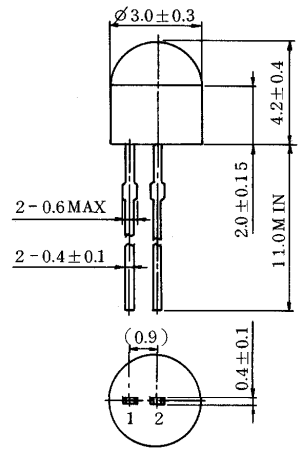
TOSHIBA INFRARED LED GaAs INFRARED EMITTER

TLN113

INFRARED LED FOR PHOTO SENSOR

Unit in mm



( ): REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	4-3G1

Weight : 0.08g (TYP.)

OPTO-ELECTRONIC SWITCH

TAPE, CARD READERS

ROTARY ENCODER

DETECTION OF FDD (FLOPPY DISK DRIVE)

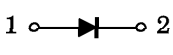
- High radiant intensity
- Best suited for combination with Photo Transistor TPS613.

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 (Note)	I_{FP}	400	mA
Reverse Voltage	V_R	5	V
Operating Temperature Range	T_{opr}	−20~75	°C
Storage Temperature Range	T_{stg}	−30~100	°C

(Note) Pulse Width ≦ 100 μs, Repetitive Frequency = 100Hz

PIN CONNECTION



1. ANODE
2. CATHODE

OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Forward Voltage	V_F	I_F = 10mA	—	1.15	1.30	V
Reverse Current	I_R	V_R = 5V	—	—	10	μA
Radiant Intensity (Note)	I_E	I_F = 20mA	0.8	—	4.8	mW / sr
Radiant Power	P_O	I_F = 20mA	—	2.5	—	mW
Capacitance	C_T	V_R = 0, f = 1MHz	—	30	—	pF
Peak Emission Wavelength	λ_P	I_F = 20mA	—	940	—	nm
Spectral Line Half Width	$\Delta\lambda$	I_F = 20mA	—	50	—	nm
Half Value Angle	$\theta \frac{1}{2}$	I_F = 20mA	—	±40	—	°

(Note) I_E classification AB : 0.8~3.0mW / sr, BC : 1.25~4.8mW / sr, A : 0.8~2.0mW / sr
B : 1.25~3.0mW / sr, C : 2.0~4.8mW / sr

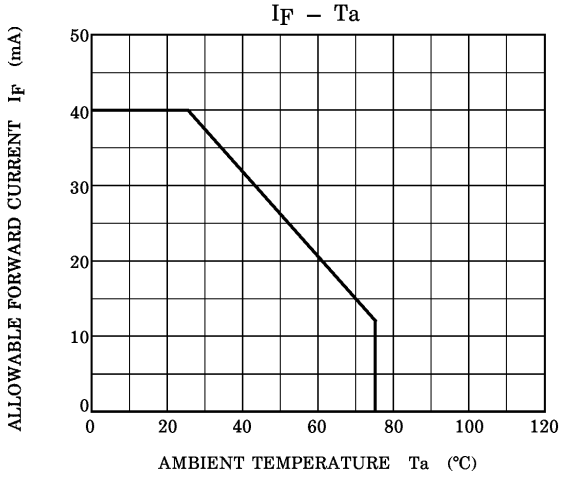
961001EAC2

PRECAUTION

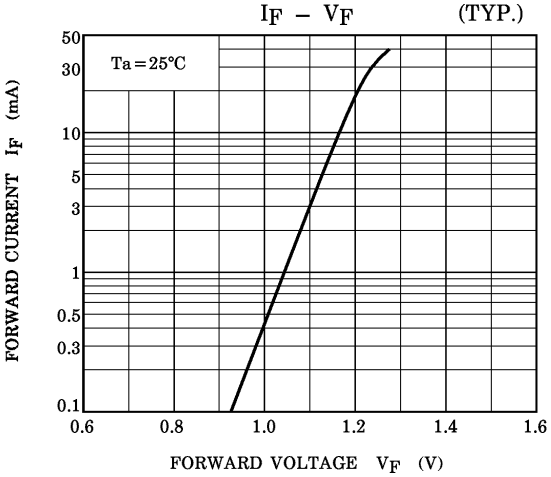
Please be careful of the followings.

1. Soldering temperature : 260°C MAX. Soldering time : 3s MAX.
   (Soldering portion of lead : above 2mm from the body of the device)
2. When the lead is formed, the lead shall be formed at a distance of 2mm from the body without leaving forming stress to the body of the device.
   Soldering shall be performed after lead forming.

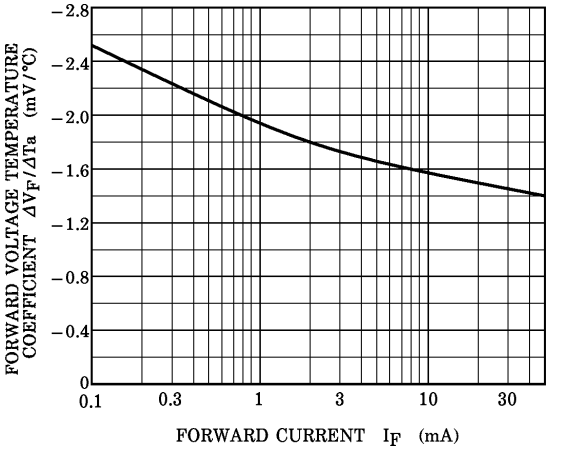
I_F – Ta



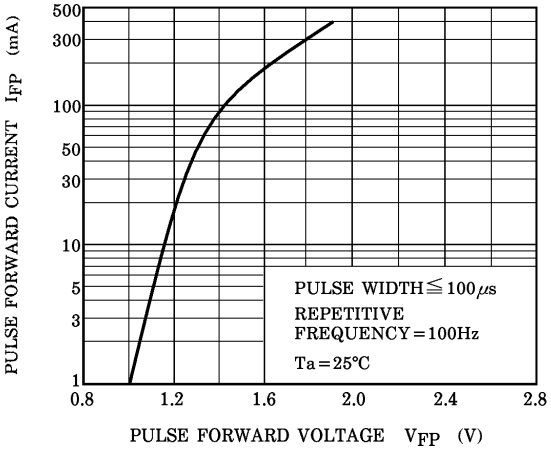
I_F – V_F (TYP.)



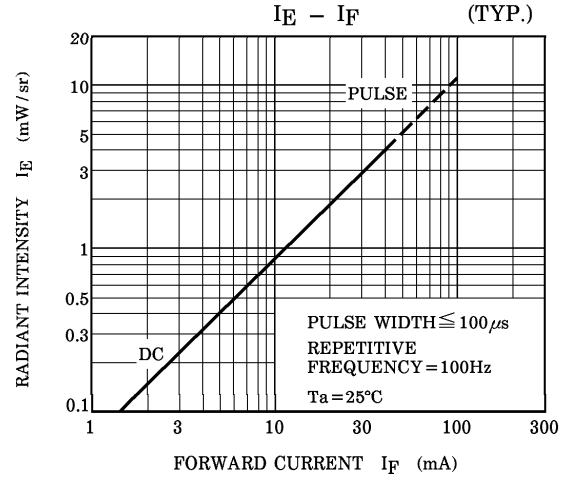
$\Delta V_F / \Delta Ta$ – I_F



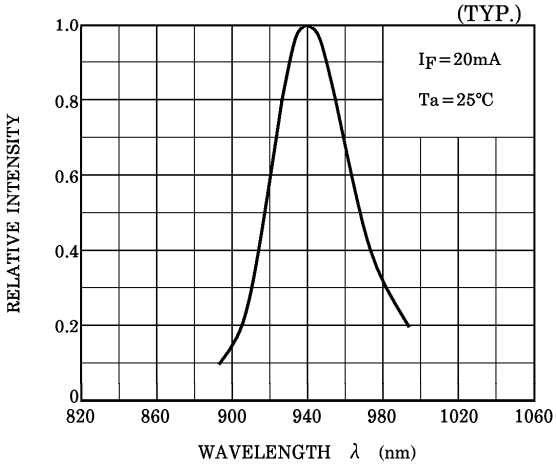
I_{FP} – V_{FP} (TYP.)



I_E – I_F (TYP.)

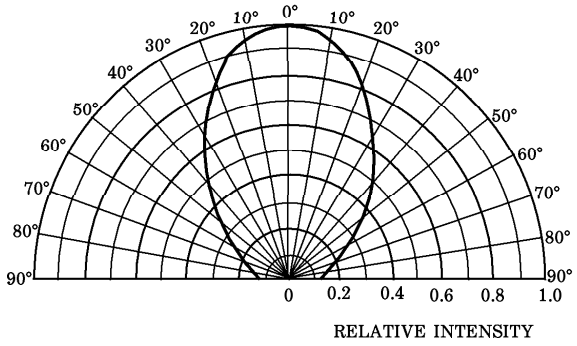


WAVELENGTH CHARACTERISTIC (TYP.)

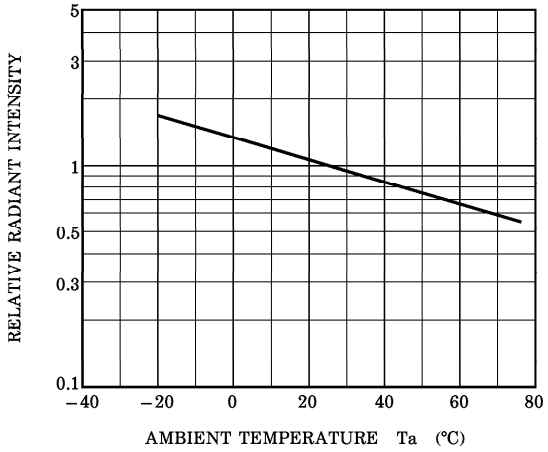


RADIATION PATTERN (TYP.)

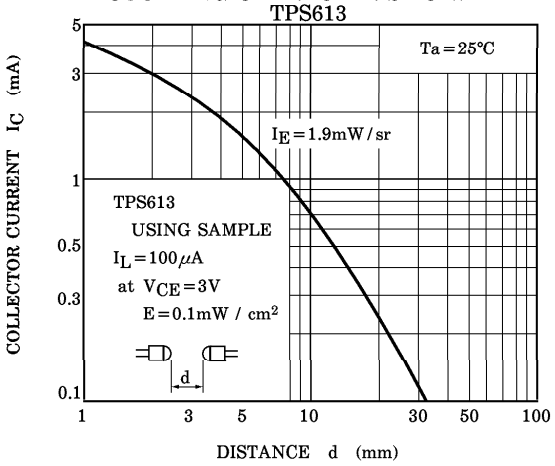
(Ta = 25°C)



RELATIVE I_E – Ta (TYP.)



COUPLING CHARACTERISTIC WITH TPS613



I_{FP} – P_W