

TOSHIBA PHOTO IC SILICON EPITAXIAL PLANAR

TPS825

PHOTO IC FOR PLASTIC FIBER / POLYMER CLAD FIBER

Unit in mm

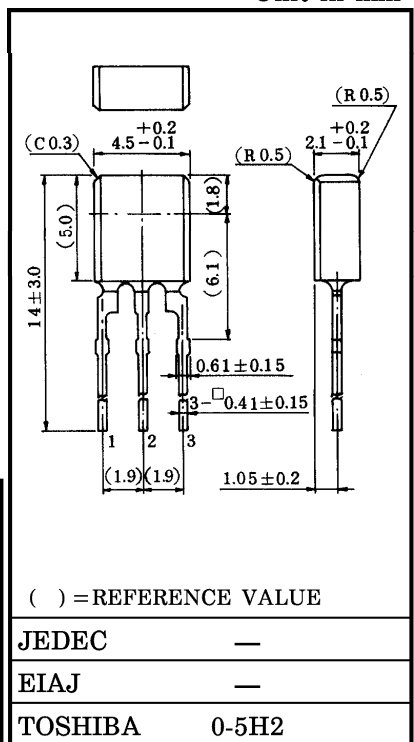
TPS825 contains a light receiving IC integrating photo diode, amplifier circuit, waveform shaping circuit, etc. in 1 chip.

Output is directly connectable to IC as it changes digitally. When light is received, output becomes high level.

- Compatible with TTL, LSTTL and CMOS.
- Wide operating supply voltage ($V_{CC}=4.5$ to $17V$)

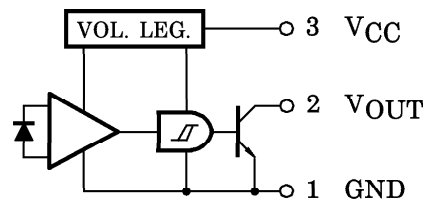
MAXIMUM RATINGS ($T_a = 25^\circ C$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	17	V
Low Level Output Current	I_{OL}	50	mA
Allowable Power Dissipation	P_O	250	mW
Operating Temperature Range	T_{opr}	$-25 \sim 85$	$^\circ C$
Storage Temperature Range	T_{stg}	$-40 \sim 100$	$^\circ C$
Soldering Temperature · Time	T_{sol}	$260^\circ C \cdot 3s$	



Weight : 0.12g (TYP.)

PIN CONNECTION



961001EAA2

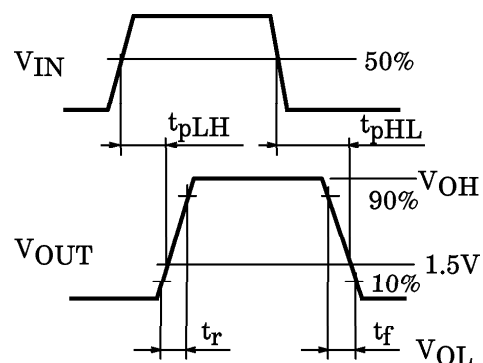
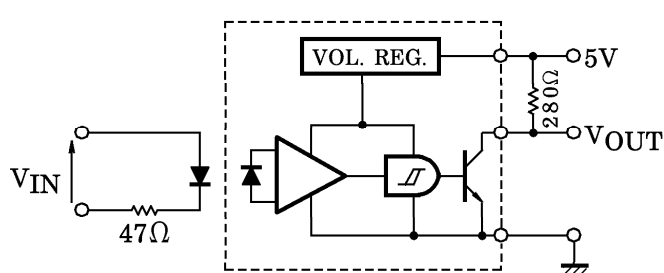
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OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC			SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Supply Voltage			V _{CC}	Ta=25°C	4.5	—	17	V
Output Current	Low Level	V _{OL}	I _{OL} =16mA, V _{CC} =5V		—	0.1	0.4	V
	High Level	V _{OH}	V _{CC} =5V, P _f =50μW		4.0	—	—	
Supply Current	Low Level	I _{CCL}	V _{CC} =5V		—	2.5	5.0	mA
	High Level	I _{CCH}	V _{CC} =5V, P _f =50μW		—	1.2	3.0	
H→L Threshold Light Input(Note)			P _{fLH}	V _{CC} =5V, Ta=25°C, λ _p =660nm	—	5.0	10.0	μW
					—	−23	−20	dBm
Switching Time	Propagation Time	L→H	t _{pLH}	Ta=25°C, V _{CC} =5V, R _L =280Ω, P _f =0↔50W	—	2.0	—	μs
		H→L	t _{pHL}		—	6.0	—	
	Rise Time		t _r		—	0.1	—	
	Fall Time		t _f		—	0.05	—	

(Note) Equivalent to the optical output at the end of a plastic fiber in the core diameter 1mm.

SWITCHING TIME TEST CIRCUIT



PRECAUTION

Please be careful of the followings.

- Lead forming shall be performed before soldering.
(Soldering portion of lead : above 1.5mm from the body of the device)
- During 100μs after turning on V_{CC}, output voltage changes for stabilizing the inner circuit.
- Pin surge voltage (Note) : MAX 150V
(Note) Surge voltage chargeable between optional 2 pins at storage charge below 200pF.

