

TOSHIBA INFRARED LED GaAlAs INFRARED EMITTER

TLN203

INFRARED LED FOR PHOTODETECTORS

Unit : mm

OPTO-ELECTRONIC SWITCHES

TAPE AND CARD READERS

ROTARY ENCODERS

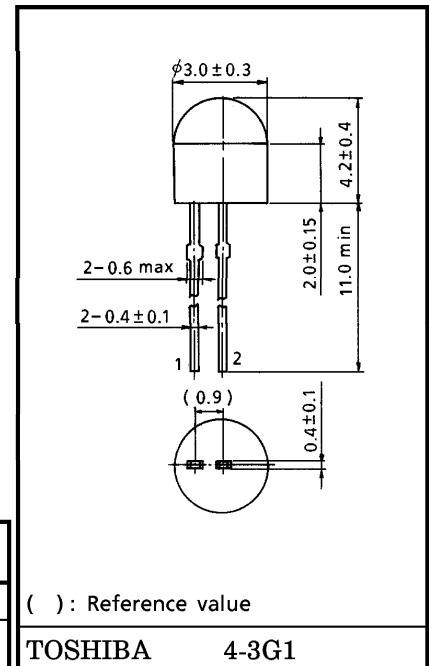
FDD (FLOPPY DISK DRIVE) DETECTION

- High radiant intensity
- Ideal for use in combination with TPS613 phototransistor

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Forward Current	I_F	50	mA
Forward Current Derating (Ta > 25°C)	ΔI_F	-0.67	mA / °C
Pulse Forward Current (Note)	I_{FP}	1	A
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-20~75	°C
Storage Temperature	T_{stg}	-30~100	°C

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

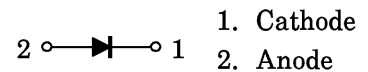


() : Reference value

TOSHIBA 4-3G1

Weight : 0.09 g (typ.)

PIN CONNECTION



OPTICAL AND ELECTRICAL CHARACTERISTICS (Ta = 25°C)

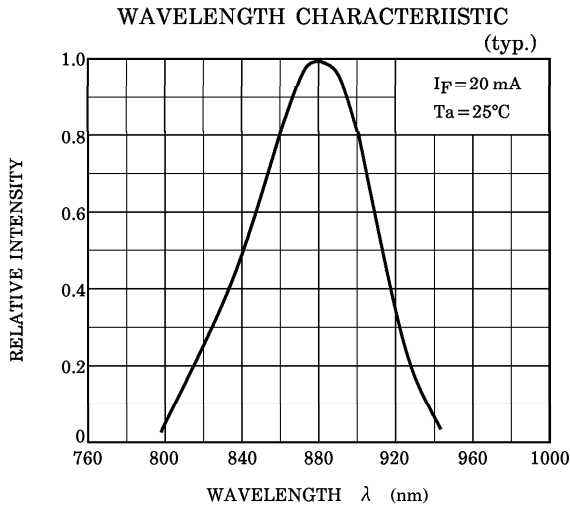
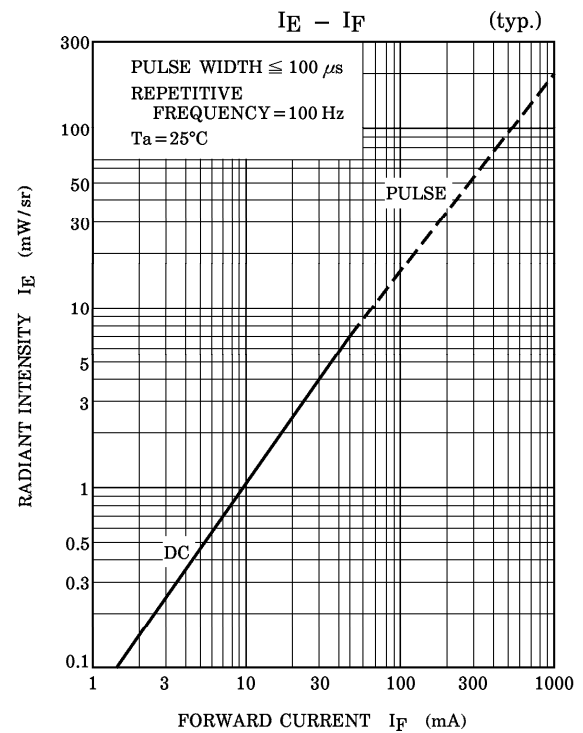
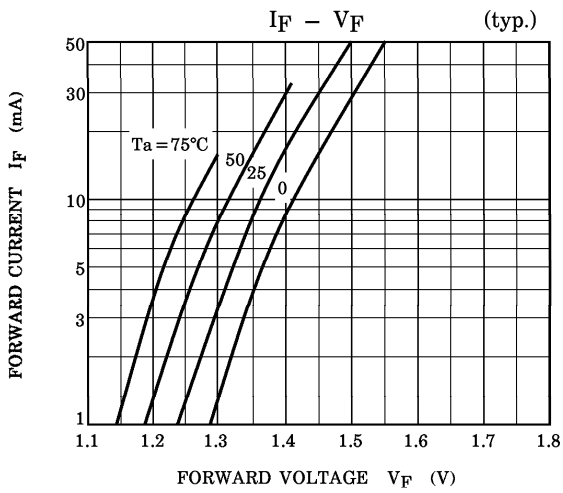
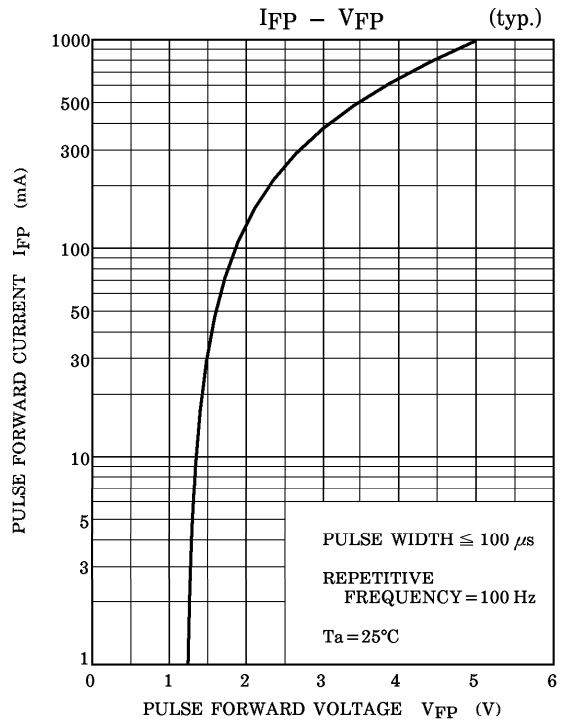
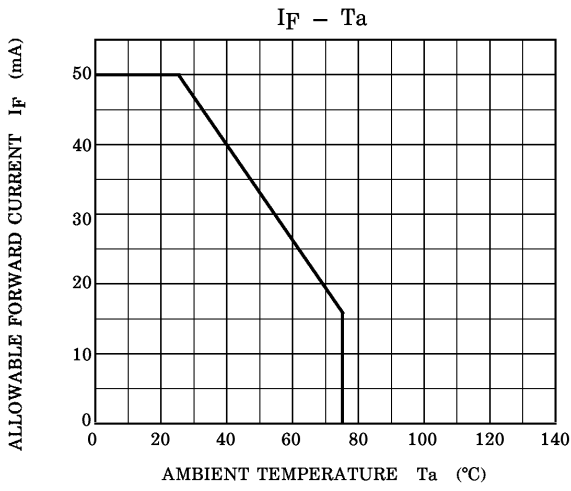
CHARACTERISTIC	SYMBOL	TEST CONDITION	Min	Typ.	Max	UNIT
Forward Voltage	V_F	$I_F = 50 \text{ mA}$	—	1.45	1.9	V
Reverse Current	I_R	$V_R = 5 \text{ V}$	—	—	10	μA
Radiant Intensity	I_E	$I_F = 20 \text{ mA}$	1.0	—	—	mW / sr
Radiant Power	P_O	$I_F = 20 \text{ mA}$	—	3.5	—	mW
Capacitance	C_T	$V_R = 0, f = 1 \text{ MHz}$	—	60	—	pF
Peak Emission Wavelength	λ_P	$I_F = 20 \text{ mA}$	—	880	—	nm
Spectral Line Half Width	$\Delta \lambda_P$	$I_F = 20 \text{ mA}$	—	80	—	nm
Half Value Angle	$\theta_{\frac{1}{2}}$	$I_F = 20 \text{ mA}$	—	± 35	—	°

PRECAUTIONS

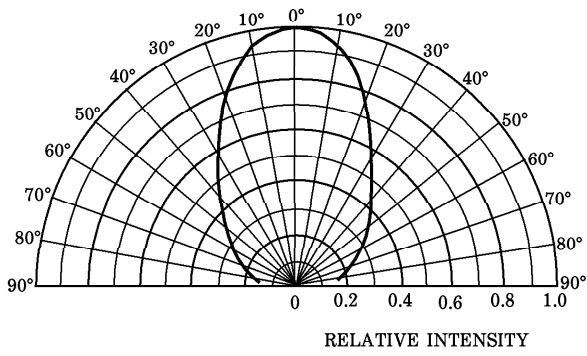
Please be careful of the followings.

1. Soldering must be performed under the lead stopper.
2. Soldering temperature : 260°C max
Soldering time : 3 s max
3. 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.
4. Radiation 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.

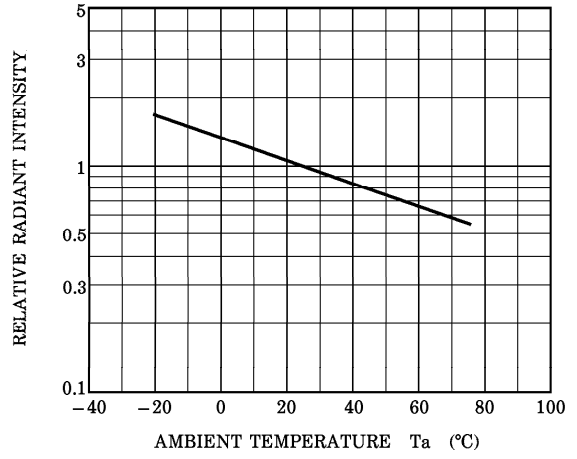
$$\frac{I_E(t)}{I_E(0)} = \frac{P_O(t)}{P_O(0)}$$



RADIATION PATTERN (typ.)
($T_a = 25^\circ\text{C}$)



RELATIVE $I_E - T_a$ (typ.)



RESTRICTIONS ON PRODUCT USE

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