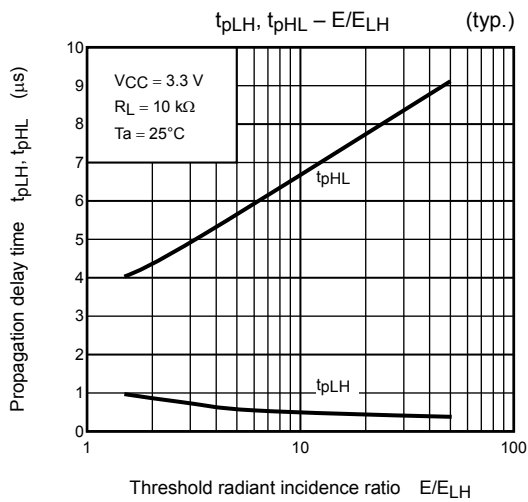
TPS843(F)



Precautions

- When you consider a combined use with an LED, be sure to use an infrared LED. Visible rays in wavelength of less than 700 nm cannot be detected.
- Make sure the shielding plate that is used to detect positions is manufactured from materials with superior light-shielding characteristics. Insufficient shield can cause malfunction.
- Photo ICs contain a high-sensitivity amplifier. Toshiba recommends connecting a capacitor of about 0.01 μ F that has good high-frequency characteristics between VCC and GND near the device to prevent unwanted oscillation.
- Please install so that disturbance light is not irradiated by these products.
When disturbance light (incandescence light etc.) 700 nm or more is detected, it may incorrect-operate. Please perform sufficient evaluation and verification by set.
- During 100 μ s after turning on VCC, output voltage changes for stabilizing the inner circuit.





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