

TOSHIBA INFRARED LED GaAs INFRARED EMITTER

TLN104, TLN104(LB)

INFRARED LEDS FOR PHOTODIODES

Unit : mm

TAPE AND CARD READERS

HANDHELD TERMINALS

AUDIO AND VIDEO EQUIPMENT

OPTO-ELECTRONIC SWITCHES

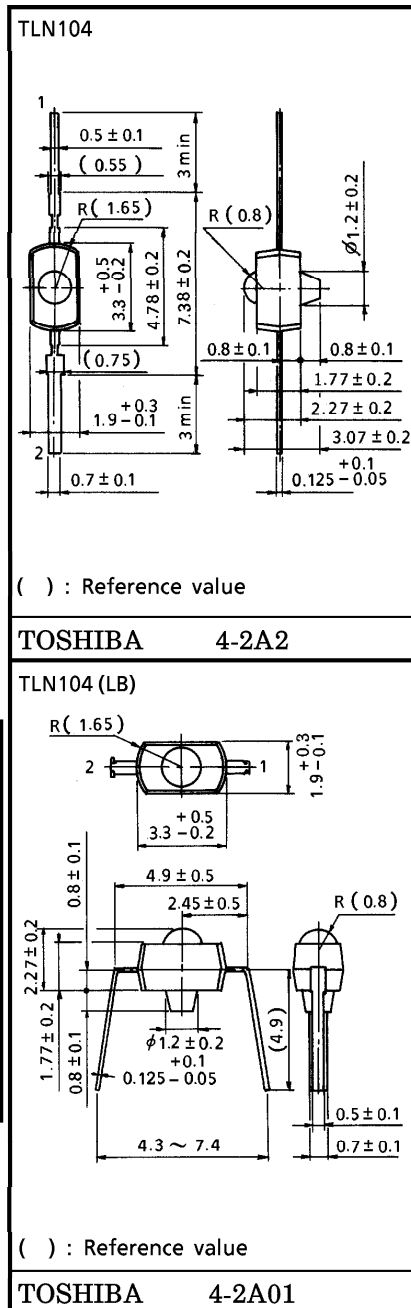
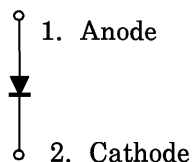
- Micro-package (epoxy-resin package)
Double-ended type : TLN104
DIP type : TLN104 (LB)
- Can be mounted with 2.5 mm pitch.
- High radiant power : $P_o = 3 \text{ mW}$ (typ.)
- Excellent radiant-intensity linearity. Modulation by pulse operation and high frequency is possible.
- Half-angle value : $\theta_{\frac{1}{2}} = \pm 20^\circ$ (typ.)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Forward Current	I_F	40	mA
Forward Current Derating ($T_a > 25^\circ\text{C}$)	$\Delta I_F / ^\circ\text{C}$	-0.53	mA / $^\circ\text{C}$
Pulse Forward Current	I_{FP} (Note 1)	400	mA
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-25~85	$^\circ\text{C}$
Storage Temperature	T_{stg}	-30~100	$^\circ\text{C}$
Soldering Temperature (3 s)	T_{sol}	260	$^\circ\text{C}$

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

PIN CONNECTION



Weight : 0.02 g (typ.)

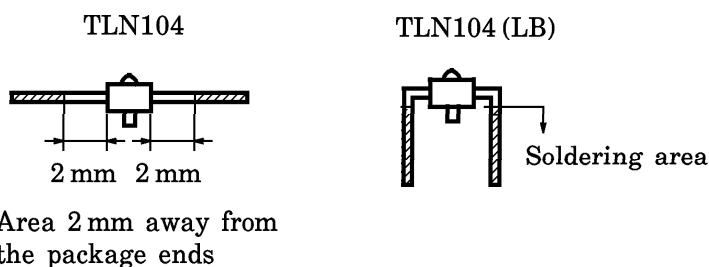
OPTICAL AND ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	Min	Typ.	Max	UNIT
Forward Voltage	V_F	$I_F = 10 \text{ mA}$	—	1.13	1.35	V
Reverse Current	I_R	$V_R = 5 \text{ V}$	—	—	10	μA
Radiant Power	P_O	$I_F = 20 \text{ mA}$	TLN104	1.5	3	mW
			TLN104 (B)	2.5	—	
			TLN104 (LB)	1.5	3	
			TLN104 (B, LB)	2.5	—	
Capacitance	C_T	$V_R = 0, f = 1 \text{ MHz}$	—	50	—	pF
Peak Emission Wavelength	λ_P	$I_F = 20 \text{ mA}$	—	940	—	nm
Spectral Line Half Width	$\Delta\lambda$	$I_F = 20 \text{ mA}$	—	50	—	nm
Half Value Angle	$\theta_{\frac{1}{2}}$	$I_F = 20 \text{ mA}$	—	± 20	—	°

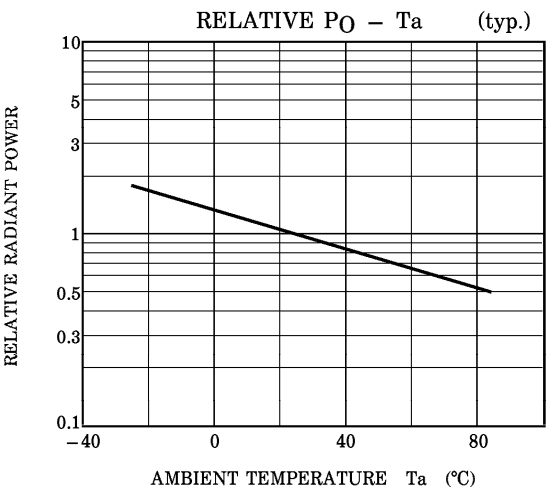
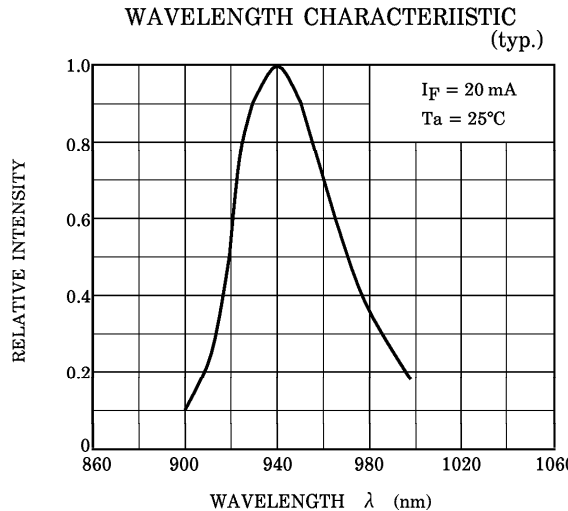
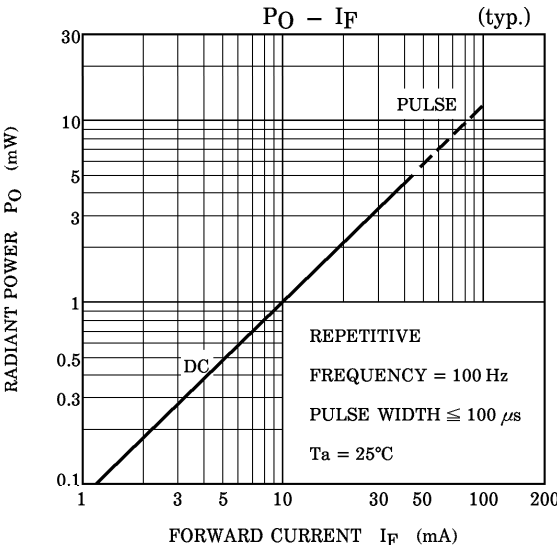
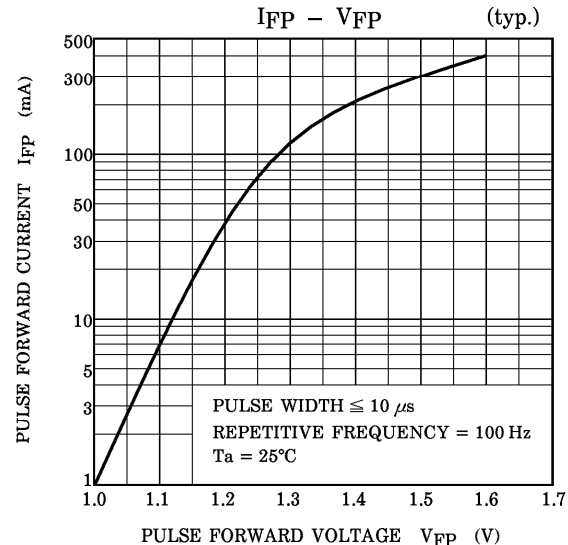
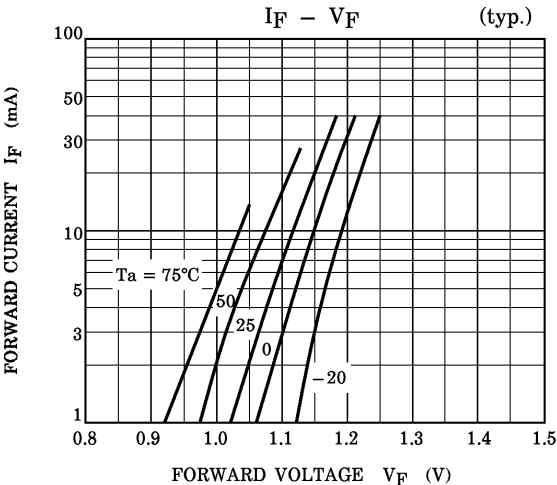
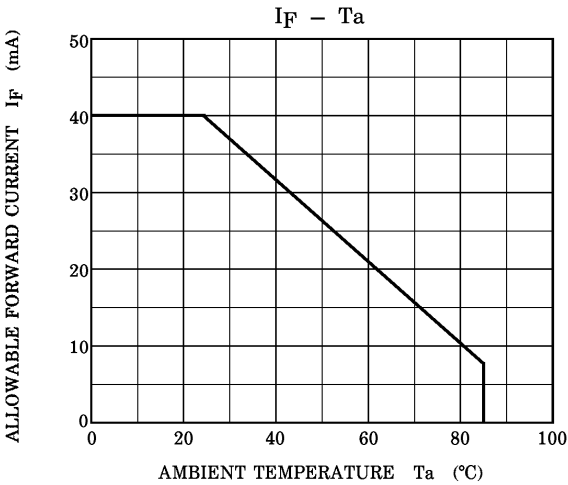
PRECAUTIONS

Please be careful of the followings.

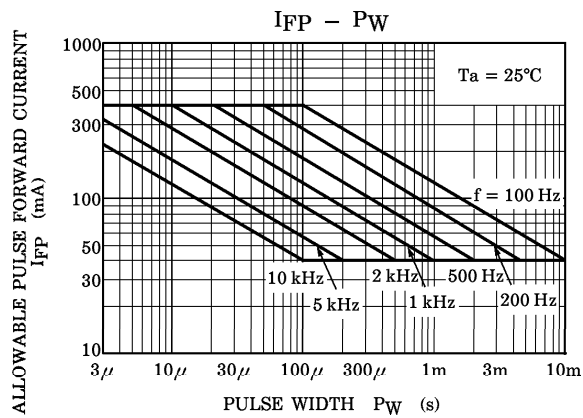
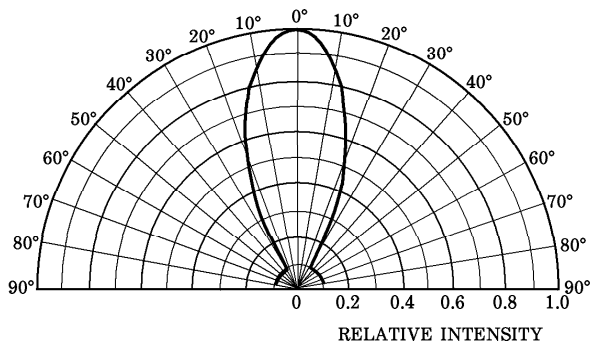
- When forming the leads, bend each lead under the 0.8 mm from the body of the device.
Soldering must be performed after the leads have been formed. However, in case of TLN104 (LB), no lead forming shall be performed.
- Soldering shall be performed within the range shown below.



- Radiant power 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.



RADIATION PATTERN (typ.)
(Ta = 25°C)



RESTRICTIONS ON PRODUCT USE

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