

Unit in mm

### Telecommunication

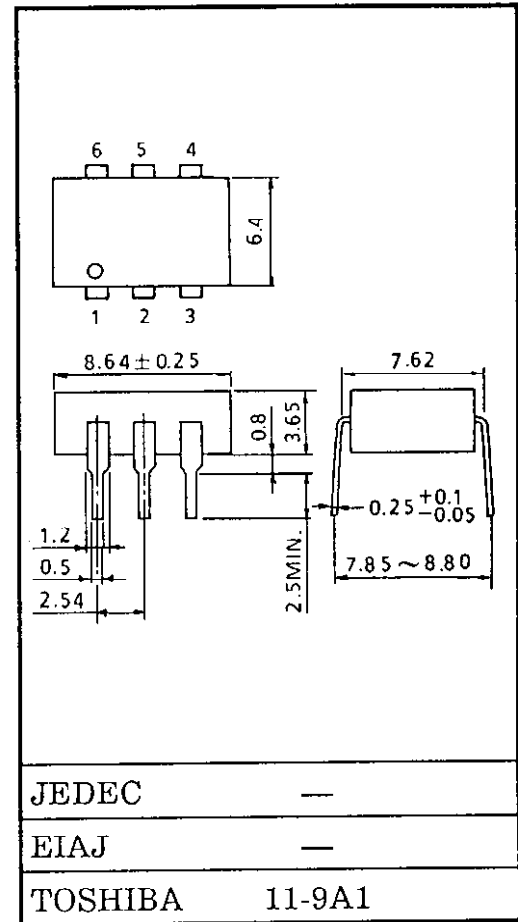
### Data Acquisition

### Measurement Instrumentation

The Toshiba TLP795G consists of an aluminum gallium arsenide infrared emitting diode optically coupled to a photo-MOSFET in a six lead plastic DIP package. The TLP795G is a bi-directional switch which can replace mechanical relays in many applications.

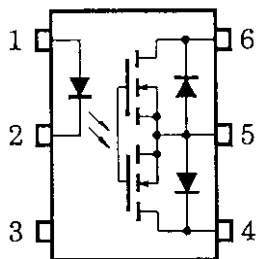
- Peak Off-State Voltage : 400V (Min.)
- Trigger LED Current : 5mA (Max.)
- On-State Current : 150mA (Max.) (A Connection)
- On-State Resistance : 12Ω (Max.) (A Connection)
- Isolation Voltage : 0.4mm (Min.)
- Isolation Voltage : 5000V<sub>rms</sub> (Min.)

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Lead Form Options	31-32
Tape and Reel	39-40



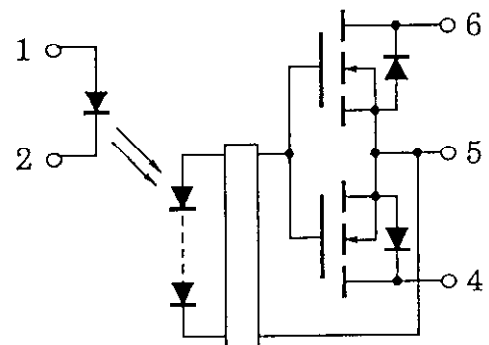
Weight : 0.49g

### Pin Configuration (Top View)



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

### Schematic



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Maximum Ratings (Ta = 25°C)

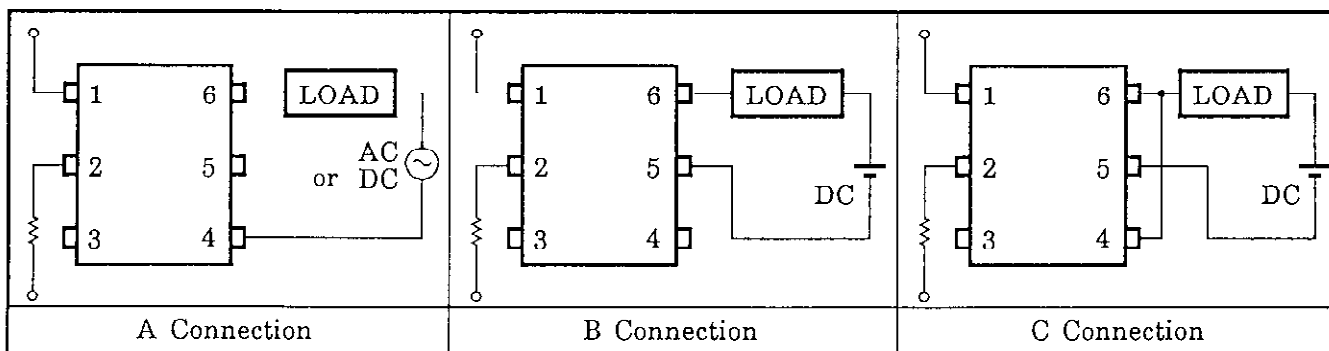
CHARACTERISTIC		SYMBOL	RATING	UNIT	
LED	Forward Current	$I_F$	30	mA	
	Forward Current Derating (Ta ≥ 25°C)	$\Delta I_F/^\circ\text{C}$	-0.3	mA/°C	
	Peak Forward Current (100µs pulse, 100pps)	$I_{FP}$	1	A	
	Reverse Voltage	$V_R$	5	V	
	Junction Temperature	$T_j$	125	°C	
DETECTOR	Off-State Output Terminal Voltage	$V_{OFF}$	400	V	
	On-State RMS Current	A Connection	150	mA	
		B Connection	200		
		C Connection	300		
	On-State Current Derating (Ta ≥ 25°C)	A Connection	$\Delta I_{ON}/^\circ\text{C}$	-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 1)		$BV_S$	5000	$V_{rms}$	

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

Recommended Operating Conditions

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MX.	UNIT
Supply Voltage	$V_{DD}$	-	-	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



**Individual Electrical Characteristics (Ta = -25°C)**

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

**Coupled Electrical Characteristics (Ta = 25°C)**

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

**Isolation Characteristics (Ta = 25°C)**

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MX.	UNIT
Capacitance Input to Output	$C_S$	$V_S = 0, f = 1\text{MHz}$	–	0.8	–	pF
Isolation Resistance	$R_S$	$V_S = 500\text{V}, \text{R.H.} \leq 60\%$	$5 \times 10^{10}$	$10^{14}$	–	$\Omega$
Isolation Voltage	$BV_S$	AC, 1 minute	2500	–	–	$V_{rms}$
		AC, 1 second in oil	–	10000	–	$V_{dc}$
		DC, 1 minute in oil	–	10000	–	

**Switching Characteristics (Ta = 25°C)**

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MX.	UNIT
Turn-on Time	$t_{on}$	$V_{DD} = 20\text{mA}, R_L = 200\Omega$	–	0.3	1.0	ms
Turn-off Time	$t_{off}$	$I_F = 10\text{mA}$ (Note 2)	–	0.2	1.0	

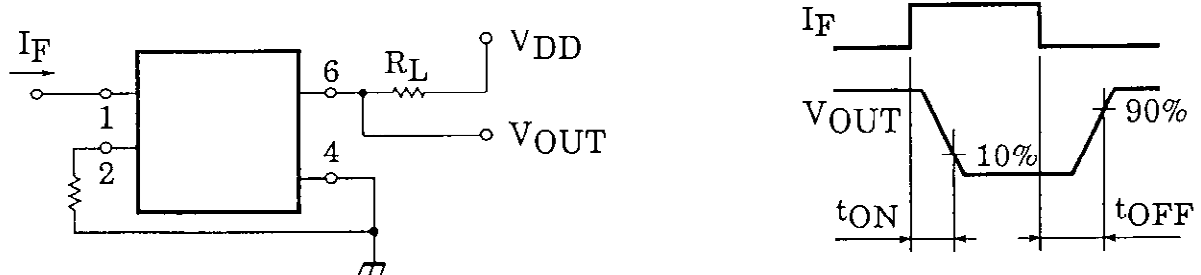
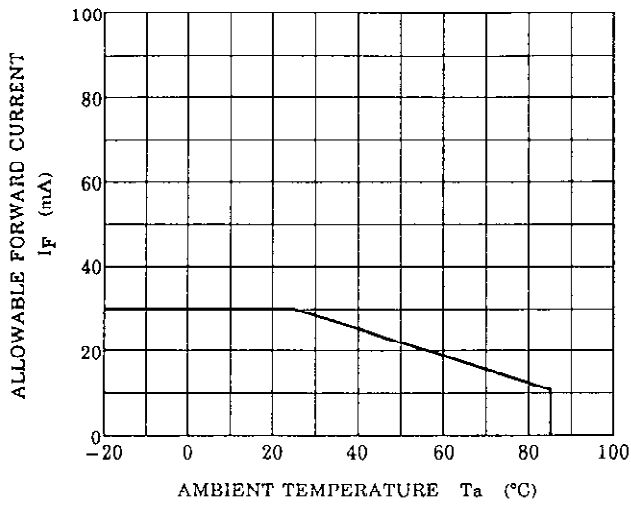
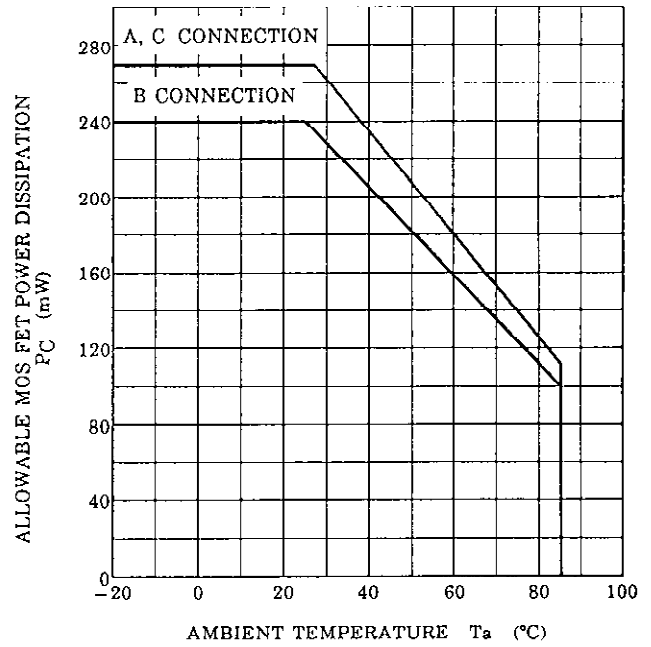


Figure 1. Switching Time Test Circuit

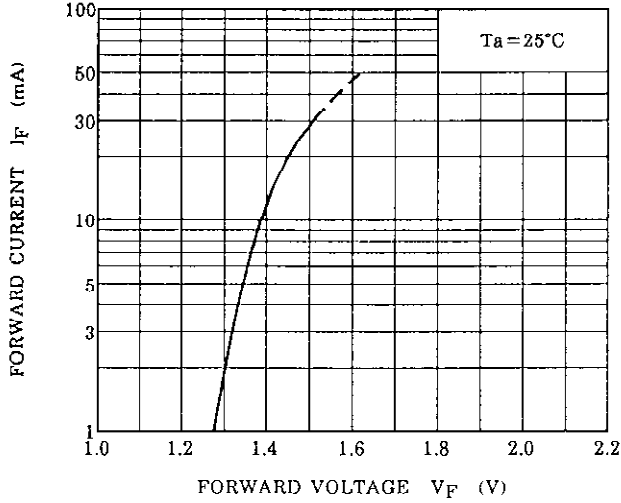
$I_F - T_a$



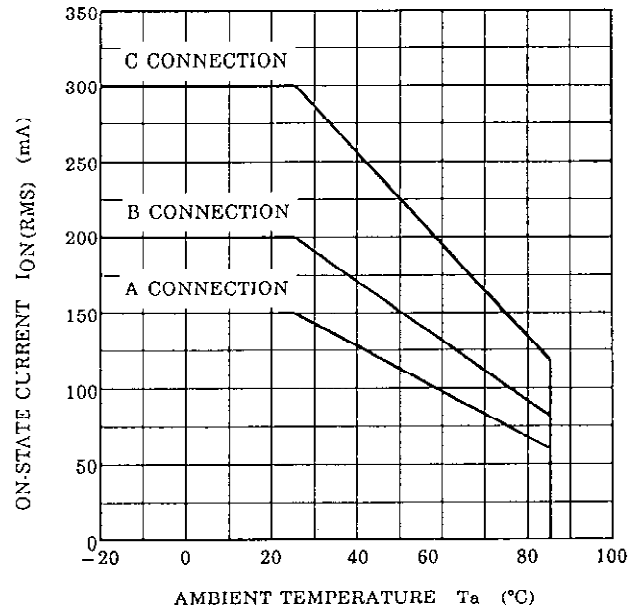
$P_C - T_a$



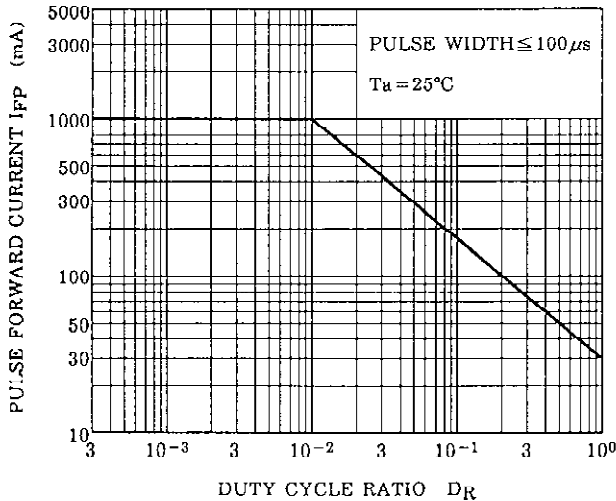
$I_F - V_F$

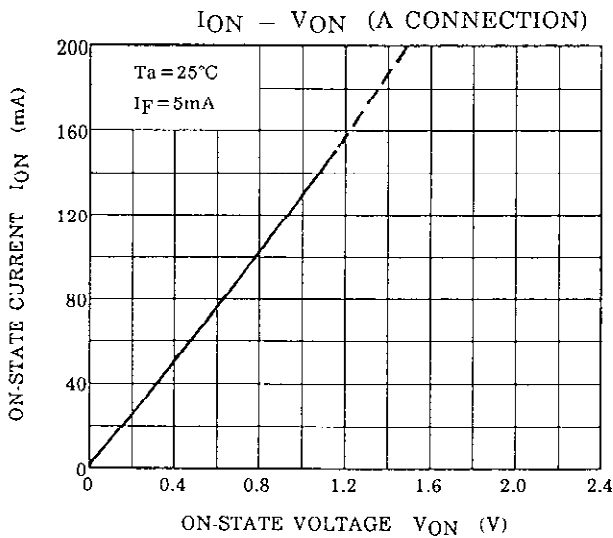
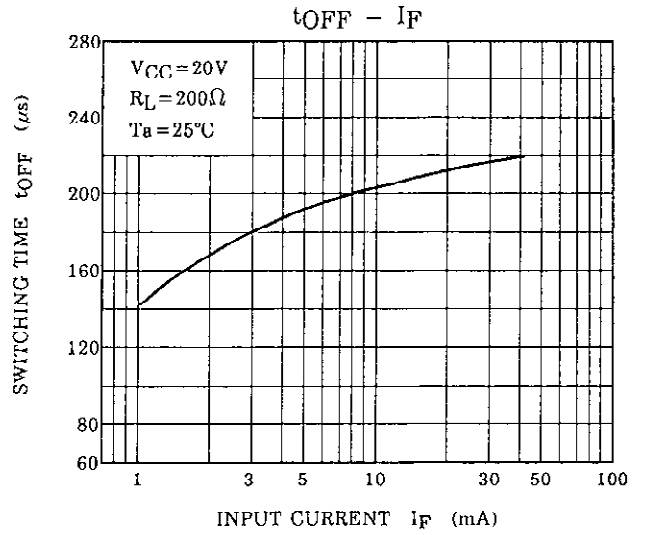
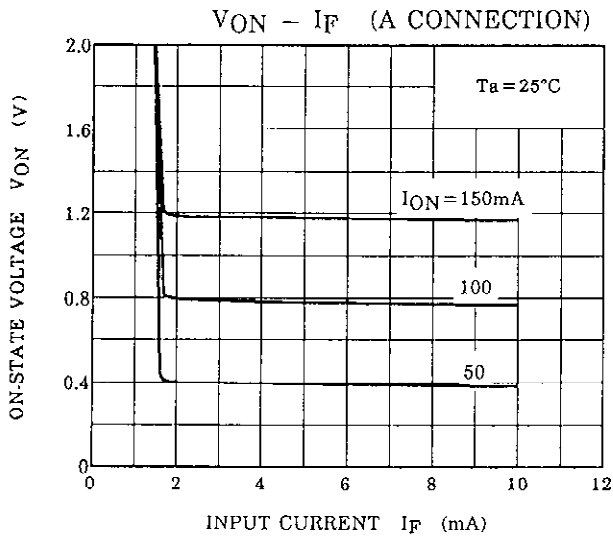
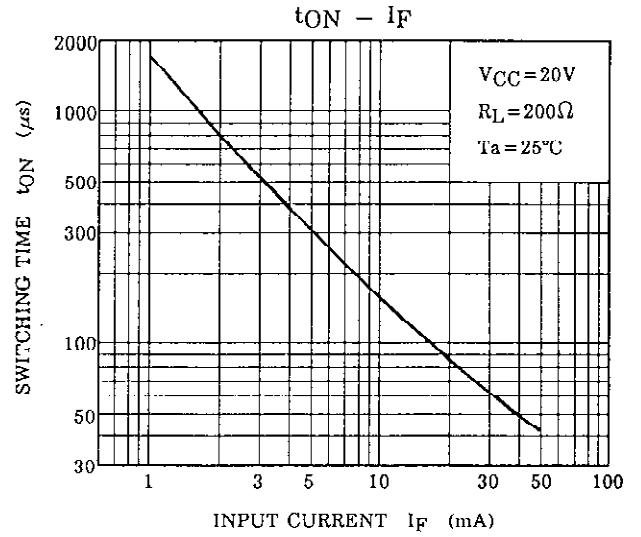
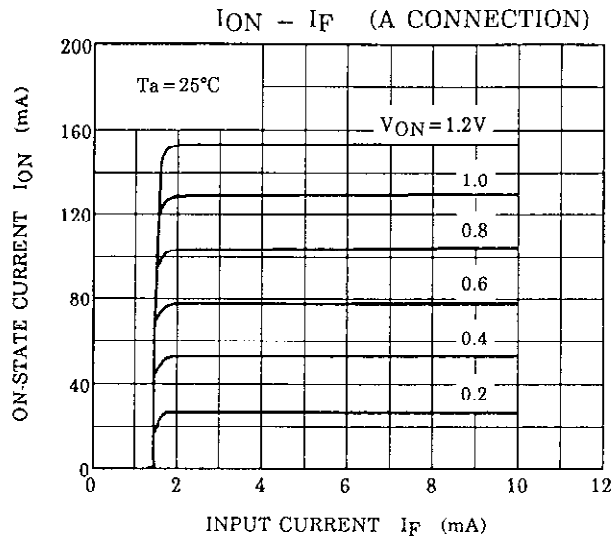


$I_{ON(RMS)} - T_a$

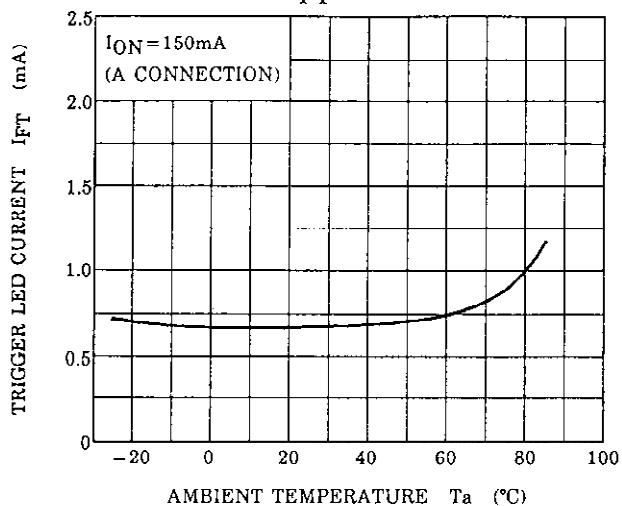


$I_{FP} - D_R$

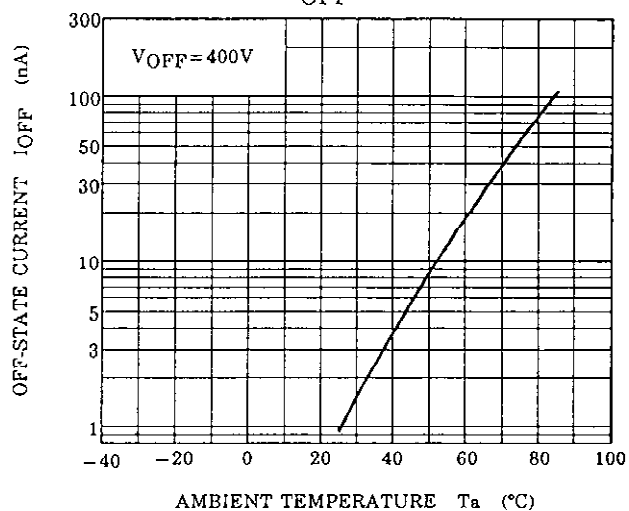




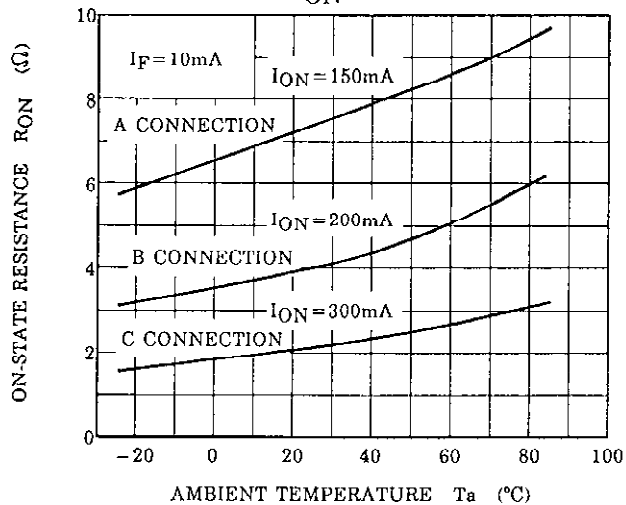
$I_{FT} - T_a$



$I_{OFF} - T_a$



$R_{ON} - T_a$



SWITCHING TIME -  $T_a$

