

TOSHIBA INFRARED LED GaAs INFRARED EMITTER

**TLN107A**

INFRARED LED FOR PHOTO INTERRUPTER

Unit in mm

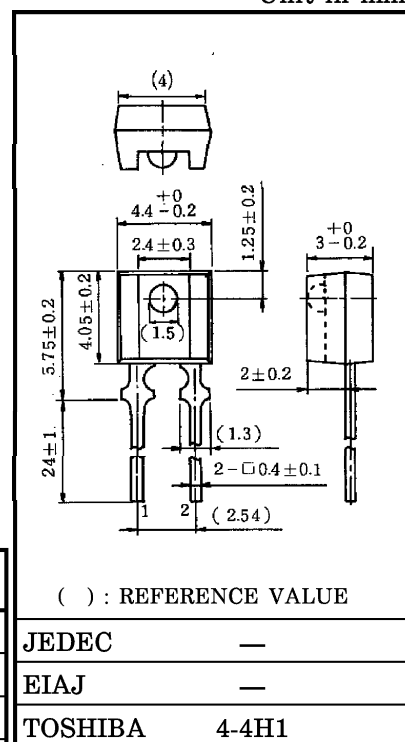
OPTO-ELECTRONIC SWITCH

INFRARED RAYS APPLIED EQUIPMENT

- High radiant intensity
- Excellent linearity of radiant intensity and modulation by pulse operation and high frequency is possible.
- The same external shape as Photo Transistors TPS607A and TPS608A and is best suited for combination with them as a photo interrupter.

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Forward Current	$I_F$	50	mA
Pulse Forward Current	$I_{FP}$ (Note)	600	mA
Reverse Voltage	$V_R$	5	V
Forward Current Derating (Ta > 25°C)	$\Delta I_F / ^\circ C$	-0.33	mA / °C
Operating Temperature Range	$T_{opr}$	-25~85	°C
Storage Temperature Range	$T_{stg}$	-40~100	°C

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

Weight : 0.16g (TYP.)

PIN CONNECTION



1. CATHODE

2. ANODE

OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT	
Forward Voltage	$V_F$	$I_F = 10mA$	1.0	1.15	1.3	V	
Reverse Current	$I_R$	$V_R = 5V$	—	—	10	$\mu A$	
Radiant Intensity	$I_E$	$I_F = 20mA$	TLN107A	0.8	—	—	mW / sr
			TLN107A-A	0.8	—	3.0	
			TLN107A-B	2.0	—	7.5	
Radiant Power	$P_o$	$I_F = 20mA$	—	2.5	—	mW	
Half Value Angle	$\theta_{\frac{1}{2}}$	$I_F = 20mA$	—	$\pm 15$	—	°	
Capacitance	$C_T$	$V_R = 0, f = 1MHz$	—	30	—	pF	
Peak Emission Wavelength	$\lambda_P$	$I_F = 20mA$	—	940	—	nm	
Spectral Line Half Width	$\Delta\lambda$	$I_F = 20mA$	—	50	—	nm	

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● TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

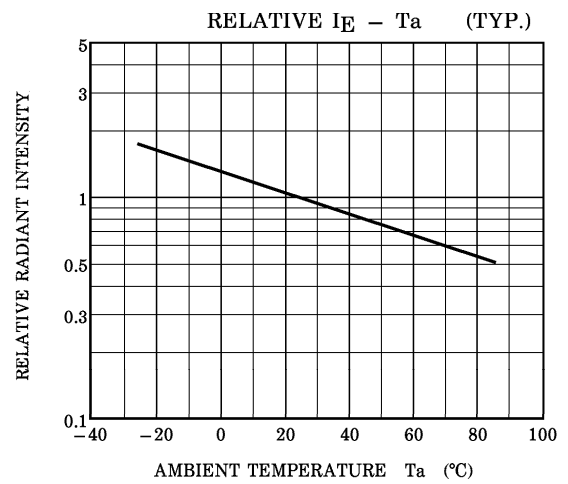
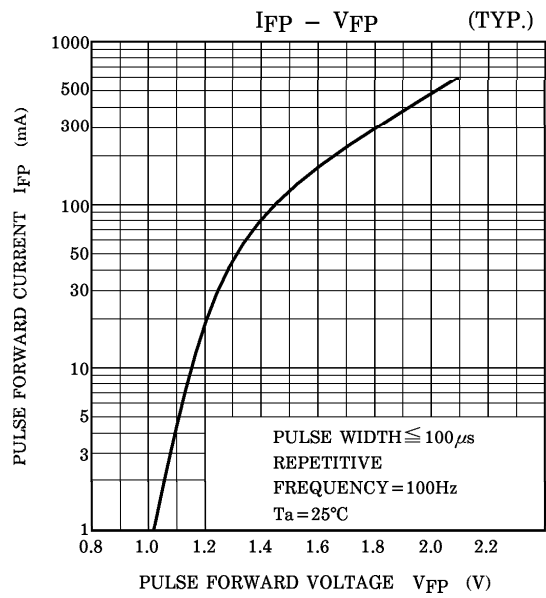
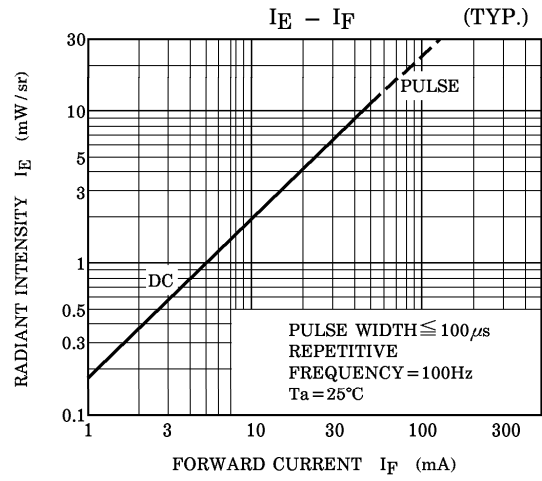
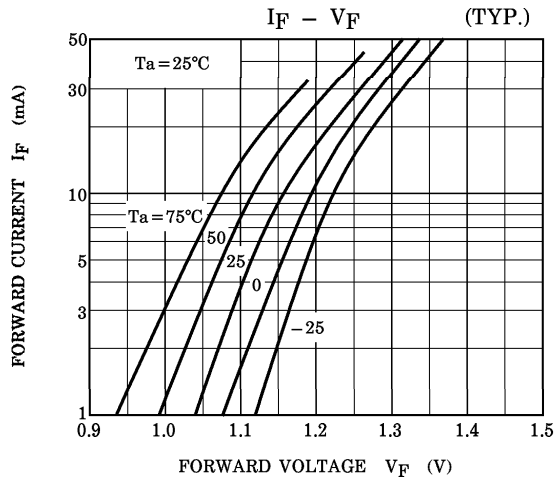
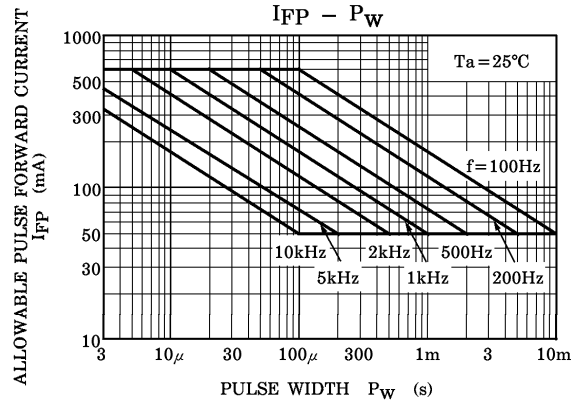
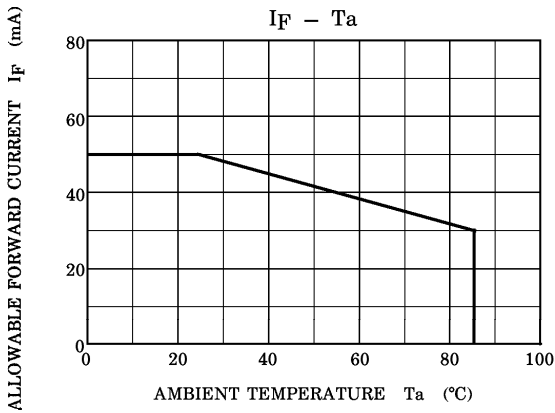
## PRECAUTION

Please be careful of the followings.

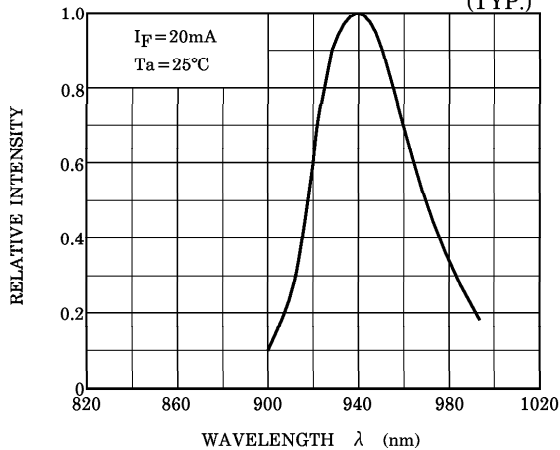
1. Soldering temperature : 260°C MAX.  
Soldering time : 5s MAX.  
(Soldering portion of lead : above 2mm from the body of the device)
2. If the lead is formed, the lead should be formed at a distance of 2mm from the body of the device.

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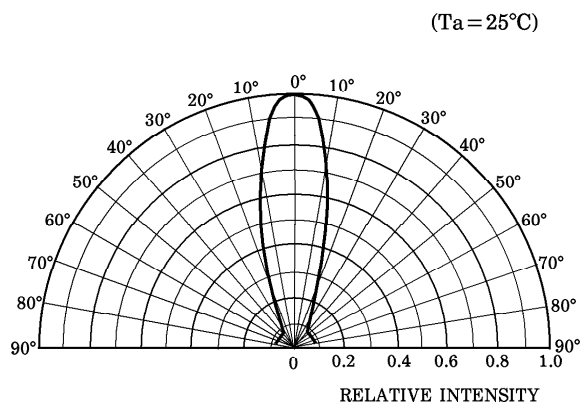
- Gallium arsenide (GaAs) is a substance used in the products described in this document. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them. When disposing of the products, follow the appropriate regulations. Do not dispose of the products with other industrial waste or with domestic garbage.
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**WAVELENGTH CHARACTERISTIC (TYP.)**



**RADIATION PATTERN (TYP.)**



**COUPLING CHARACTERISTICS WITH TPS608A**

