

TELECOMMUNICATION
DATA ACQUISITION
MEASUREMENT INSTRUMENTATION

The TOSHIBA TLP595G consists of a gallium arsenide infrared emitting diode optically coupled to a photo-MOS FET in a eight lead plastic DIP package. The TLP595G 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)

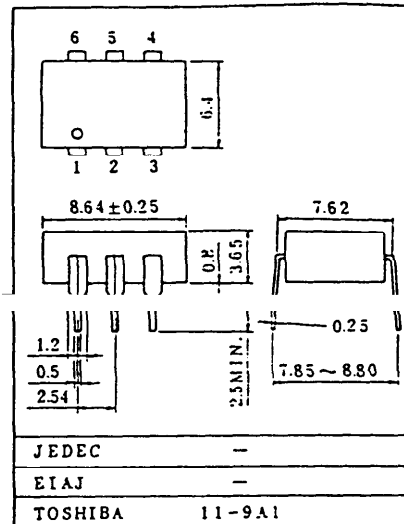
Trigger LED Current (Ta=25°C)

CLASSIFICATION (Note)	Trigger LED Current (mA)		MARKING OF CLASSIFICATION
	Ion=150mA		
	Min.	Max.	
(IFT2)	-	2	T2
Standard	-	5	T2, blank

Note: Application type name for certification test, please use standard product type name, i.e.

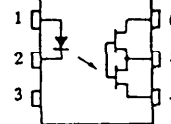
TLP595G(IFT2) : TLP595G

Unit in mm

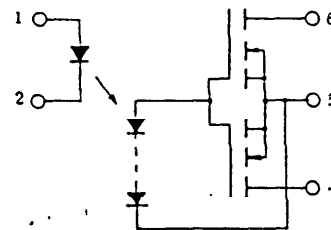


PIN CONFIGURATION

(TOP VIEW)



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



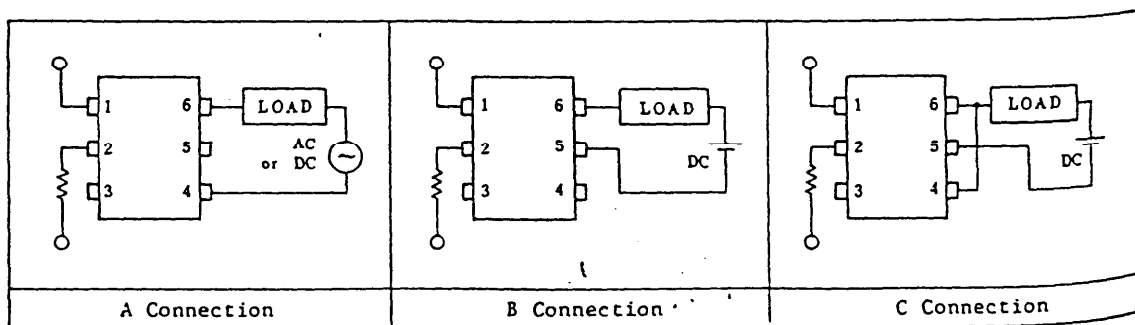
TLP595G

MAXIMUM RATINGS (Ta=25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
LED	Forward Current	I_F	30	mA
	Forward Current Derating (Ta ≥ 25°C)	$\Delta I_F / ^\circ C$	-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	-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 (10 sec.)	T_{sold}	260	°C	
Isolation Voltage (AC, 1 min., RH ≤ 60%)	V_{IS}	2500	V_{rms}	

RECOMMENDED OPERATING CONDITIONS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V_{OFF}	-	-	400	V
Forward Current	I_F	10	15	20	mA
On-State Current	I_{ON}	-	-	150	mA
Operating Temperature	T_{opr}	-20	-	80	°C



TLP595G

INDIVIDUAL ELECTRICAL CHARACTERISTICS (Ta=25°C)

	CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
LED	Forward Voltage	V _F	I _F =10mA	1.2	1.4	1.7	V
	Forward 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 Input to Output	C _{OFF}	V=0, f=1MHz	-	-	-	pF

COUPLED ELECTRICAL CHARACTERISTICS (Ta=25°C)

	CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	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	

ISOLATION CHARACTERISTICS (Ta=25°C)

	CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
	Capacitance Input to Output	C _S	V _S =0, f=1MHz	-	0.8	-	pF
	Isolation Resistance	R _S	V _S =500V	5 × 10 ¹⁰	10 ¹⁴	-	Ω
Isolation Voltage		B _V S	AC, 1 minute	2500	-	-	V _{rms}
			AC, 1 second	-	5000	-	
			DC, 1 minute	-	5000	-	V _{DC}

SWITCHING CHARACTERISTICS (Ta=25°C)

	CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Turn-on Time	Turn-on Time	t _{ON}	V _{CC} =20V, R _L =200Ω	-	0.3	1.0	ms

SWITCHING TIME TEST CIRCUIT

