

TOSHIBA PHOTO IC SI MONOLYTHIC PHOTO IC

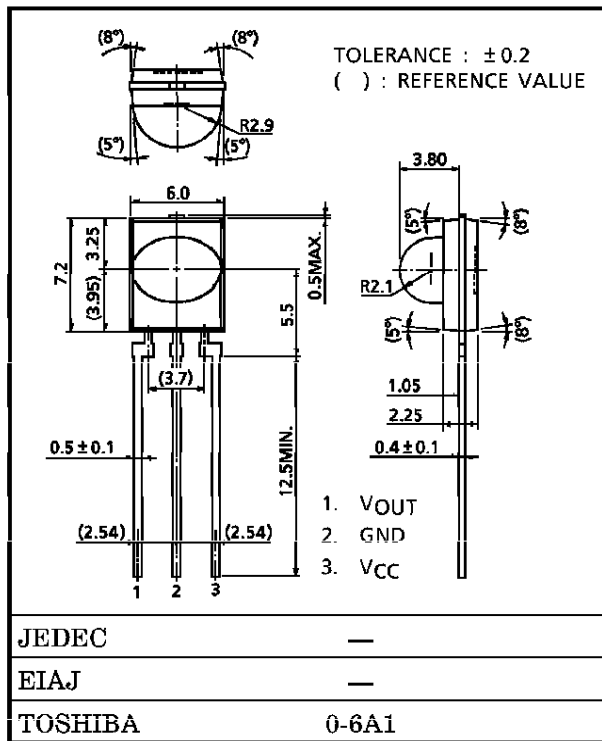
TPS832

OPTICAL REMOTE CONTROL

Unit : mm

IR DATA COMMUNICATION

- The TPS832 is a photo IC which includes a photodiode, I-V converter, band-pass filter and AGC amplifier on a single chip.
- The device's pull-up resistance is as follows
: $R_L = 50k\Omega$
- The device's carrier frequency is as follows
: $f_o = 38kHz$
- The device's supply voltage is as follows
: $V_{CC} = 5V$
- The TLN105B and TLN115A are available as infrared LEDs for remote controllers.



Weight : 0.3g (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V_{CC}	7	V
Operating Temperature Range	T_{opr}	-20~60	°C
Storage Temperature Range	T_{stg}	-30~100	°C
Soldering Temperature Range (5s)	T_{sol}	260	°C

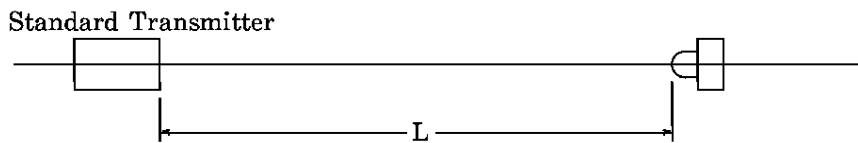
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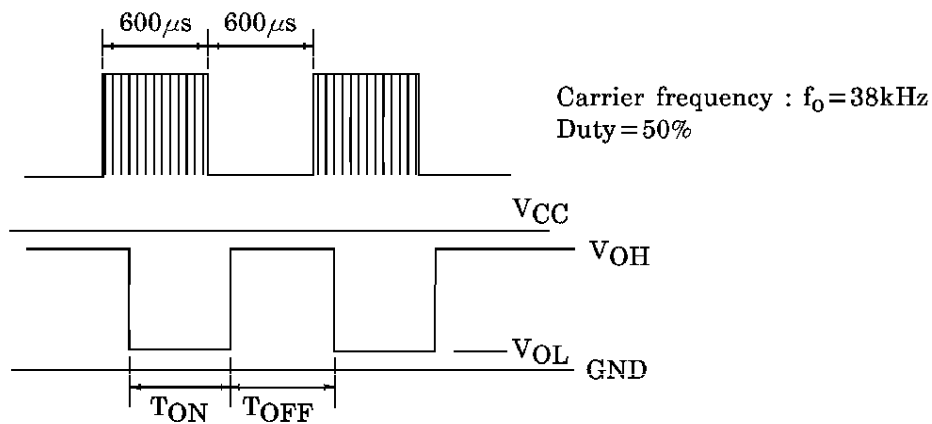
OPTO-ELECTRICAL CHARACTERISTICS ($V_{CC} = 5V, T_a = 25^\circ C$)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V_{CC}	—	4.5	5	5.5	V
Supply Current	I_{CC}	$E=0$	—	1.2	3.0	mA
Electromagnetic Sensitivity	E_S	(Note 3)	—	250	—	V_{p-p}/m
Transmission Range	L (Note 1)	The burst wave shown in (Note 2) is transmitted by a standard transmitter.	8	12	—	m
High-Level Output Voltage	V_{OH}		4.5	—	—	V
Low-Level Output Voltage	V_{OL}		—	—	0.4	V
ON Pulse Width	T_{ON}	External light intensity $< 300 \text{ lx}$	400	600	800	μs
OFF Pulse Width	T_{OFF}		400	600	800	μs
Carrier Frequency	f_0	—	35	38	42	kHz
Radiation Angle	θ_H	Horizontal angle, L/2 (Note 4)	± 55	± 63	—	$^\circ$
	θ_V	Vertical angle, L/2 (Note 4)	± 25	± 30	—	$^\circ$

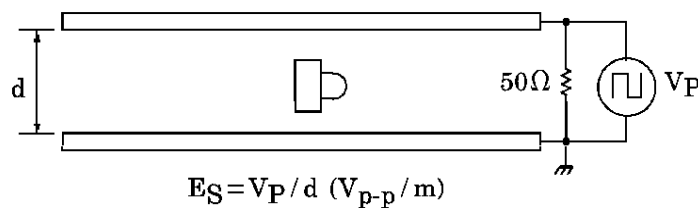
(Note 1) Transmission Distance L



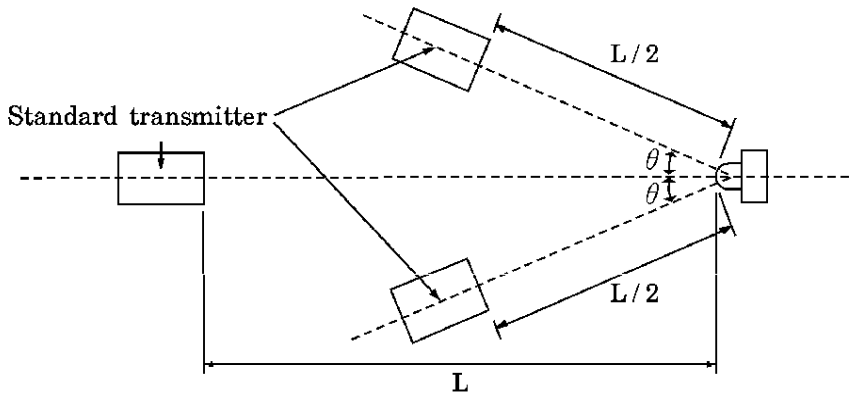
(Note 2) Burst Wave



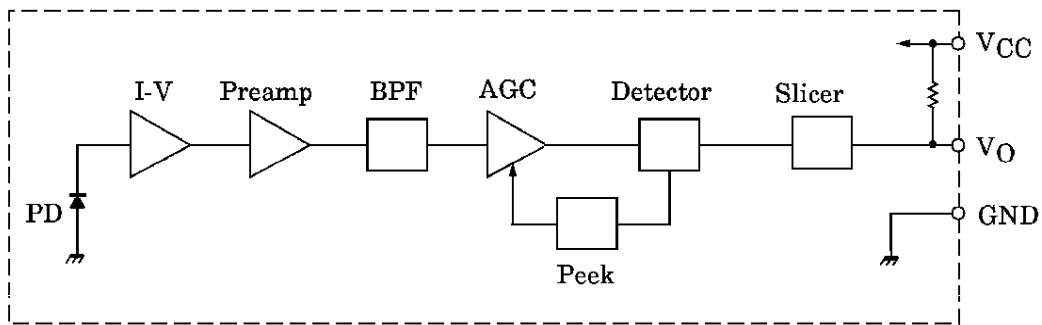
(Note 3) Electromagnetic Sensitivity



(Note 4) Radiation Angle

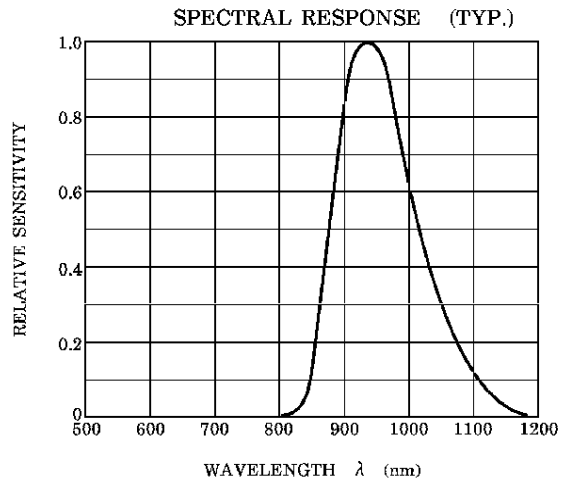
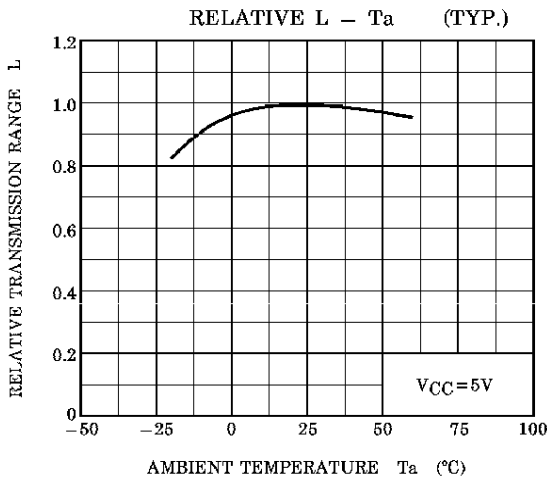


Circuit Block Diagram

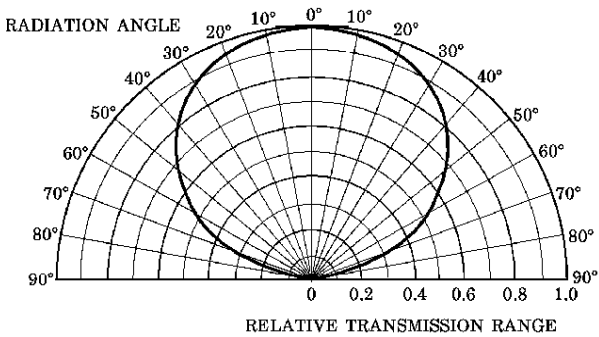


PRECAUTIONS

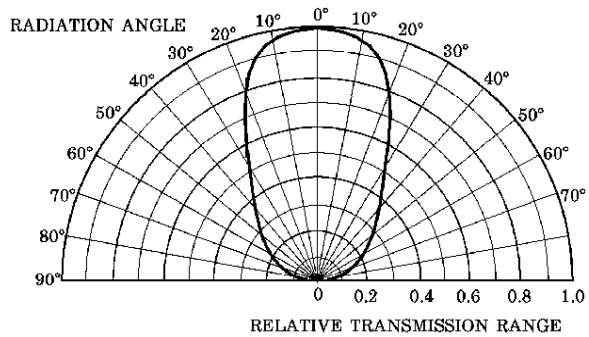
1. If a lead is formed, it should be formed at a distance of 2mm from the body of the device. Forming the lead should not cause stress to the body of the device. Soldering must be performed after lead forming.
2. Insert a bypass condenser of up to $0.01\mu\text{F}$ between V_{CC} and GND near the device to stabilize the power supply line.
3. Within $100\mu\text{s}$ of V_{CC} turning on, the output voltage changes to stabilize the inner circuit.



DIRECTIONAL SENSITIVITY CHARACTERISTICS (TYP.) (Ta = 25°C) HORIZONTAL



DIRECTIONAL SENSITIVITY CHARACTERISTICS (TYP.) (Ta = 25°C) VERTICAL



CARRIER FREQUENCY CHARACTERISTICS (TYP.)

