

TOSHIBA INFRARED LED GaAs INFRARED EMITTER

# TLN119

PRINTERS, FAX MACHINES  
 FLOPPY DISK DRIVE  
 HOME ELECTRIC EQUIPMENT  
 OPTO-ELECTRONIC SWITCHES

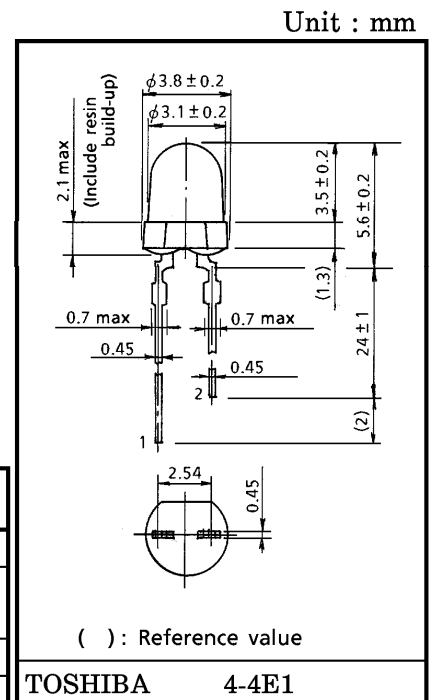
- $\phi 3.1$  mm plastic package
- Radiant intensity :  $I_E = 5$  mW / sr (typ.)
- Half-angle value :  $\theta_{\frac{1}{2}} = \pm 30^\circ$  (typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Forward Current	$I_F$	60	mA
Forward Current Derating (Ta > 25°C)	$\Delta I_F / ^\circ C$	-0.8	mA / °C
Pulse Forward Current (Note 1)	$I_{FP}$	600	mA
Reverse Voltage	$V_R$	5	V
Operating Temperature Range	$T_{opr}$	-25~85	°C
Storage Temperature Range	$T_{stg}$	-30~100	°C
Soldering Temperature (3 s)	$T_{sol}$ (Note 2)	260	°C

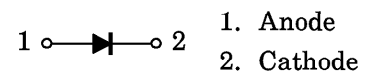
(Note 1) : Pulse width  $\leq 100 \mu s$ , repetitive frequency = 100 Hz

(Note 2) : Soldering must be performed 2 mm from the bottom of the package body.



Weight : 0.12 g (typ.)

**PIN CONNECTION**



OPTICAL AND ELECTRICAL CHARACTERISTICS (Ta = 25°C)

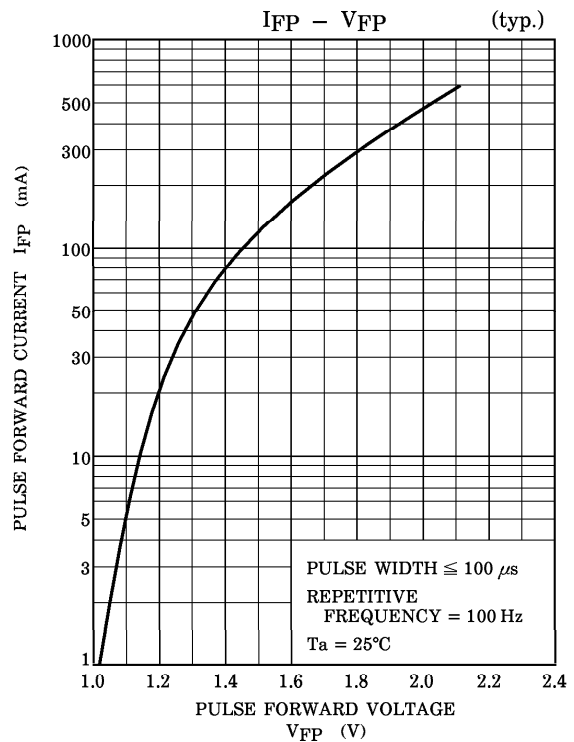
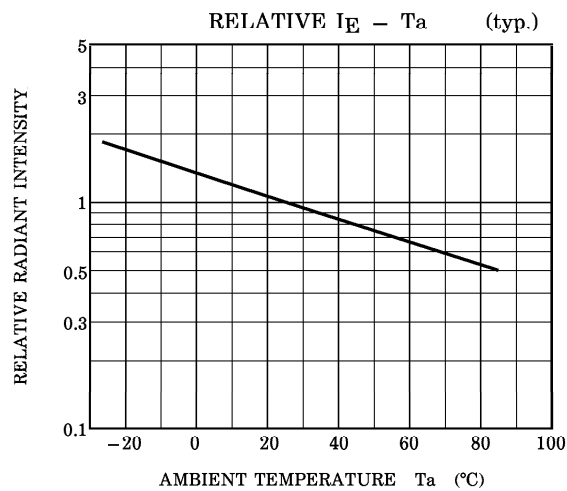
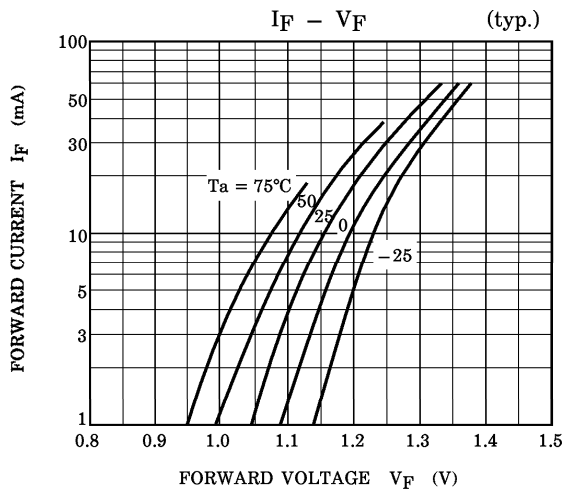
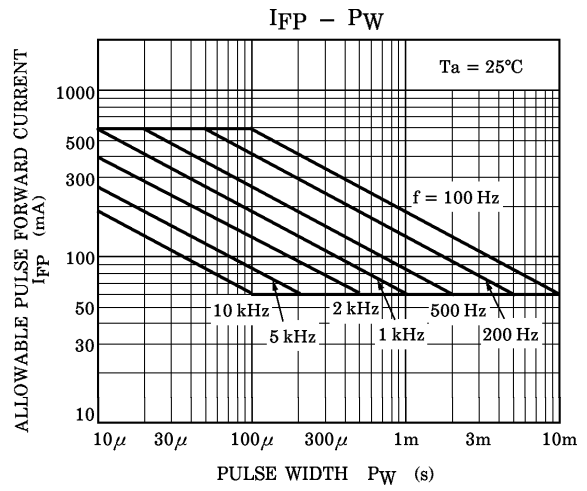
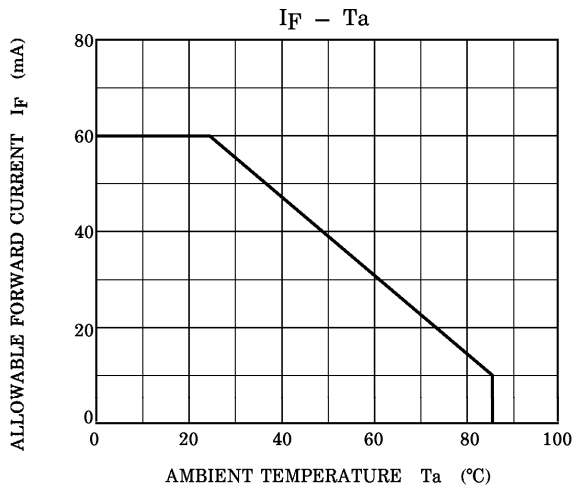
CHARACTERISTIC	SYMBOL	TEST CONDITION	Min	Typ.	Max	UNIT	
Forward Voltage	$V_R$	$I_F = 10$ mA	1.00	1.15	1.30	V	
Reverse Current	$I_R$	$V_R = 5$ V	—	—	10	$\mu A$	
Radiant Intensity	$I_E$	$I_F = 20$ mA	TLN119	2.5	5.0	10.0	mW / sr
			TLN119 (A)	2.5	—	6.0	
			TLN119 (B)	4.2	—	10.0	
Radiant Power	$P_O$	$I_F = 20$ mA	—	4.5	—	mW	
Peak Emission Wavelength	$\lambda_P$	$I_F = 20$ mA	—	945	—	nm	
Spectral Line Half Width	$\Delta \lambda$	$I_F = 20$ mA	—	50	—	nm	
Half Value Angle	$\theta_{\frac{1}{2}}$	$I_F = 20$ mA	—	$\pm 30$	—	°	

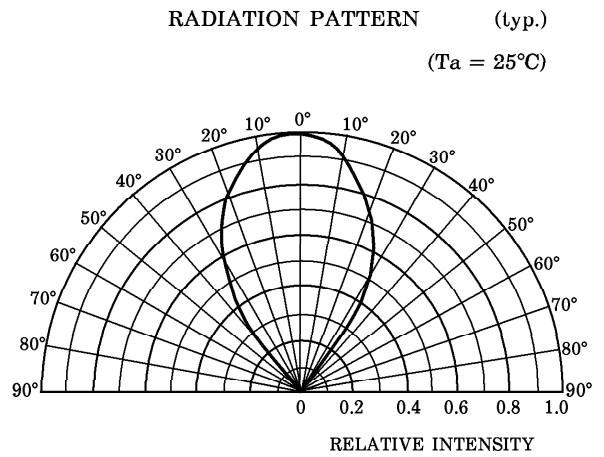
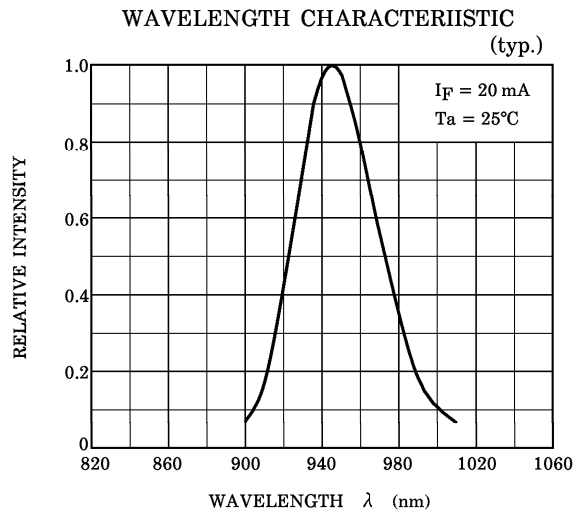
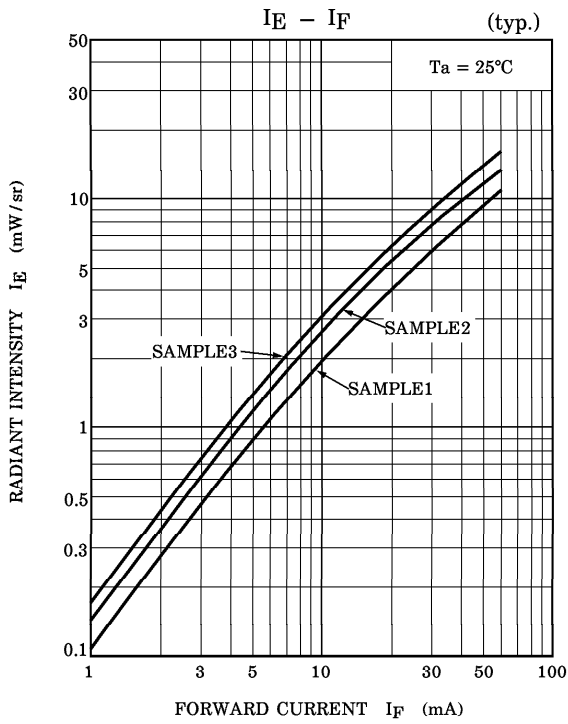
**PRECAUTIONS**

Please be careful of the followings.

1. When forming the leads, bend each lead under the 2 mm from the body of the device. Soldering must be performed after the leads have been formed.
2. Radiant intensity falls over time due to the current which flows in the infrared LED. When designing a circuit, take into account this change in radiant power over time. The ratio of fluctuation in radiation intensity to fluctuation in optical output is 1 : 1.

$$\frac{I_E(t)}{I_E(0)} = \frac{P_O(t)}{P_O(0)}$$





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