TOSHIBA INFRARED LED GaAs INFRARED EMITTER

TLN104, TLN104(LB)

INFRARED LEDS FOR PHOTOSENSORS

Unit : mm

TAPE AND CARD READERS

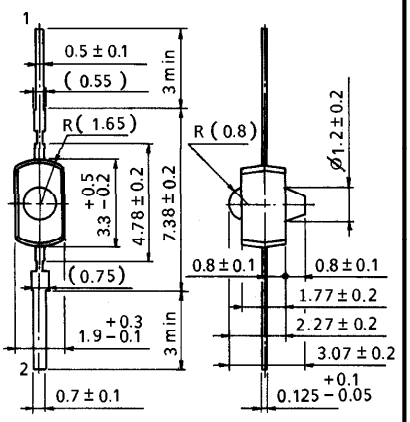
HANDHELD TERMINALS

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 : Po = 3 mW (typ.)
- Excellent radiant-intensity linearity. Modulation by pulse operation and high frequency is possible.
- Half-angle value : $\theta\frac{1}{2} = \pm 20°$ (typ.)

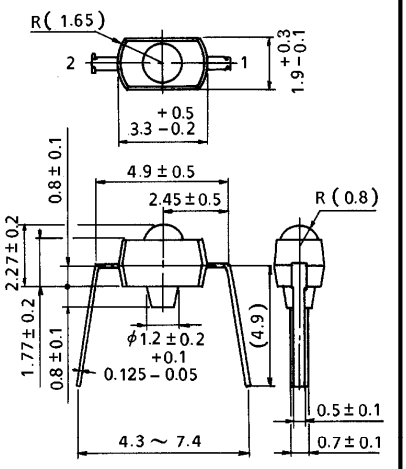
TLN104



( ) : Reference value

TOSHIBA 4-2A2

TLN104 (LB)



( ) : Reference value

TOSHIBA 4-2A01

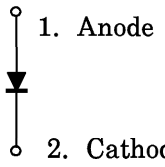
Weight : 0.02 g (typ.)

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Forward Current	I_F	40	mA
Forward Current Derating (Ta > 25°C)	ΔI_F / °C	−0.53	mA / °C
Pulse Forward Current	I_{FP} (Note 1)	400	mA
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	−25~85	°C
Storage Temperature	T_{stg}	−30~100	°C
Soldering Temperature (3 s)	T_{sol}	260	°C

(Note 1) : Pulse width ≦ 100 μs, repetitive frequency = 100 Hz

PIN CONNECTION



OPTICAL AND ELECTRICAL CHARACTERISTICS (Ta = 25°C)

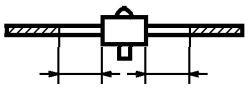
CHARACTERISTIC	SYMBOL	TEST CONDITION		Min	Typ.	Max	UNIT
Forward Voltage	V_F	I_F = 10 mA		—	1.13	1.35	V
Reverse Current	I_R	V_R = 5 V		—	—	10	μA
Rediant Power	P_O	I_F = 20 mA	TLN104	1.5	3	—	mW
			TLN104 (B)	2.5	—	6.0	
			TLN104 (LB)	1.5	3	—	
			TLN104 (B, LB)	2.5	—	6.0	
Capacitance	C_T	V_R = 0, f = 1 MHz		—	50	—	pF
Peak Emission Wavelength	λ_P	I_F = 20 mA		—	940	—	nm
Spectral Line Half Width	$\Delta\lambda$	I_F = 20 mA		—	50	—	nm
Half Value Angle	$\theta\frac{1}{2}$	I_F = 20 mA		—	±20	—	°

PRECAUTIONS

Please be careful of the followings.

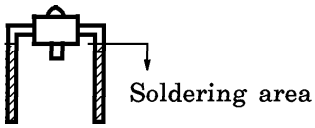
1. When forming the leads, bend each lead under the 0.8 mm from the body of the device. Soldering must be performed after the leads have been formed. However, in case of TLN104 (LB), no lead forming shall be performed.
2. Soldering shall be performed within the range shown below.

TLN104



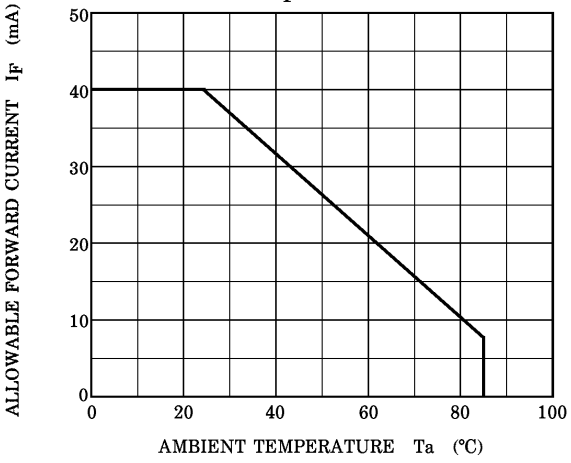
Area 2 mm away from the package ends

TLN104 (LB)

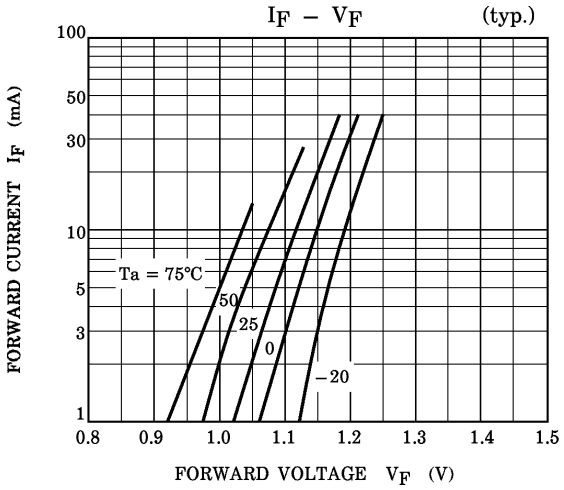


3. Radiant power falls over time due to the current which flows in the infrared LED. When designing a circuit, take into account this change in radiant power over time.

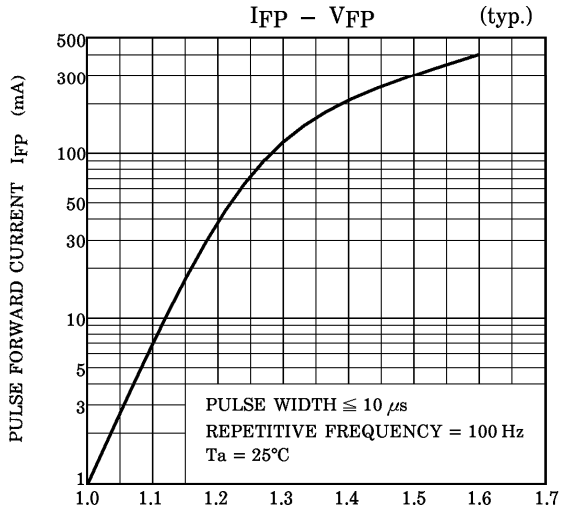
I_F – Ta



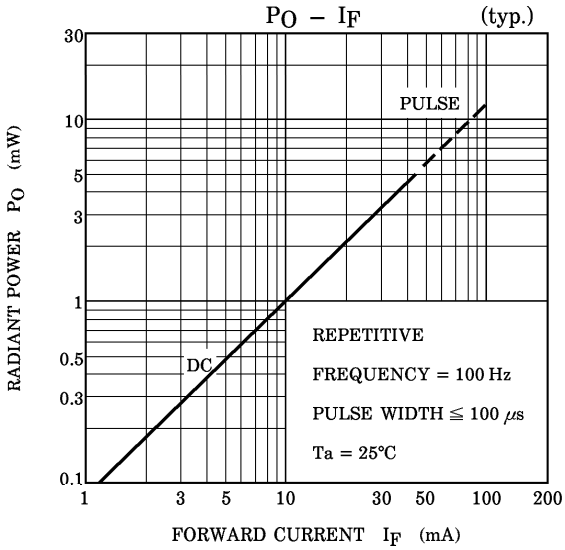
I_F – V_F (typ.)



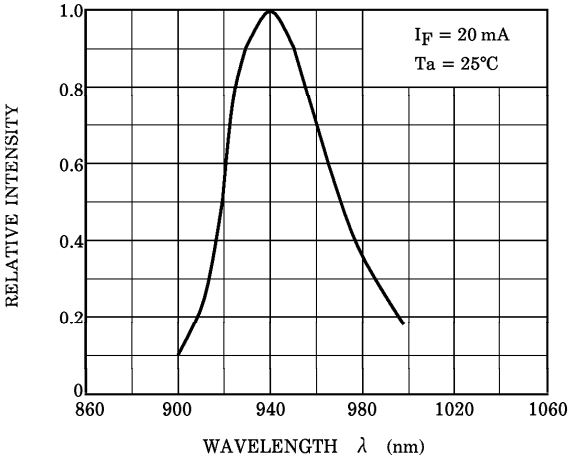
I_{FP} – V_{FP} (typ.)



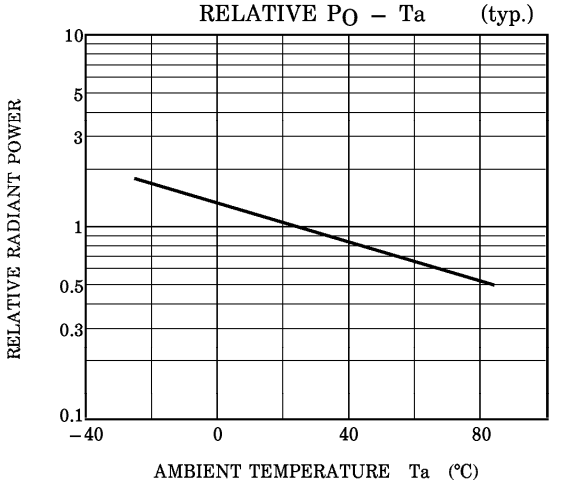
P_O – I_F (typ.)



WAVELENGTH CHARACTERIISTIC (typ.)

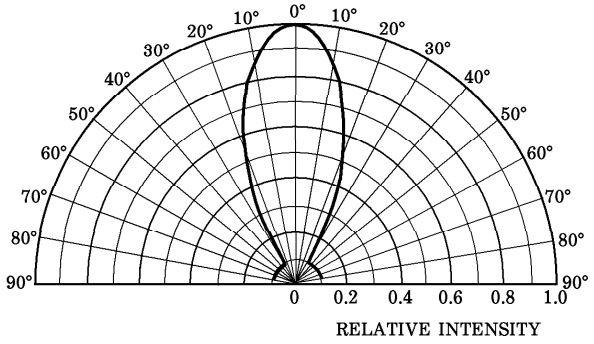


RELATIVE P_O – Ta (typ.)

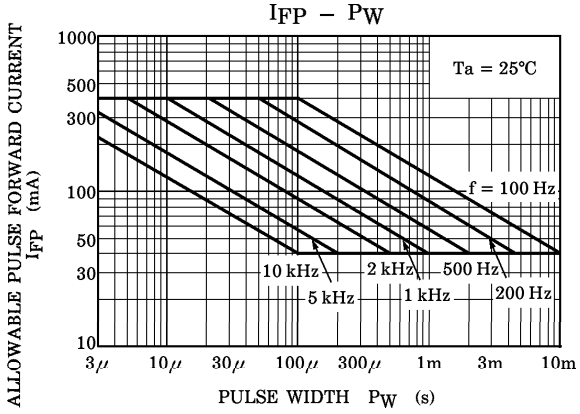


RADIATION PATTERN (typ.)

(Ta = 25°C)



I_{FP} – P_W



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