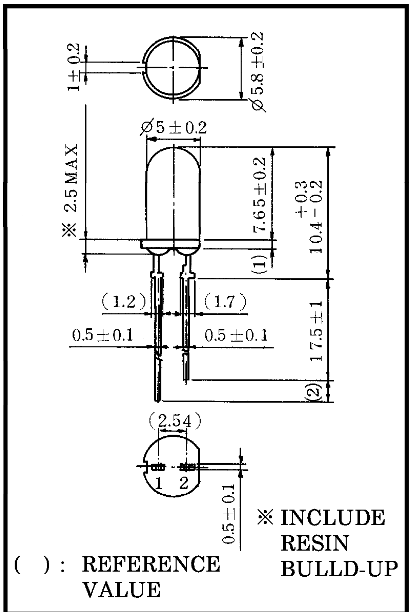
TOSHIBA INFRARED LED GaAs INFRARED EMITTER

TLN105B

INFRARED LED FOR REMOTE CONTROL SYSTEM

Unit in mm



※ INCLUDE RESIN BULLD-UP

( ) : REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	4-6B5

Weight : 0.3g (TYP.)

PIN CONNECTION

1. ANODE
2. CATHODE

REMOTE CONTROL SYSTEM

SMOKE SENSOR

OPTO-ELECTRONIC SWITCH

- High radiant intensity : $I_E = 20\mathrm{mW/sr}$ (TYP.)
- Wide half value angle : $\theta\frac{1}{2} = \pm 23.5$ (TYP.)
- Excellent linearity of radiant power and modulation by pulse operation and high frequency is possible.
- PIN photo diode TPS703 provided with a visible light cut filter is available for detector for remote control.

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Forward Current	I_F	100	mA
Forward Current Derating (Ta > 25°C)	ΔI_F / °C	−1.33	mA / °C
Pulse Forward Current (Note)	I_{FP}	1	A
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	150	mW
Operating Temperature Range	T_{opr}	−20~75	°C
Storage Temperature Range	T_{stg}	−30~100	°C

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

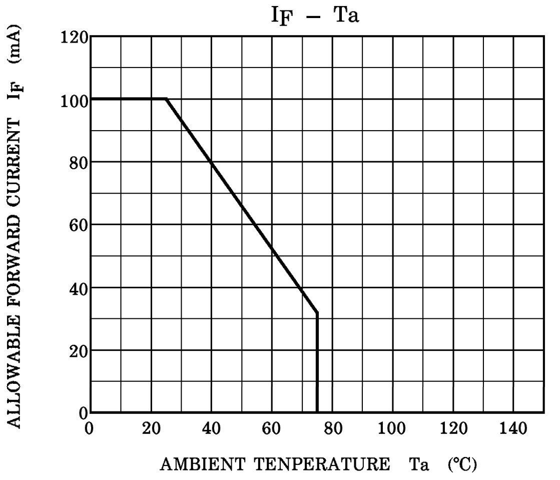
OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

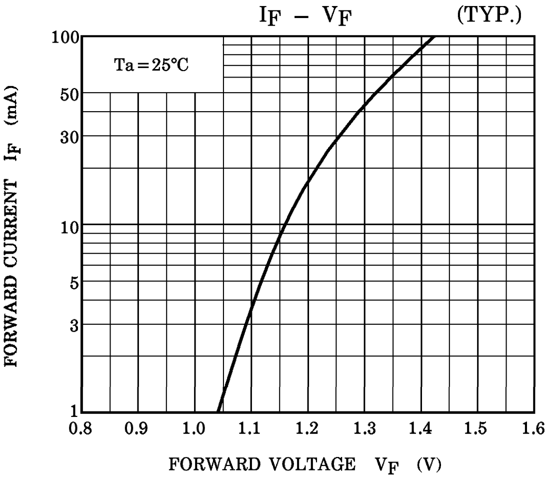
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Forward Voltage	V_F	$I_F = 100\mathrm{mA}$	—	1.35	1.5	V
Reverse Current	I_R	$V_R = 5\mathrm{V}$	—	—	10	μA
Radiant Intensity	I_E	$I_F = 50\mathrm{mA}$	12	20	—	mW / sr
Radiant Power	P_O	$I_F = 50\mathrm{mA}$	—	11	—	mW
Capacitance	C_T	$V_R = 0$, f = 1MHz	—	20	—	pF
Peak Emission Wavelength	λ_P	$I_F = 50\mathrm{mA}$	—	950	—	nm
Spectral Line Half Width	$\Delta\lambda$	$I_F = 50\mathrm{mA}$	—	50	—	nm
Half Vaule Angle	$\theta\frac{1}{2}$	$I_F = 50\mathrm{mA}$	—	±23.5	—	°

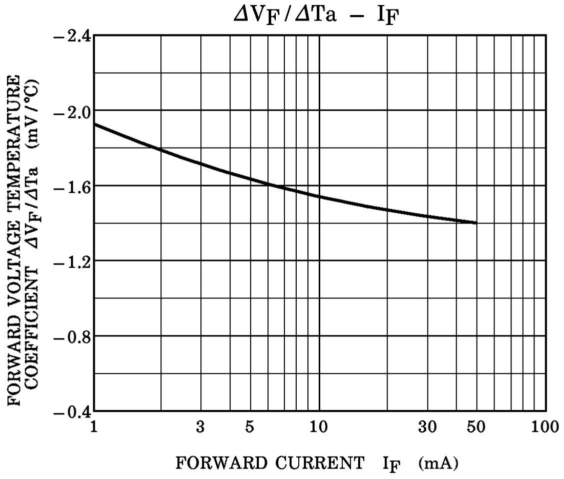
PRECAUTION

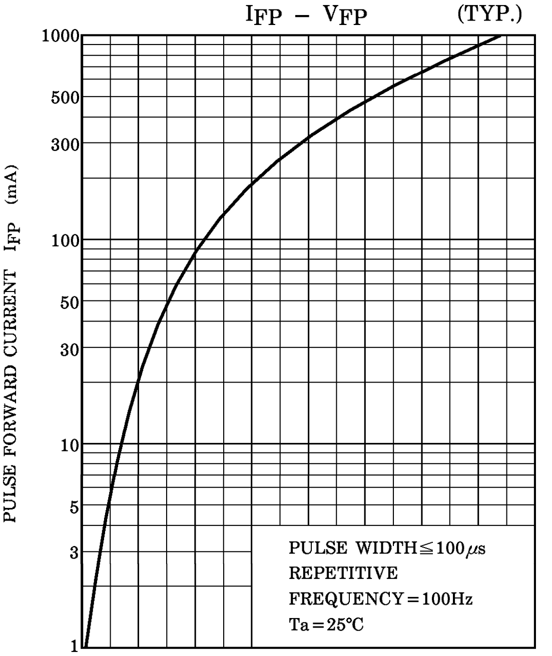
Please be careful of the followings.

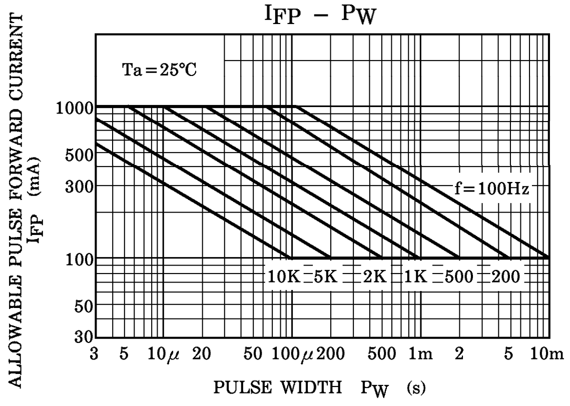
1. Soldering shall be performed at the top portion from the lead stopper.
2. Soldering temperature : 260°C MAX. Soldering time : 5 sec MAX.
3. When the lead is formed, the lead shall be formed at the top portion of the stopper without leaving forming stress to the body of the device.
   Soldering shall be performed after lead forming.


I_F – Ta

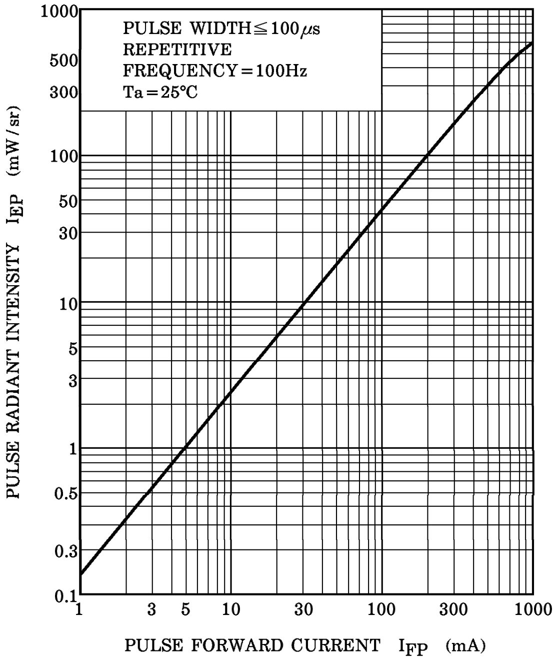

I_F – V_F (TYP.)


$\Delta V_F / \Delta Ta$ – I_F

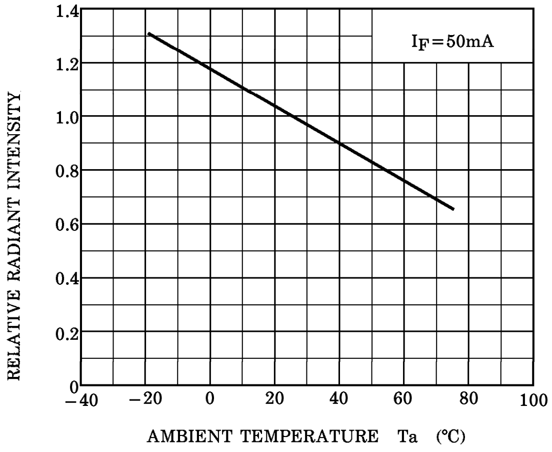

I_{FP} – V_{FP} (TYP.)


I_{FP} – P_W

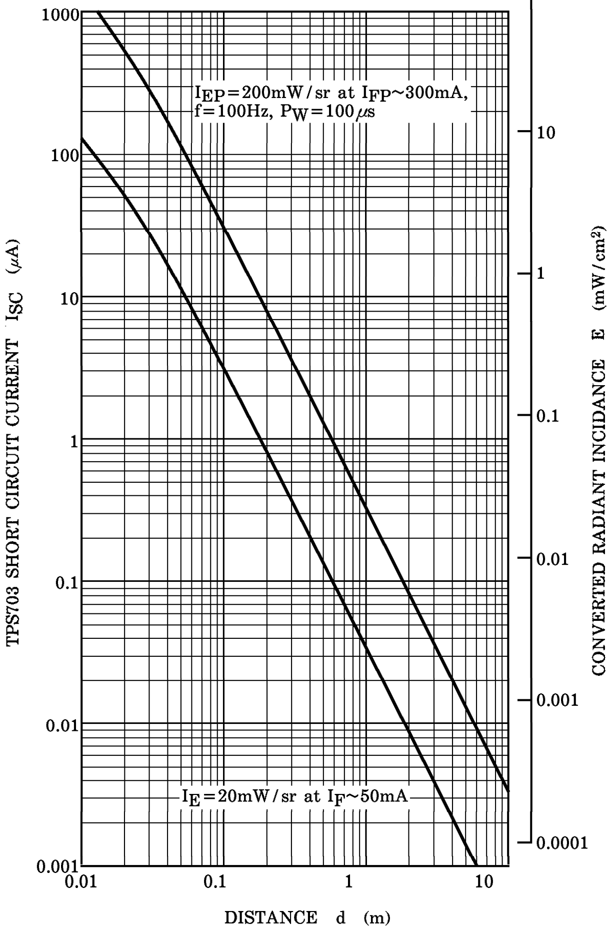
I_{EP} – I_{FP} (TYP.)



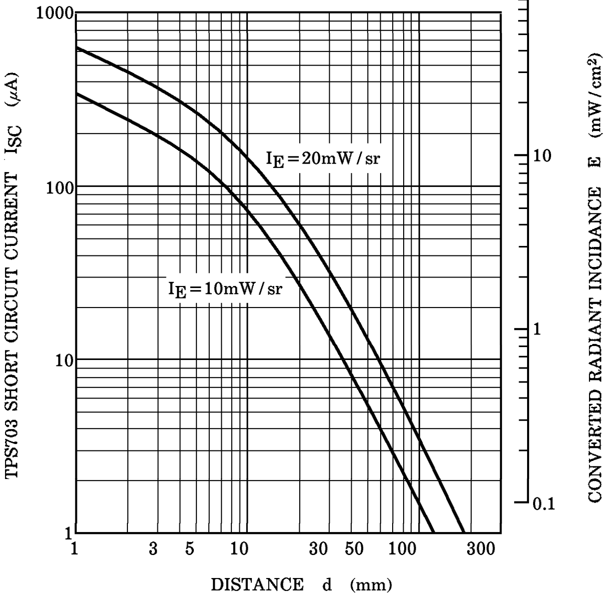
RELATIVE I_E – Ta (TYP.)



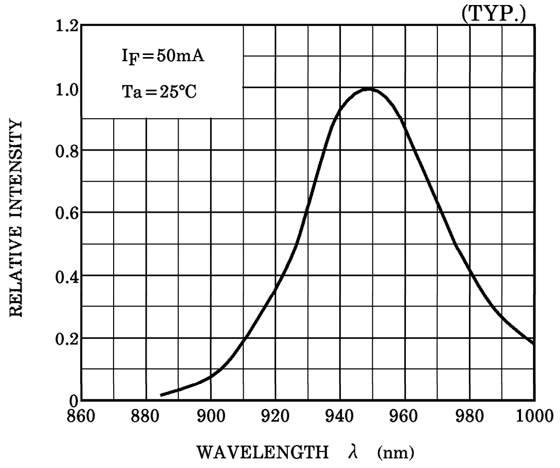
DISTANCE CHARACTERISTICS



DISTANCE CHARACTERISTICS



WAVELENGTH CHARACTERISTIC (TYP.)



RADIATION PATTERN (Ta = 25°C) (TYP.)