

TENTATIVE DATA

(TLP597G)

CORDLESS TELEPHONE

PABX

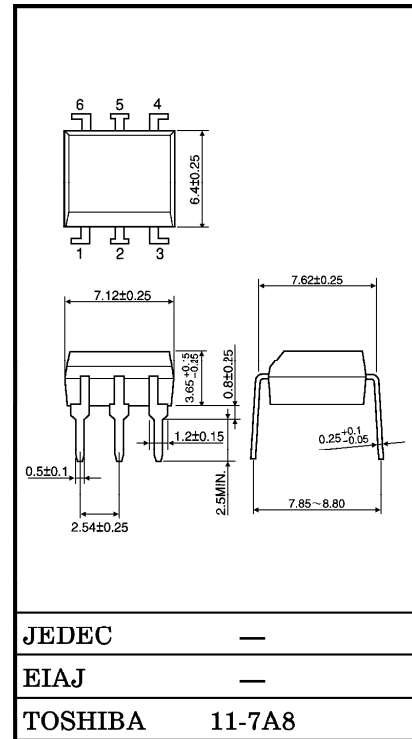
MODEM

The TOSHIBA TLP597G consists of a gallium arsenide infrared emitting diode optically coupled to a photo-MOS FET in a six lead plastic DIP package.

The TLP597G is a bi-directional switch which can replace mechanical relay in many applications.

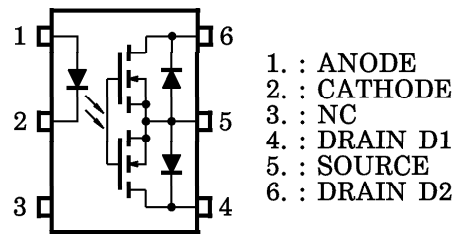
- Peak Off-State Voltage : 350V (MIN.)
- Trigger LED Current : 5mA (MAX.)
- On-State Current : 120mA (MAX.) (A Connection)
- On-State Resistance : 35Ω (MAX.) (A Connection)
- Isolation Voltage : 2500V<sub>rms</sub> (MIN.)
- UL Recognized : UL1577, File No. E67349

Unit in mm

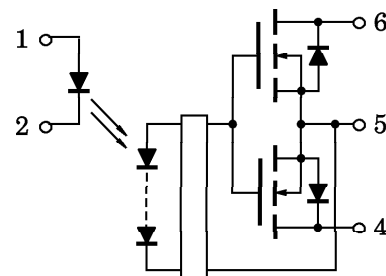


Weight : 0.4g

PIN CONFIGURATION (TOP VIEW)



SCHEMATIC



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(TLP597G)

MAXIMUM RATINGS (Ta = 25°C)

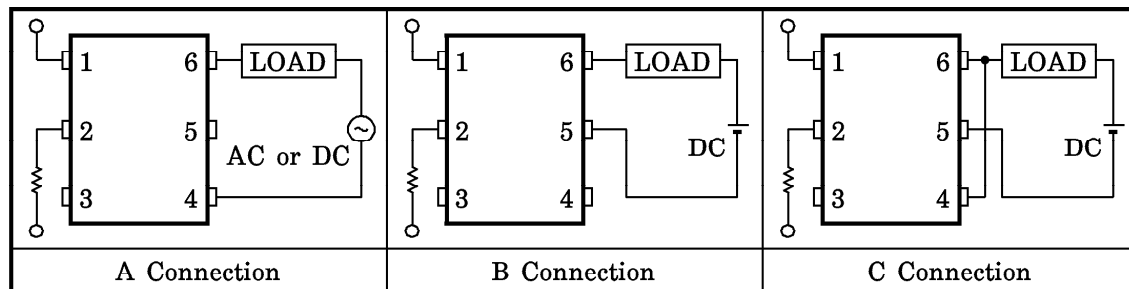
CHARACTERISTIC		SYMBOL	RATING	UNIT	
LED	Forward Current	$I_F$	50	mA	
	Forward Current Derating (Ta ≥ 25°C)	$\Delta I_F / ^\circ C$	-0.5	mA / °C	
	Peak Forward Current (100 μs pulse, 100pps)	$I_{FP}$	1	A	
	Reverse Voltage	$V_R$	5	V	
	Junction Temperature	$T_j$	125	°C	
DETECTOR	Off-State Output Terminal Voltage	$V_{OFF}$	350	V	
	On-State RMS Current	A Connection	120	mA	
		B Connection	120		
		C Connection	160		
	On-State Current Derating (Ta ≥ 25°C)	A Connection	$\Delta I_{ON} / ^\circ C$	-1.2	mA / °C
		B Connection	-1.2		
		C Connection	-1.6		
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, 1min., R.H. ≤ 60%)	Note 1	$BV_S$	2500	$V_{rms}$	

Note 1 : Device considered a two-terminal device : pins 1, 2 and 3 shorted together and pins 4, 5 and 6 shorted together.

RECOMMENDED OPERATING CONDITIONS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage	$V_{DD}$	—	—	280	V
Forward Current	$I_F$	7.5	15	25	mA
On-State Current	$I_{ON}$	—	—	120	mA
Operating Temperature	$T_{opr}$	-20	—	65	°C

CIRCUIT CONNECTIONS



(TLP597G)

INDIVIDUAL ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
LED	Forward Voltage	$V_F$	$I_F = 10\text{mA}$	1.0	1.15	1.3	V
	Reverse Current	$I_R$	$V_R = 5\text{V}$	—	—	10	$\mu\text{A}$
	Capacitance	$C_T$	$V = 0, f = 1\text{MHz}$	—	30	—	pF
DETECTOR	Off-State Current	$I_{OFF}$	$V_{OFF} = 350\text{V}$	—	—	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.	MAX.	UNIT	
Trigger LED Current		$I_{FT}$	$I_{ON} = 120\text{mA}$	—	2	5	mA	
On-State Resistance	A Connection	$R_{ON}$	$I_{ON} = 120\text{mA}, I_F = 10\text{mA}$	—	22	35	$\Omega$	
			$I_{ON} = 20 \sim 120\text{mA}, I_F = 10\text{mA}$	—	26	40	$\Omega$	
			B Connection	$I_{ON} = 120\text{mA}, I_F = 10\text{mA}$	—	13	20	$\Omega$
			C Connection	$I_{ON} = 160\text{mA}, I_F = 10\text{mA}$	—	7	10	$\Omega$

ISOLATION CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Capacitance Input to Output	$C_S$	$V_S = 0, f = 1\text{MHz}$	—	0.8	—	pF
Isolation Resistance	$R_S$	$V_S = 500\text{V}, R.H. \leq 60\%$	$5 \times 10^{10}$	$10^{14}$	—	$\Omega$
Isolation Voltage	$BV_S$	AC, 1 minute	2500	—	—	$V_{rms}$
		AC, 1 second (in oil)	—	5000	—	
		DC, 1 minute (in oil)	—	5000	—	Vdc

SWITCHING CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Turn-on Time	$t_{ON}$	$R_L = 200\Omega$ Note 1	—	—	4	ms
Turn-off Time	$t_{OFF}$	$V_{DD} = 20\text{V}, I_F = 10\text{mA}$	—	—	4	

Note 1 SWITCHING TIME TEST CIRCUIT

