Absolute Maximum Ratings (Ta = 25°C)

Characteristics			Symbol	Rating	Unit
LED	Forward current		I_F	50	mA
	Forward current derating (Ta ≥ 25 °C)		ΔI_F/°C	−0.5	mA/°C
	Peak forward current (100 μs pulse, 100 pps)		I_{FP}	1	A
	Reverse voltage		V_R	5	V
	Diode power dissipation		P_D	50	mW
	Diode power dissipation derating (Ta >25 °C)		ΔP_D /°C	-0.5	mW/°C
	Junction temperature		T_j	125	°C
Detector	Off-state output terminal voltage		V_{OFF}	60	V
	On-state current	A connection	I_{ON}	400	mA
		B connection		400	
		C connection		800	
	Forward current derating (Ta ≥ 25 °C)	A connection	ΔI_{ON}/°C	−4.0	mA/°C
		B connection		−4.0	
		C connection		−8.0	
	Output power dissipation		P_O	256	mW
	Output power dissipation derating (Ta ≥ 25 °C)		ΔP_O/ °C	−2.56	mW / °C
	Junction temperature		T_j	125	°C
Storage temperature			T_{stg}	−55 to 125	°C
Operating temperature			T_{opr}	−40 to 85	°C
Lead soldering temperature (10 s)			T_{sol}	260	°C
Isolation voltage (AC, 60 s, R.H. ≤ 60 %) (Note 1)			BV_S	1500	Vrms

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.
Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook (“Handling Precautions”/“Derating Concept and Methods”) and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

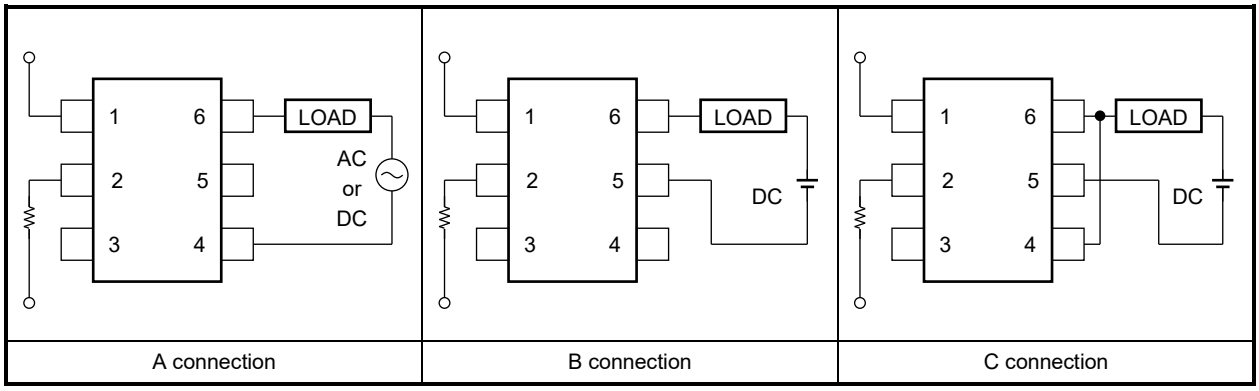
Note 1: LED pins are shorted together. Detector pins are also shorted together.

Recommended Operating Conditions

Characteristics	Symbol	Min	Typ.	Max	Unit
Supply voltage	V_{DD}	—	—	48	V
Forward current	I_F	5	7.5	25	mA
On-state current	I_{ON}	—	—	400	mA
Operating temperature	T_{opr}	−20	—	65	°C

Note: Recommended operating conditions are given as a design guideline to obtain expected performance of the device. Additionally, each item is an independent guideline respectively. In developing designs using this product, please confirm specified characteristics shown in this document.

Circuit Connections



A connection	B connection	C connection

Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
LED	Forward voltage	V_F	I_F = 10 mA	1.0	1.15	1.3	V
	Reverse voltage	I_R	V_R = 5 V	—	—	10	μA
	Capacitance between terminals	C_T	V_F = 0 V, f = 1 MHz	—	30	—	pF
Detector	Off-state current	I_{OFF}	V_{OFF} = 60 V	—	—	1	μA
	Capacitance between terminals	C_{OFF}	V = 0 V, f = 1 MHz	—	130	—	pF

Coupled Electrical Characteristics (Ta = 25°C)

Characteristics		Symbol	Test Condition	Min	Typ.	Max	Unit
Trigger LED current		I_{FT}	I_{ON} = 400 mA	—	1.6	3	mA
Return LED current		I_{FC}	I_{OFF} = 100 μA	0.1	—	—	mA
On-state resistance	A connection	R_{ON}	I_{ON} = 400 mA, I_F = 5 mA	—	1	2	Ω
	B connection		I_{ON} = 400 mA, I_F = 5 mA	—	0.5	1	
	C connection		I_{ON} = 800 mA, I_F = 5 mA	—	0.25	—	

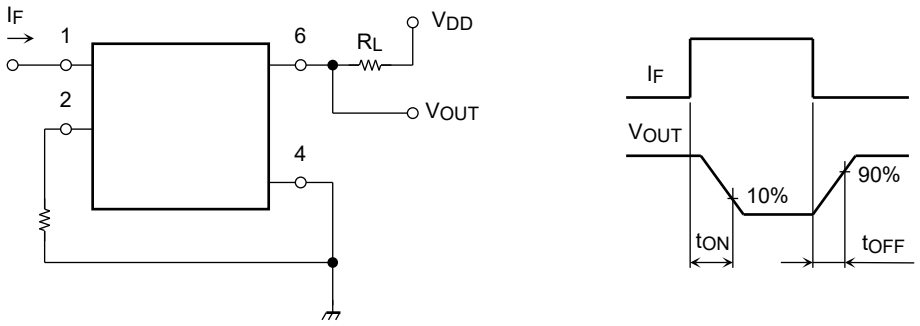
Isolation Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Capacitance input to output	C_S	V_S = 0 V, f = 1 MHz	—	0.8	—	pF
Isolation resistance	R_S	V_S = 500 V, R.H. ≤ 60 %	5×10^{10}	10^{14}	—	Ω
Isolation voltage	BV_S	AC, 60 s	1500	—	—	Vrms

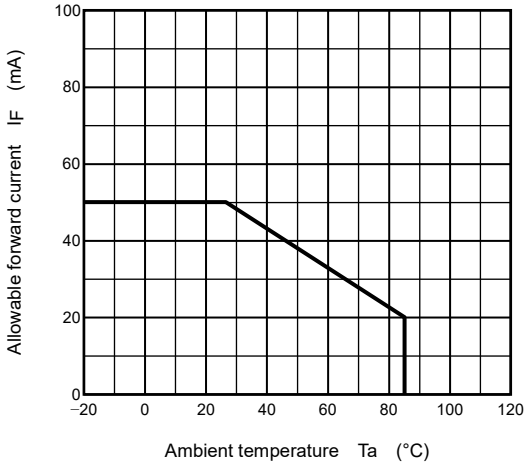
Switching Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Turn-on time	t_{ON}	R_L = 200 Ω (Note 2) V_{DD} = 20 V, I_F = 5 mA	—	0.8	2	ms
Turn-off time	t_{OFF}		—	0.1	0.5	

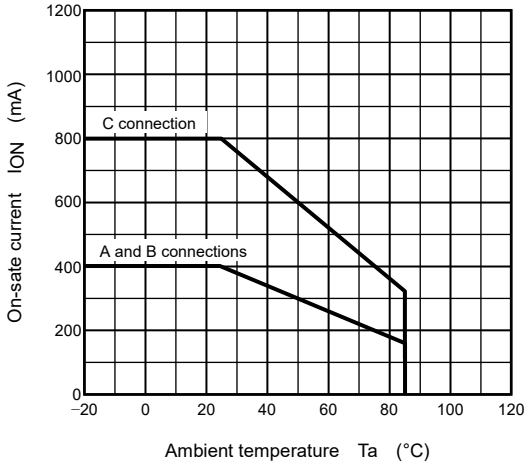
Note 2: Switching time test circuit



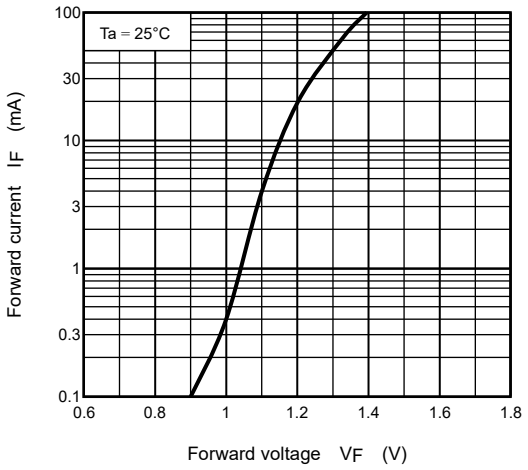
I_F – Ta



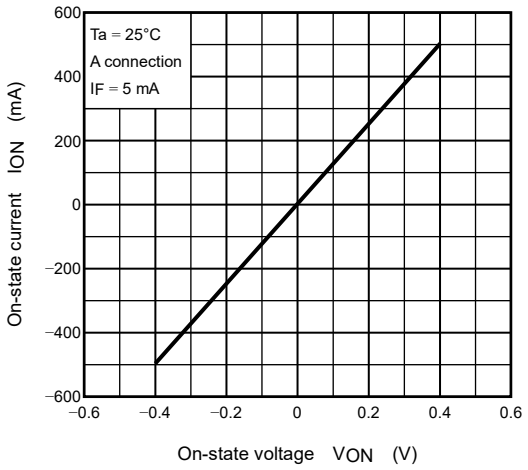
I_{ON} – Ta



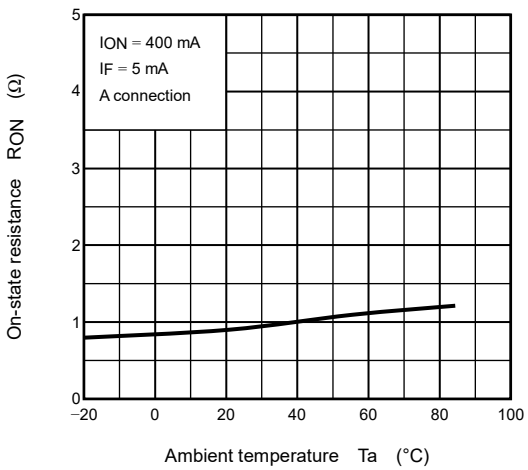
I_F – V_F



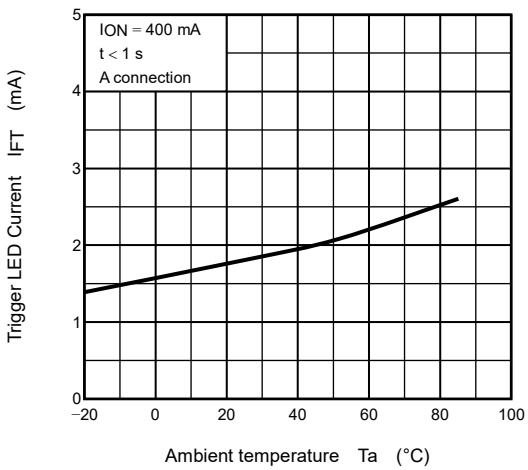
I_{ON} – V_{ON}



R_{ON} – Ta



I_{FT} – Ta



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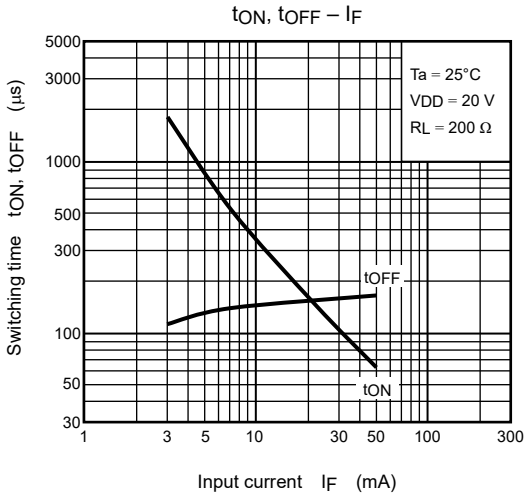

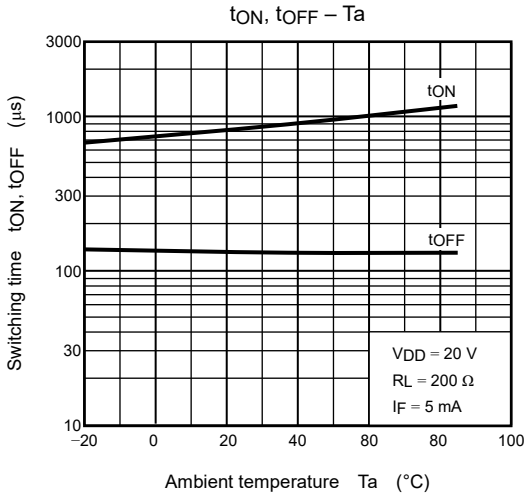

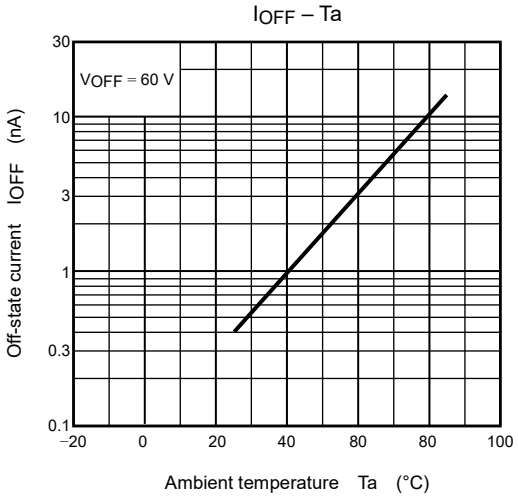

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