

TENTATIVE

TOSHIBA PHOTOCOUPLER GaAs IRED & PHOTO-TRIAC

TLP3530

TRIAC DRIVER

PROGRAMMABLE CONTROLLERS

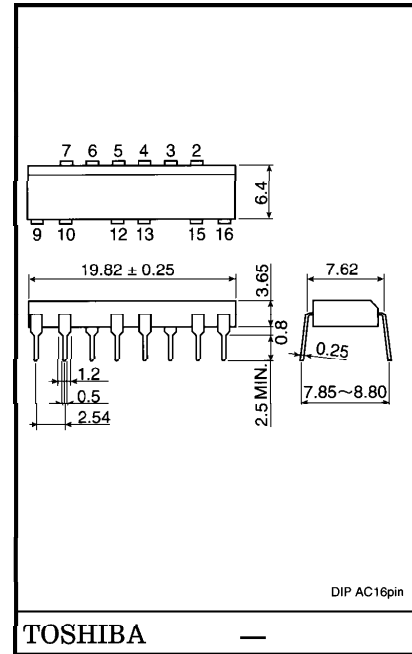
AC-OUTPUT MODULE

SOLID STATE RELAY

The TOSHIBA TLP3530 consists of a photo-triac optically coupled to a gallium arsenide infrared emitting diode in a 16 lead plastic DIP package for 2 channels output.

- Peak Off-State Voltage : 400V (Min.)
- Trigger LED Current : 10mA (Max.)
- On-State Current : 1.0Arms (Max. per 1ch)
1.4Arms (Max. per 2ch)
- Isolation Voltage : 2500Vrms (Min.)

Unit in mm



Weight : 1.09g

Trigger LED Current

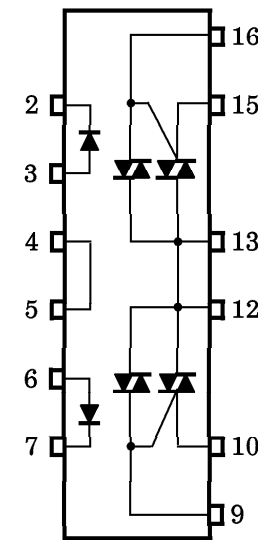
CLASSIFICATION	* TRIGGER LED CURRENT (mA)		MARKING OF CLASSIFICATION
	V _T = 6V, T _a = 25°C		
	MIN.	MAX.	
(IFT7)	—	7.0	T7
Blank	—	10	T7, Blank

* : (IFT7) : TLP3530 (IFT7)

(Note) Application type name for certification test, please use standard product type name, i.e.
TLP3530 (IFT7) : TLP3530

- 3, 6 : ANODE
- 2, 7 : CATHODE
- 4, 5 : N.C
- 12, 13 : TRIAC T2 (COMMON)
- 10, 15 : TRIAC T1
- 9, 16 : TRIAC GATE*

PIN CONFIGURATION (TOP VIEW)



961001EBC2

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- Gallium arsenide (GaAs) is a substance used in the products described in this document. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them. When disposing of the products, follow the appropriate regulations. Do not dispose of the products with other industrial waste or with domestic garbage.
- The products described in this document are subject to foreign exchange and foreign trade control laws.
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MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
LED	Forward Current	I_F	50	mA
	Forward Current Derating (Ta ≥ 53°C)	$\Delta I_F / ^\circ\text{C}$	-0.7	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_{DRM}	400	V
	On-State RMS Current	I_T (RMS)	1.0 (per 1ch)	A
			1.4 (per 2ch)	
			0.7 (per 1ch)	
			1.0 (per 2ch)	
	On-State Current Derating (Ta ≥ 40°C)	$\Delta I_T / ^\circ\text{C}$	-14.3 (per 1ch) -20.0 (per 2ch)	mA / °C
	Peak Current from Snubber Circuit (100μs pulse, 120pps)	I_{SP}	2	A
	Peak Nonrepetitive Surge Current (50Hz, Peak)	I_{TSM}	10	A
Junction Temperature	T_j	110	°C	
Storage Temperature Range	T_{stg}	-40~125	°C	
Operating Temperature Range	T_{opr}	-20~80	°C	
Lead Soldering Temperature (10s)	T_{sol}	260	°C	
Isolation Voltage (AC, 1 min., R.H. ≤ 60%) (Note)	BV_S	2500	Vrms	

(Note) Device considered a two terminal : LED side pins shorted together and DETECTOR side pins shorted together.

RECOMMENDED OPERATING CONDITIONS

CHARACTERISTIC	SYMBOL	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V_{AC}	—	—	120	Vac
Forward Voltage	I_F	15	20	25	mA
Peak Current from Snubber Circuit	I_{SP}	—	—	1	A
Operating Temperature	T_{opr}	-20	—	80	°C

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	μA
	Capacitance	C_T	$V = 0, f = 1\text{MHz}$	—	30	—	pF
DETECTOR	Peak Off-State Current	I_{DRM}	$V_{DRM} = 400\text{V}, T_a = 110^\circ\text{C}$	—	—	100	μA
	Peak On-State Voltage	V_{TM}	$I_{TM} = 1.5\text{A}$	—	—	3.0	V
	Holding Current	I_H	$R_L = 100\Omega$	—	—	25	mA
	Critical Rate of Rise of Off-State Voltage	dv/dt	$V_{in} = 250\text{V}$	200	500	—	$\text{V}/\mu\text{s}$
	Critical Rate of Rise of Commutating Voltage	$dv/dt (c)$	$V_{in} = 120\text{V}_{\text{rms}}, I_T = 1.0\text{A}_{\text{rms}}$	—	5	—	$\text{V}/\mu\text{s}$

COUPLED ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Trigger LED Current	I_{FT}	$V_T = 6\text{V}$	—	—	10	mA
Capacitance (Input to Output)	C_S	$V_S = 0, f = 1\text{MHz}$	—	1.5	—	pF
Isolation Resistance	R_S	$V_S = 500\text{V}, \text{R.H.} \leq 60\%$	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}

