TOSHIBA INFRARED LED GaAs INFRARED EMITTER

TLN103A

INFRARED LED FOR PHOTO SENSOR

Unit in mm

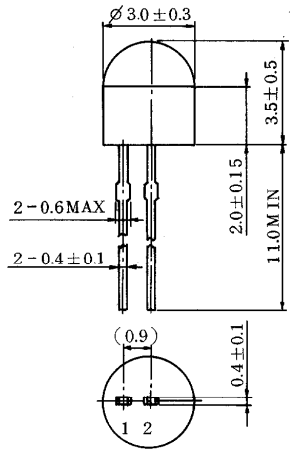
OPTO-ELECTRONIC SWITCH

SELECTOR

TAPE, CARD READERS

INFRARED RAYS APPLIED EQUIPMENT

- Wide half value angle : $\theta\frac{1}{2} = \pm 80°$ (TYP.)
- Excellent linearity of radiant power and modulation by pulse operation and high frequency is possible.
- The same external shape as Photo Transistors TPS603A.
- Maximum distance when used as a photo sensor :
  At DC drive ≃ 5mm
  At pulse drive ≃ 30mm
  } When TPS603A IL ≃ 100μA

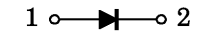


( ) : REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	

Weight : 0.08g (TYP.)

PIN CONNECTION



1. ANODE
2. CATHODE

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Forward Current	I_F	60	mA
Pulse Forward Current (Note)	I_{FP}	1	A
Reverse Voltage	V_R	5	V
Forward Current Derating (Ta > 25°C)	ΔI_F / °C	−0.8	mA / °C
Operating Temperature Range	T_{opr}	−20~75	°C
Storage Temperature Range	T_{stg}	−30~100	°C

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

OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Forward Voltage	V_F	I_F = 10mA	1.00	1.15	1.30	V
Reverse Current	I_R	V_R = 5V	—	—	10	μA
Radiant Intensity	I_E	I_F = 20mA	0.5	1.0	—	mW / sr
Radiant Power	P_O	I_F = 20mA	—	2.5	—	mW
Half Value Angle	$\theta\frac{1}{2}$	I_F = 20mA	—	±80	—	°
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

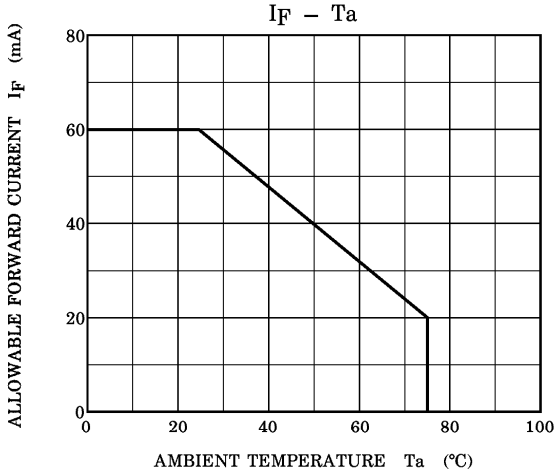
961001EAC2

PRECAUTION

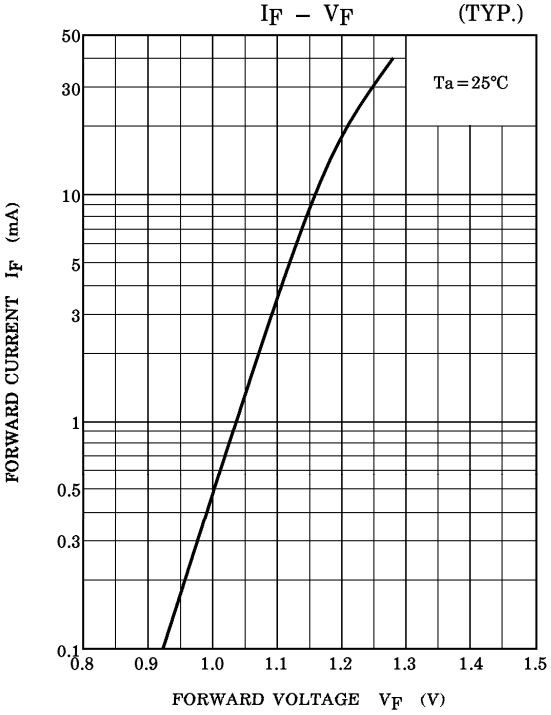
Please be careful of the followings.

1. Soldering temperature : 260°C MAX.
   Soldering time : 3s MAX.
   (Soldering portion of lead : above 2mm from the body of the device)
2. If the lead is formed, the lead should be formed at a distance of 2mm from the body of the device. Soldering shall be performed after lead forming.

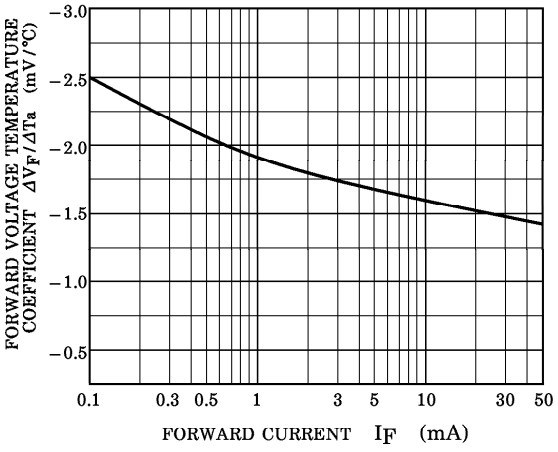
I_F – Ta



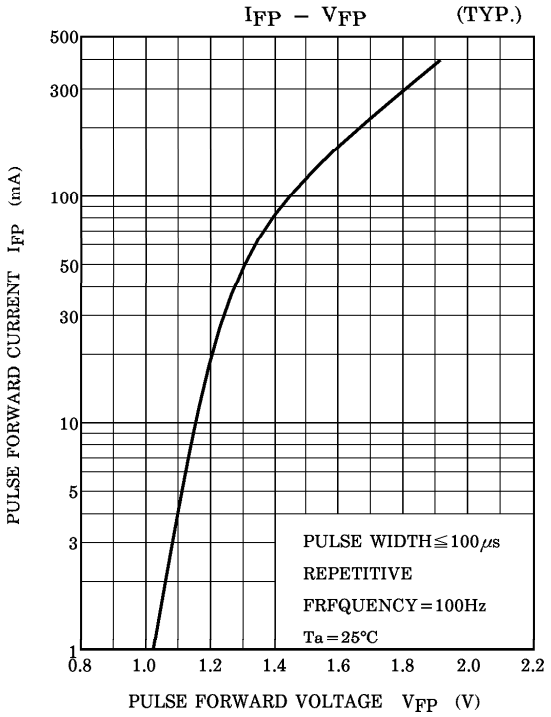
I_F – V_F (TYP.)



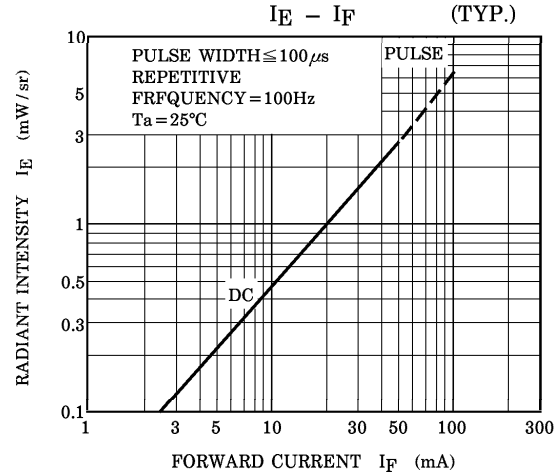
$\Delta V_F / \Delta Ta$ – I_F



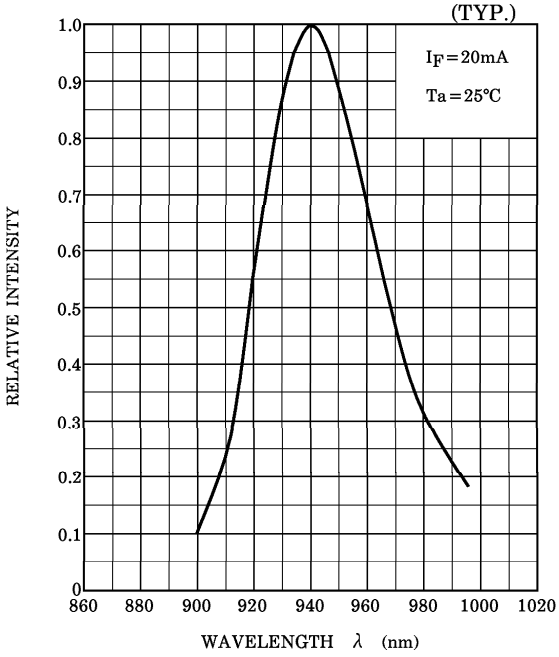
I_{FP} – V_{FP} (TYP.)



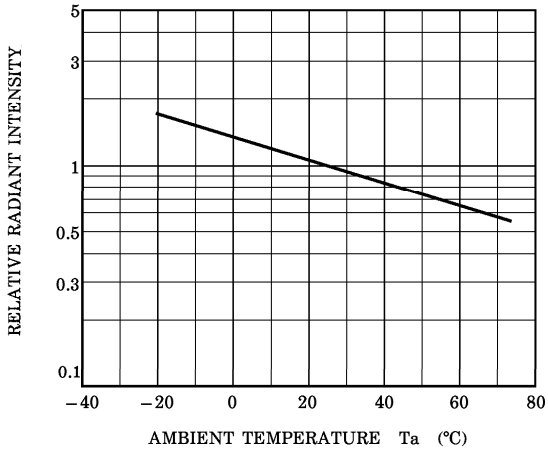
I_E – I_F (TYP.)



WAVELENGTH CHARACTERIISTIC (TYP.)

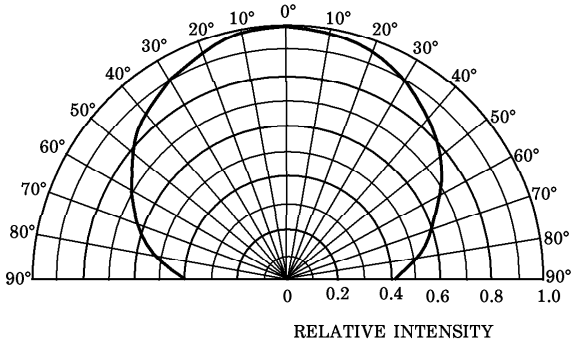


RERATIVE I_E – Ta (TYP.)



RADIATION PATTERN (TYP.)

(Ta = 25°C)



I_{FP} – P_W