TOSHIBA TPS614

TOSHIBA PHOTO TRANSISTOR SILICON NPN EPITAXIAL PLANAR

TPS614

FOR PHOTO SENSOR

PHOTOELECTRIC COUNTER **VARIOUS KINDS OF READERS** POSITION DETECTION

TO-18 metal package

High sensitivity : $I_L = 1.5 \text{mA}$ (TYP.)

Wide half value angle facilitates mechanical design.

:
$$\theta = \pm 42^{\circ}$$
 (TYP.)

- Countermeasure against disturbance light, improvement of response speed and enable operation can be taken by use of the base pin. Avoid the use of TPS614 with the base pin kept open.
- TLN108, TLN201, etc. are available as the recommended infrared LEDs.

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Emitter Voltage	v_{CEO}	40	V
Emitter-Collector Voltage	v_{ECO}	5	V
Collector Current	$I_{\mathbf{C}}$	50	mA
Collector Power Dissipation	$P_{\mathbf{C}}$	150	mW
Collector Power Dissipation Derating (Ta>25°C)	△P _C /°C	-1.2	mW/°C
Operating Temperature Range	$T_{ m opr}$	-40~125	°C
Storage Temperature Range	$\mathrm{T}_{\mathrm{stg}}$	-55~150	°C

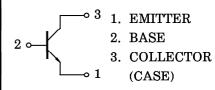
Unit in mm Ø 5.8MAX $3 - \emptyset 0.45 \pm 0.1$): REFERENCE VALUE **JEDEC**

Weight: 0.27g (TYP.)

PIN CONNECTION

EIAJ

TOSHIBA



0-5D1

961001EAA2

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OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTE	CRISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Dark Current		I _D (I _{CEO})	$V_{CE} = 30V, E = 0$		0.01	0.2	μ A
Light Current		$I_{ m L}$	$V_{\text{CE}} = 3V$, $E = 10 \text{mW} / \text{cm}^2$ (Note)	0.6	1.5	_	mA
Collector-Emitter Voltage	r Saturation	V _{CE} (sat)	$I_{C} = 0.3 \text{mA}, E = 10 \text{mW} / \text{cm}^{2}$ (Note)	_	0.25	0.4	V
Switching Time	Rise Time	t _r	$V_{CC}=5V$, $I_{C}=10mA$	_	2	_	
	Fall Time	t_f	$R_L = 100\Omega$ (Fig. 1)	_	2	_	μ s
Peak Sensitivity	Wavelength	$\lambda_{\mathbf{P}}$		_	800	_	nm
Half Value Ang	le	$\theta \frac{1}{2}$		_	±42	_	0

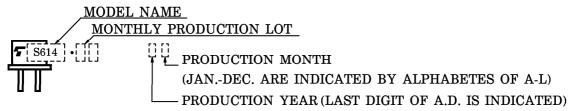
Note: Color temperature=2870°K, Standard Tungsten Lamp.

PRECAUTION

Please be careful of the followings.

- 1. Soldering temperature: 260°C MAX. Soldering time: 5s MAX. (Soldering portion of lead: above 1.5mm from the body of the device)
- 2. If the lead is formed, the lead should be formed at a distance of 2mm from the body of the device. Soldering shall be performed after lead forming.

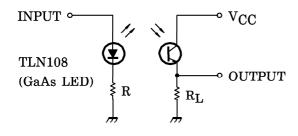
PRODUCT INDICATION

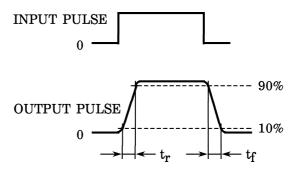


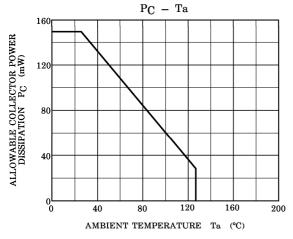
STAMP COLOR: RED

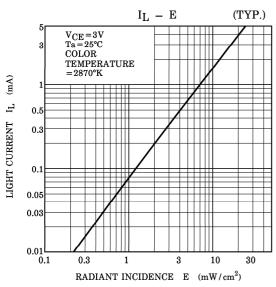
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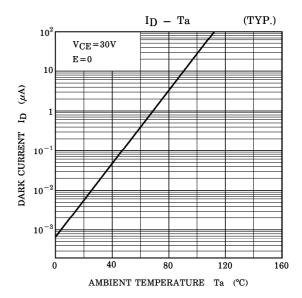
Fig. 1 SWITCHING TIME TEST CIRCUIT

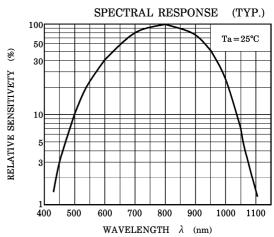












DIRECTIONAL SENSITIVITY CHARACTERISTIC (TYP.)

 $(Ta = 25^{\circ}C)$

