Unit in mm

Telecommunication

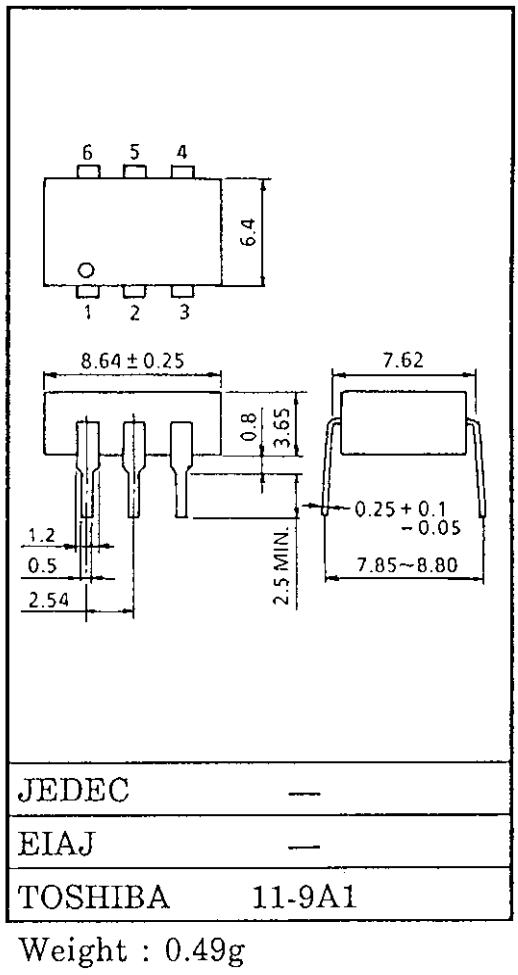
Data Acquisition

Measurement Instrumentation

The Toshiba TLP595G consists of an aluminum gallium arsenide infrared emitting diode optically coupled to a photo-MOSFET in a six lead plastic DIP package. The TLP595G is a bi-directional switch which can replace mechanical relays in many applications.

www.DataSheet4U.com

- Peak Off-State Voltage : 400V (Min.)
- On-State Current : 150mA (Max.) (A Connection)
- On-State Resistance : 12Ω (Max.) (A Connection)
- Isolation Voltage : 2500Vrms (Min.)
- UL Recognized : UL1577, File No. E67349
- Trigger LED Current (Ta = 25°C)

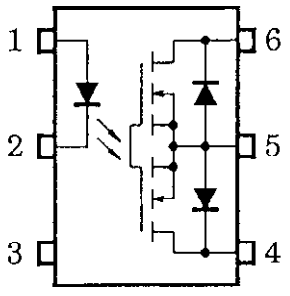


JEDEC	—
EIAJ	—
TOSHIBA	11-9A1

Weight : 0.49g

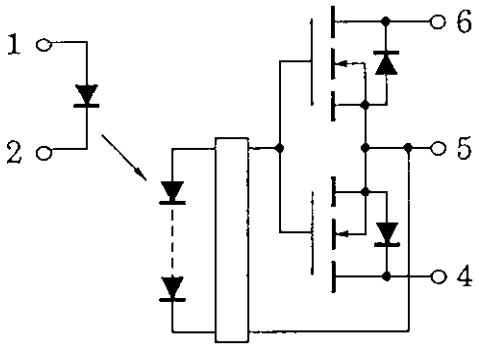
Supplementary Information	Page (s)
Lead Form Options	31-32
Tape and Reel	39-40

Pin Configuration (Top View)



1. : ANODE
2. : CATHODE
3. : NC
4. : DRAIN D1
5. : SOURCE
6. : DRAIN D2

Schematic



The information contained here is subject to change without notice.
The information contained herein is presented only as guide for the applications of our products. No responsibility is assumed by TOSHIBA for any infringements of patents or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of TOSHIBA or others. These TOSHIBA products are intended for usage in general electronic equipments (office equipment, communication equipment, measuring equipment, domestic electrification, etc.) Please make sure that you consult with us before you use these TOSHIBA products in equipments which require high quality and/or reliability, and in equipments which could have major impact to the welfare of human life (atomic energy control, spaceship, traffic signal, combustion control, all types of safety devices, etc.). TOSHIBA cannot accept liability to any damage which may occur in case these TOSHIBA products were used in the mentioned equipments without prior consultation with TOSHIBA.

www.DataSheet4U.com

CLASSIFICATION (Note 1)	TRIGGER LED CURRENT (mA) @I_{ON} = 150mA		MARKING OF CLASSIFICATION
	MIN.	MAX.	
(IFT2)	–	2	T2
Standard	–	5	T2, Blank

Note 1: Application type name for certification test, please use standard product type name, i.e., TLP595G (IFT2): TLP595G

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
	Peak Forward Current (100μs pulse, 100pps)		I_{FP}	1	A
	Reverse Voltage		V_R	5	V
	Junction Temperature		T_j	125	°C
DETECTOR	Off-State Output Terminal Voltage		V_{OFF}	400	V
	On-State RMS Current	A Connection	I_{ON}	150	mA
		B Connection		200	
		C Connection		300	
	On-State Current Derating (Ta ≥ 25°C)	A Connection	ΔI_{ON}/°C	-1.5	mA/°C
		B Connection		-2.0	
		C Connection		-3.0	
	Junction Temperature		t_j	125	°C
Storage Temperature Range			T_{stg}	-55~100	°C
Operating Temperature Range			T_{opr}	-20~85	°C
Lead Soldering Temperature (10s)			T_{sol}	260	°C
Isolation Voltage (AC, 1 min., R.H. ≤ 60%)		(Note 2)	BV_S	2500	V_{rms}

Note 1:Device considered a two terminal device: pins 1, 2 and 3 shorted together, and pins 4, 5 and 8 shorted together.

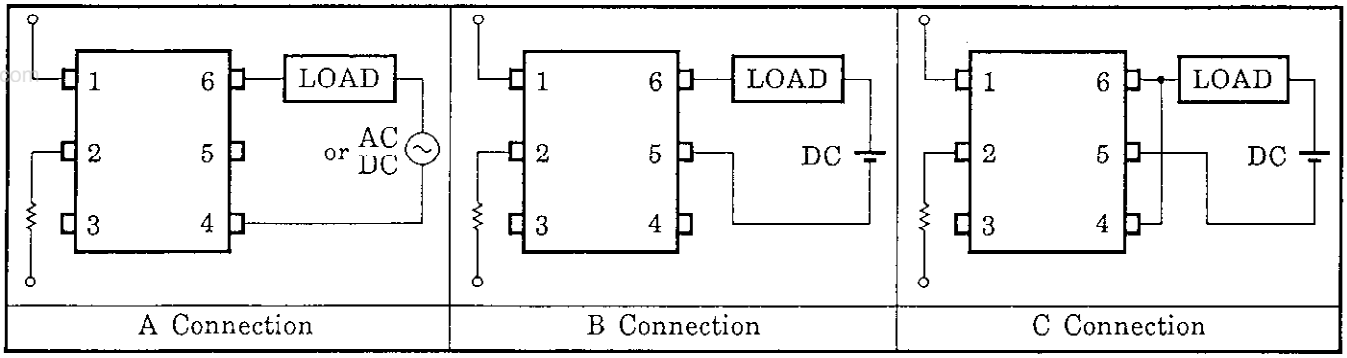
www.DataSheet4U.com

Recommended Operating Conditions

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MX.	UNIT
Supply Voltage	V_D	–	–	320	V
Forward Current	I_F	10	15	20	mA
On-State Current	I_{ON}	–	–	150	mA
Operating Temperature	T_{opr}	-20	–	80	°C

Circuit Connections

www.DataSheet4U.com



Individual Electrical Characteristics (Ta = -25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.*	MX.	UNIT
LED	Forward Voltage	V_F	I_F = 10mA	1.2	1.4	1.7	V
	Reverse Current	I_R	V_R = 3V	–	–	10	μA
	Capacitance	C_T	V = 0, f = 1MHz	–	15	–	pF
DETECTOR	Off-State Current	I_{OFF}	V_{OFF} = 400V	–	–	1	μA
	Capacitance	C_{OFF}	V = 0, f = 1MHz	–	–	–	pF

Coupled Electrical Characteristics (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MX.	UNIT
Trigger LED Current		I_{FT}	I_{ON} = 150mA	–	1	5	mA
On-State Resistance	A Connection	R_{ON}	I_{ON} = 150mA, I_F = 10mA	–	8	12	Ω
	B Connection		I_{ON} = 200mA, I_F = 10mA	–	4	6	
	C Connection		I_{ON} = 300mA, I_F = 10mA	–	2	3	

www.DataSheet4U.com

Isolation Characteristics (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MX.	UNIT
Capacitance Input to Output	C_S	V_S = 0, f = 1MHz	–	0.8	–	pF
Isolation Resistance	R_S	V_S = 500V, R.H. ≤ 60%	5×10^{10}	10^{14}	–	Ω
Isolation Voltage	BV_S	AC, 1 minute	2500	–	–	V_{rms}
		AC, 1 second in oil	–	5000	–	
		DC, 1 minute in oil	–	5000	–	V_{dc}

Switching Characteristics (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MX.	UNIT
Turn-on Time	t_{on}	V_{DD} = 20mA, R_L = 200Ω I_F = 10mA (Note 3)	–	0.3	1.0	ms
Turn-off Time	t_{off}		–	0.2	1.0	

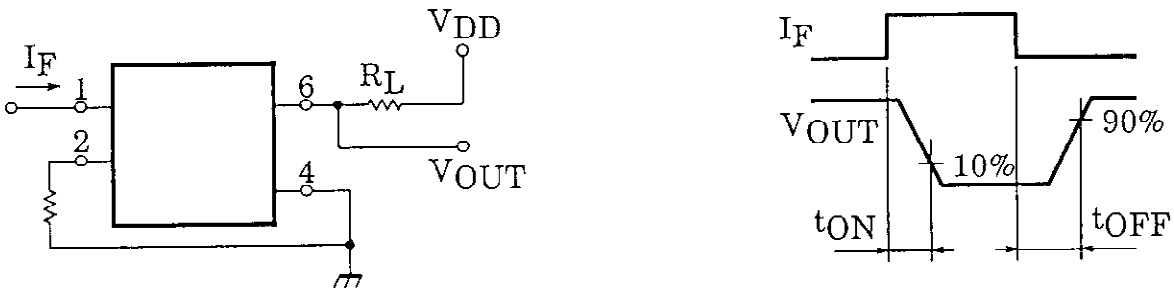
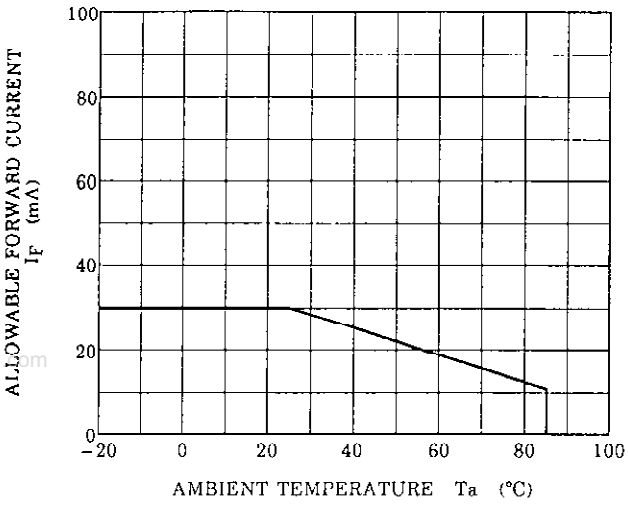


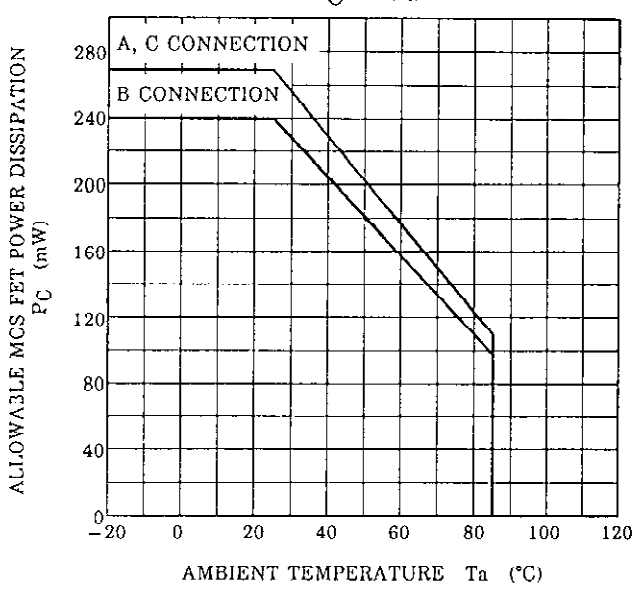
Figure 1. Switching Time Test Circuit

www.DataSheet4U.com

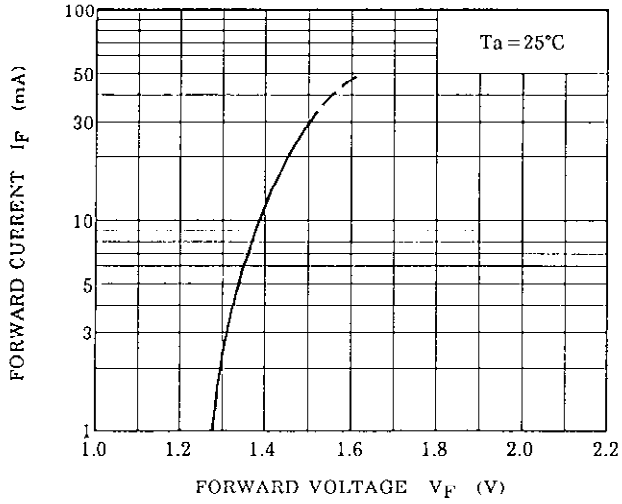
I_F – Ta



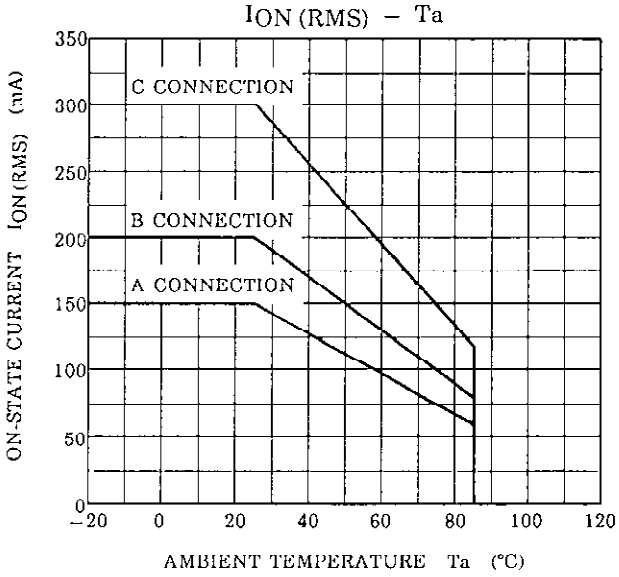
P_C – Ta



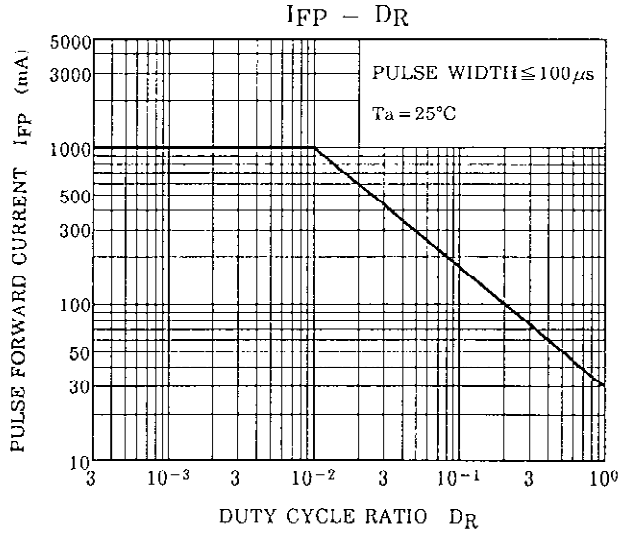
I_F – V_F



I_{ON} (RMS) – Ta

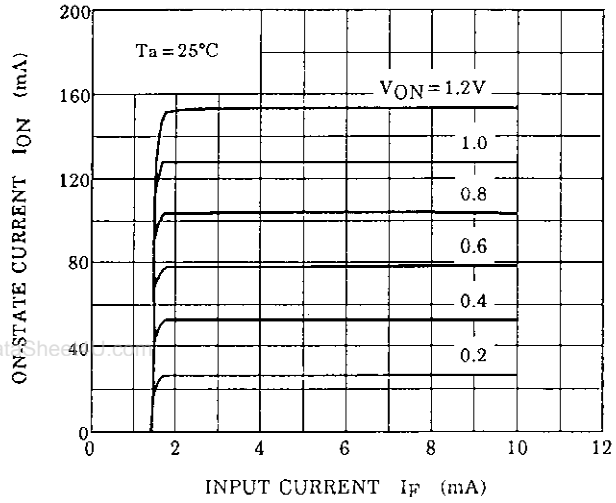


I_{FP} – D_R

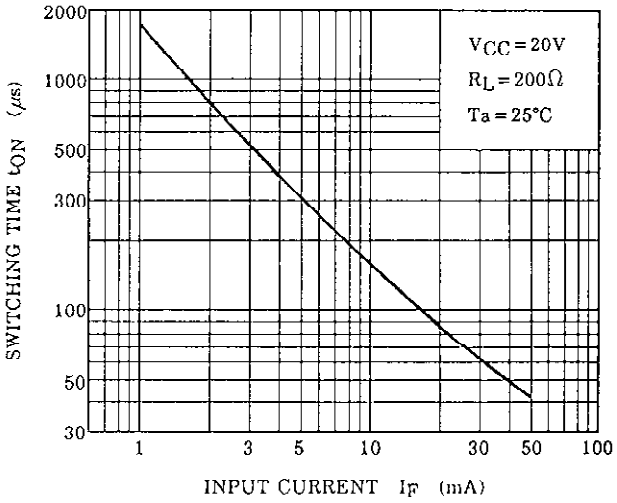


www.DataSheet4U.com

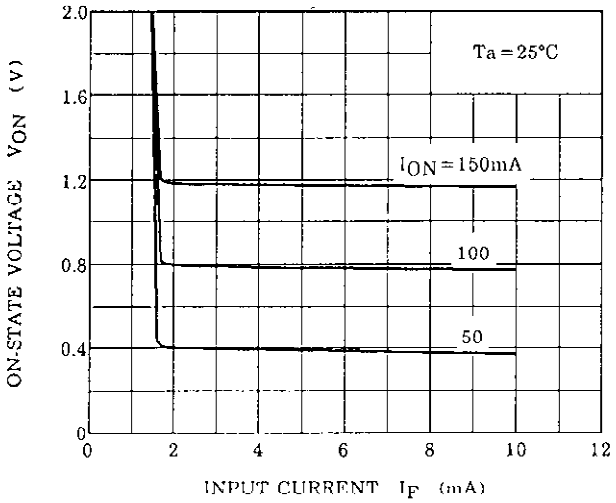
I_{ON} – I_F (A CONNECTION)



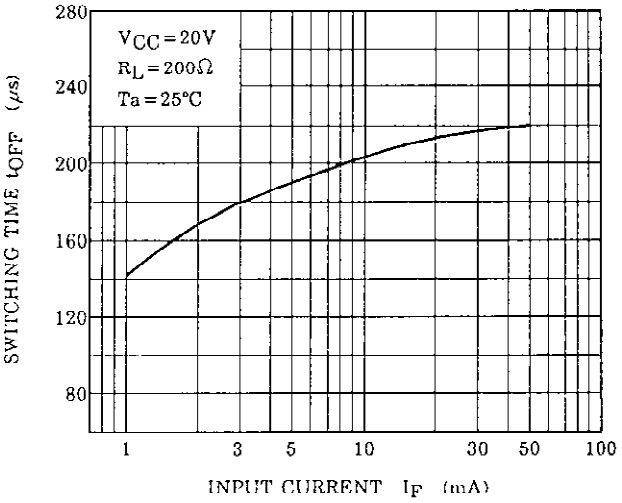
t_{ON} – I_F



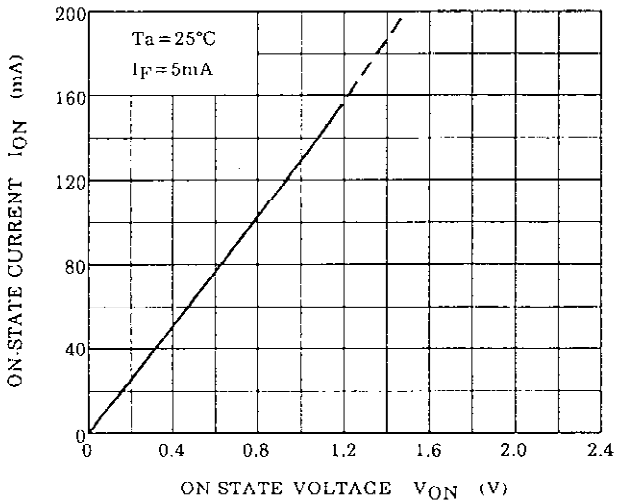
V_{ON} – I_F (A CONNECTION)



t_{OFF} – I_F

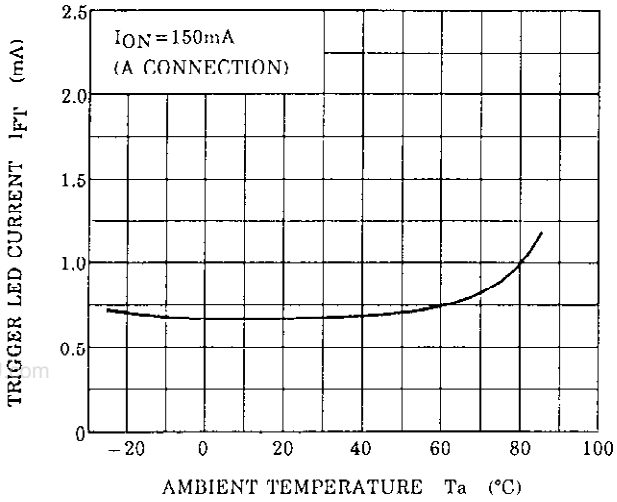


I_{ON} – V_{ON} (A CONNECTION)

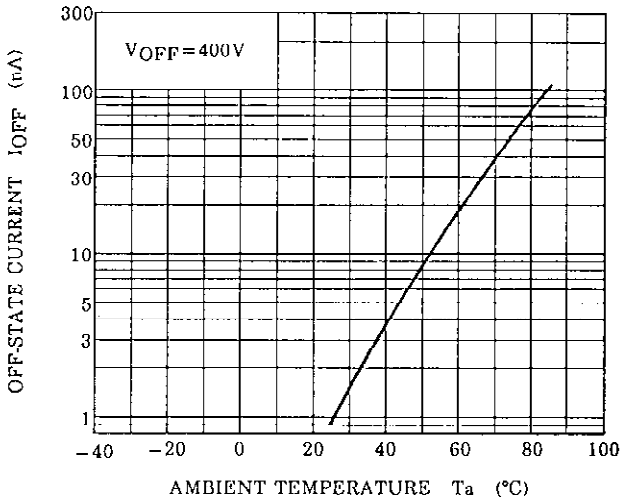


www.DataSheet4U.com

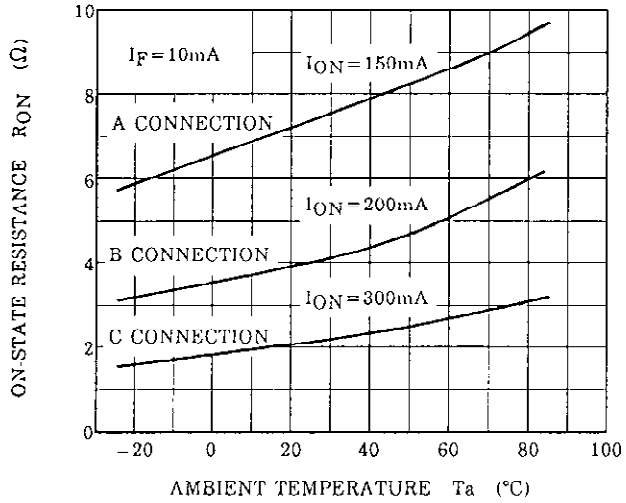
I_{FT} – Ta



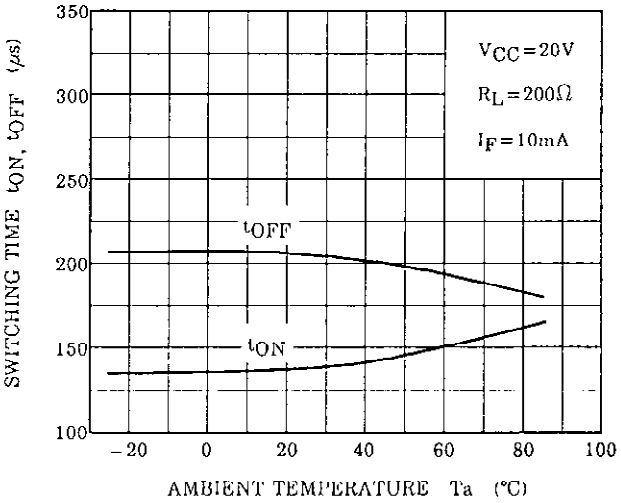
I_{OFF} – Ta



R_{ON} – Ta



SWITCHING TIME – Ta



www.DataSheet4U.com

Notes

www.DataSheet4U.com

www.DataSheet4U.com