Absolute Maximum Ratings (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
LED	Forward Current	I_F	30	mA
	Forward Current Derating (Ta ≥ 25°C)	ΔI_F/°C	−0.3	mA/°C
	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	I_{ON}	2.5	A
	On-State Current Derating(Ta ≥ 40°C)	ΔI_{ON}/°C	-22	mA/°C
	Output Power Dissipation	Po	625	mW
	Output Power Dissipation Derating (Ta ≥ 40°C)	ΔPo / °C	−7.4	mW / °C
	Junction Temperature	T_j	125	°C
Storage Temperature Range		T_{stg}	−40 to 125	°C
Operating Temperature Range		T_{opr}	−20 to 85	°C
Lead Soldering Temperature (10 s)		T_{sol}	260	°C
Isolation Voltage (AC, 60 s, R.H.≤ 60 %) (NOTE1)		BV_S	2500	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: Device considered a two-terminal device: Pins 1, 2 and 3 shorted together, and pins 4 and 6 shorted together.

Recommended Operating Conditions

CHARACTERISTIC	SYMBOL	MIN	TYP.	MAX	UNIT
Supply Voltage	V_{DD}	—	—	48	V
Forward Current	I_F	10	—	20	mA
On-State Current	I_{ON}	—	—	2.5	A
Operating Temperature	T_{opr}	-20	—	60	°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.

Individual Electrical Characteristics (Ta = 25°C)

	CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
LED	Forward Voltage	V_F	I_F = 10 mA	1.18	1.33	1.48	V
	Reverse Current	I_R	V_R = 5 V	—	—	10	μA
	Capacitance	C_T	V = 0 V, f = 1 MHz	—	70	—	pF
DETECTOR	Off-State Current	I_{OFF}	V_{OFF} = 20 V	—	0.1	1.5	nA
			V_{OFF} = 60 V	—	1.0	10	nA
	Capacitance	C_{OFF}	V = 0 V, f = 1 MHz	—	400	600	pF

Coupled Electrical Characteristics (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Trigger LED Current	I_{FT}	I_{ON} = 1.0 A	—	1	3	mA
Return LED Current	I_{FC}	I_{OFF} = 10 μA	0.1	—	—	mA
On-State Resistance	R_{ON}	I_{ON} = 2.0 A, I_F = 10 mA, t = 10 ms	—	65	100	mΩ

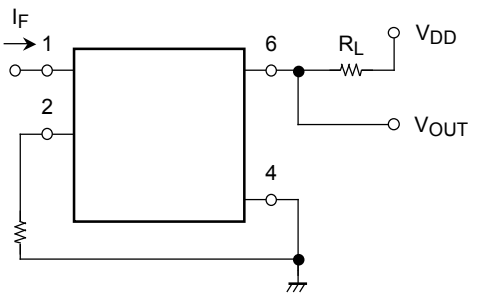
Isolation Characteristics (Ta = 25°C)

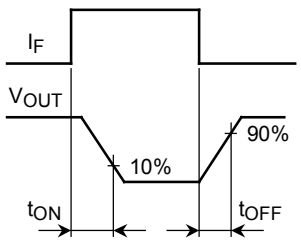
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Capacitance Input to Output	C_S	V_S = 0 V, f = 1 MHz	—	0.8	—	pF
Isolation Resistance	R_S	V_S = 500 V, R.H. ≤ 60 %	5×10^{10}	10^{14}	—	Ω
Isolation Voltage	BV_S	AC, 60 s	2500	—	—	Vrms

Switching Characteristics (Ta = 25°C)

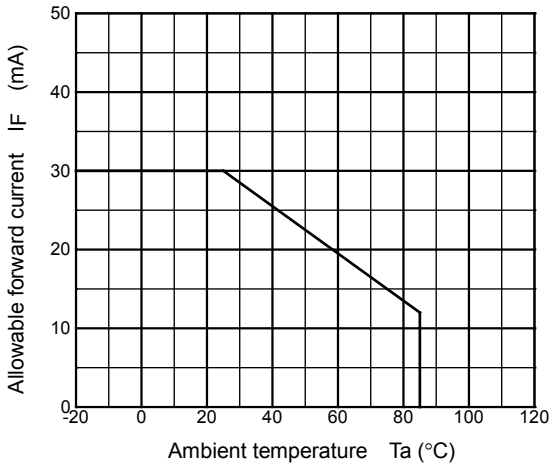
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN	TYP.	MAX	UNIT
Turn-on Time	t_{ON}	R_L = 200 Ω (NOTE 2) V_{DD} = 20 V, I_F = 5 mA	—	1.5	3.0	ms
Turn-off Time	t_{OFF}		—	0.2	0.6	
Turn-on Time	t_{ON}	R_L = 200 Ω (NOTE 2) V_{DD} = 20 V, I_F = 10 mA	—	1.0	1.5	ms
Turn-off Time	t_{OFF}		—	0.2	0.4	

(NOTE 2) : SWITCHING TIME TEST CIRCUIT

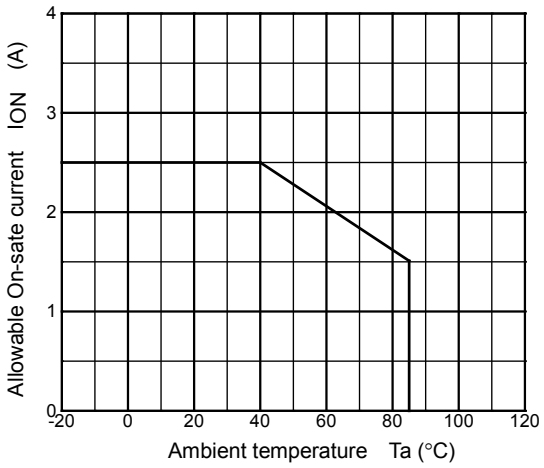




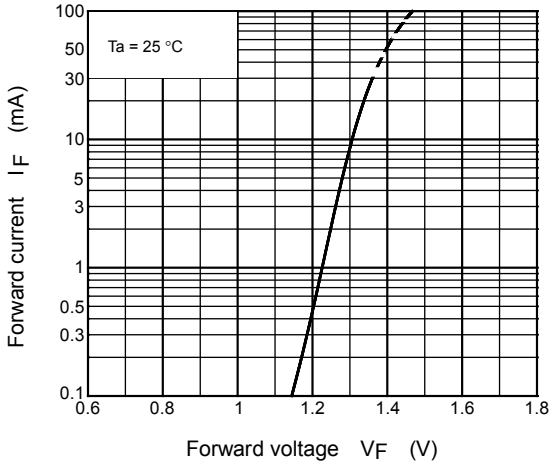
$I_F - Ta$



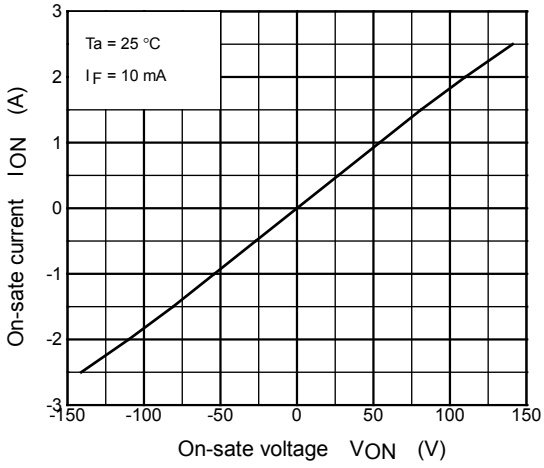
$I_{ON} - Ta$



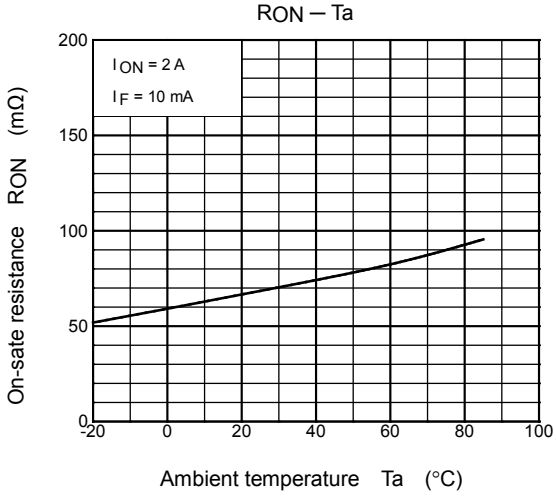
$I_F - V_F$



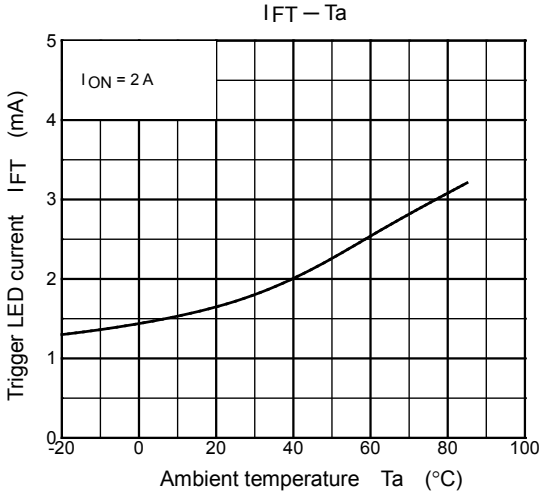
$I_{ON} - V_{ON}$



$R_{ON} - Ta$

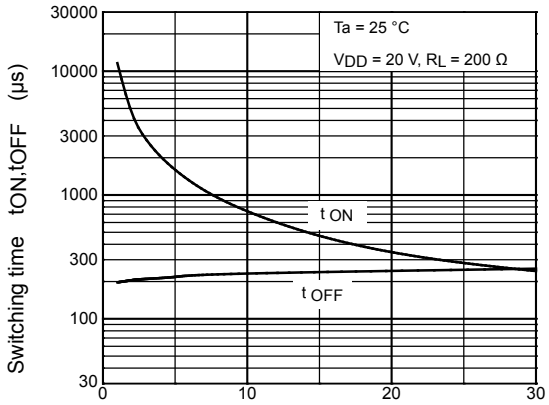


$I_{FT} - Ta$

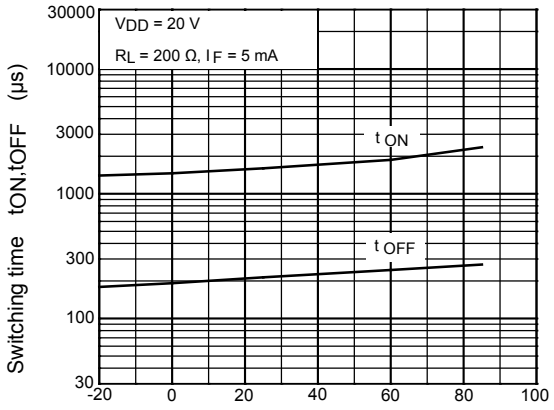


NOTE: The above characteristics curves are presented for reference only and not guaranteed by production test, unless otherwise noted.

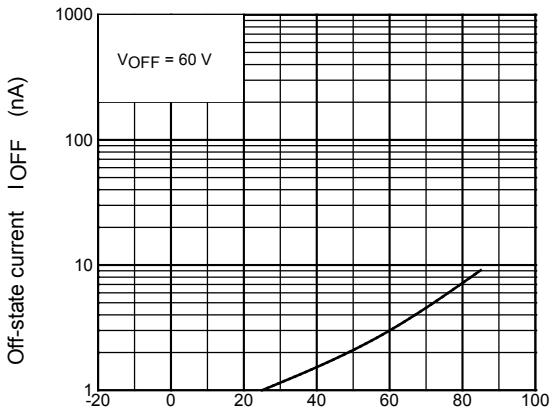
t_{ON},t_{OFF} – I_F



t_{ON},t_{OFF} – Ta



I_{OFF} – Ta



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