

TOSHIBA INFRARED LED GaAs INFRARED EMITTER

**TLN103A**

INFRARED LED FOR PHOTO SENSOR

Unit in mm

OPTO-ELECTRONIC SWITCH

SELECTOR

TAPE, CARD READERS

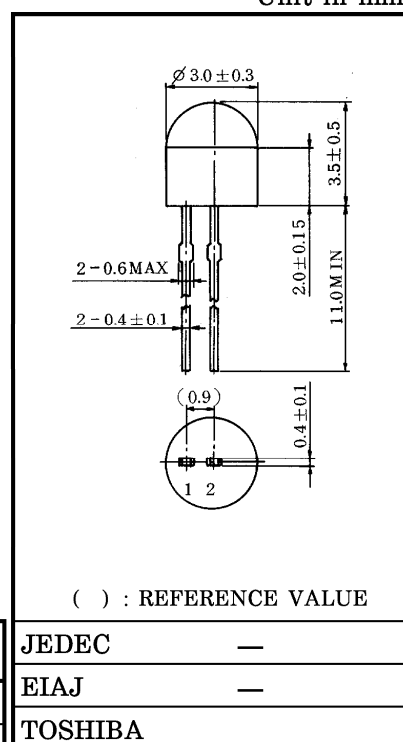
INFRARED RAYS APPLIED EQUIPMENT

- Wide half value angle :  $\theta_{\frac{1}{2}} = \pm 80^\circ$  (TYP.)
- Excellent linearity of radiant power and modulation by pulse operation and high frequency is possible.
- The same external shape as Photo Transistors TPS603A.
- Maximum distance when used as a photo sensor :
 

At DC drive $\approx 5\text{mm}$	}	When TPS603A IL $\approx 100\mu\text{A}$
At pulse drive $\approx 30\text{mm}$		

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Forward Current	$I_F$	60	mA
Pulse Forward Current (Note)	$I_{FP}$	1	A
Reverse Voltage	$V_R$	5	V
Forward Current Derating ( $T_a > 25^\circ\text{C}$ )	$\Delta I_F / ^\circ\text{C}$	-0.8	mA / $^\circ\text{C}$
Operating Temperature Range	$T_{opr}$	$-20 \sim 75$	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	$-30 \sim 100$	$^\circ\text{C}$

(Note) Pulse Width  $\leq 100\mu\text{s}$ , Repetitive Frequency = 100Hz

( ) : REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	

Weight : 0.08g (TYP.)

PIN CONNECTION



1. ANODE
2. CATHODE

OPTO-ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Forward Voltage	$V_F$	$I_F = 10\text{mA}$	1.00	1.15	1.30	V
Reverse Current	$I_R$	$V_R = 5\text{V}$	—	—	10	$\mu\text{A}$
Radiant Intensity	$I_E$	$I_F = 20\text{mA}$	0.5	1.0	—	mW / sr
Radiant Power	$P_o$	$I_F = 20\text{mA}$	—	2.5	—	mW
Half Value Angle	$\theta_{\frac{1}{2}}$	$I_F = 20\text{mA}$	—	$\pm 80$	—	$^\circ$
Capacitance	$C_T$	$V_R = 0, f = 1\text{MHz}$	—	30	—	pF
Peak Emission Wavelength	$\lambda_P$	$I_F = 20\text{mA}$	—	940	—	nm
Spectral Line Half Width	$\Delta\lambda$	$I_F = 20\text{mA}$	—	50	—	nm

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**PRECAUTION**

Please be careful of the followings.

1. Soldering temperature : 260°C MAX.  
Soldering time : 3s MAX.  
(Soldering portion of lead : above 2mm 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.

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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.
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