TOSHIBA INFRARED LED GaAs INFRARED EMITTER

TLN110

INFRARED LED FOR REMOTE CONTROL SYSTEM

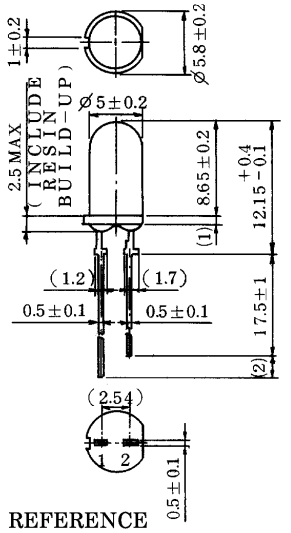
Unit in mm

REMOTE CONTROL SYSTEM

SMOKE SENSOR

OPTO-ELECTRONIC SWITCH

- High radiant intensity : I_E = 30mW / sr (TYP.)
- Excellent linearity of radiant intensity and modulation by pulse operation and high frequency is possible.
- PIN photo diode TPS703 provided with a visible light cut resin is available for detector for remote control.

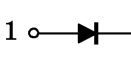


( ): REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	4-6C4

Weight : 0.32g (TYP.)

PIN CONNECTION



1. ANODE
2. CATHODE

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	I_{FP} (Note)	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 ≦ 100 μs, Repetitive Frequency = 100Hz

OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Forward Voltage	V_F	I_F = 100mA	—	1.35	1.5	V
Reverse Current	I_R	V_R = 5V	—	—	10	μA
Radiant Intensity	I_E	I_F = 50mA	15	30	—	mW / sr
Radiant Power	P_O	I_F = 50mA	—	9	—	mW
Capacitance	C_T	V_R = 0, f = 1MHz	—	20	—	pF
Peak Emission Wavelength	λ_P	I_F = 50mA	—	940	—	nm
Spectral Line Half Width	$\Delta\lambda$	I_F = 50mA	—	45	—	nm
Half Value Angle	$\theta \frac{1}{2}$	I_F = 50mA	—	±8	—	°

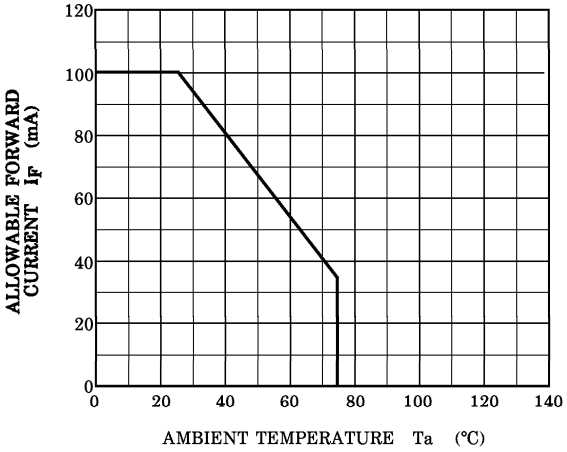
961001EAC2

PRECAUTION

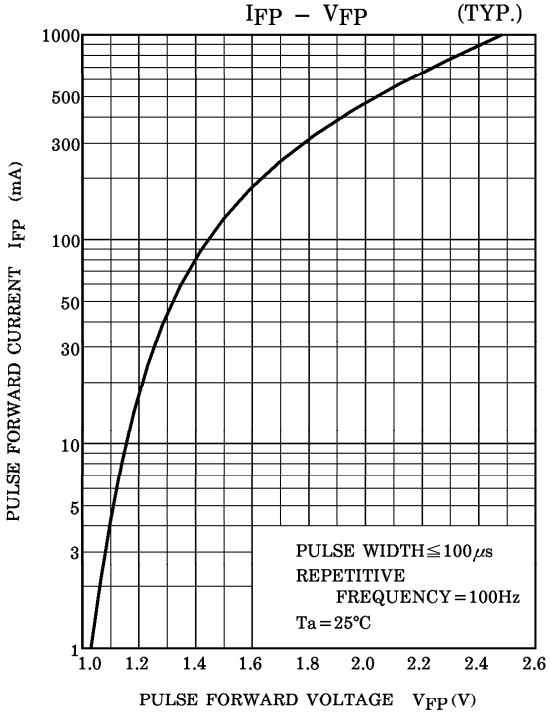
Please be careful of the followings.

1. Soldering temperature : 260°C MAX. Soldering time : 5 sec MAX.
   (Soldering shall be performed at the top portion from the lead stopper.)
2. 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.

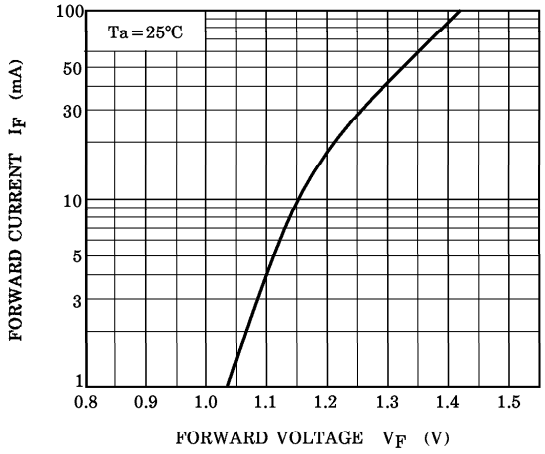
I_F – Ta



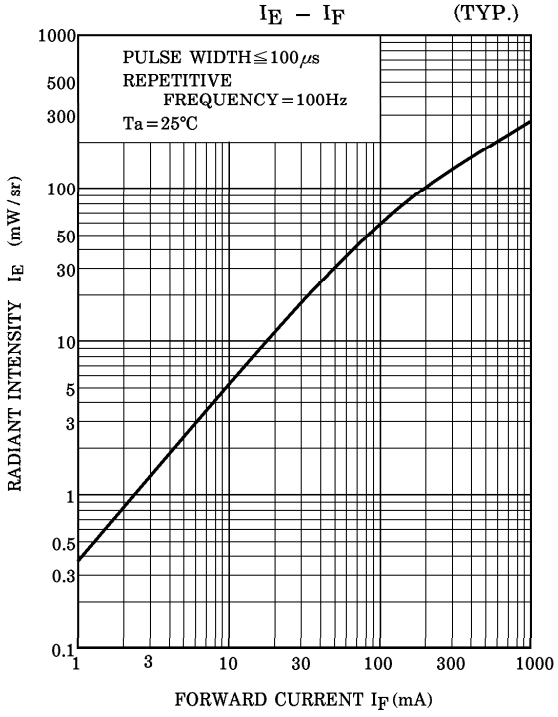
I_{FP} – V_{FP} (TYP.)



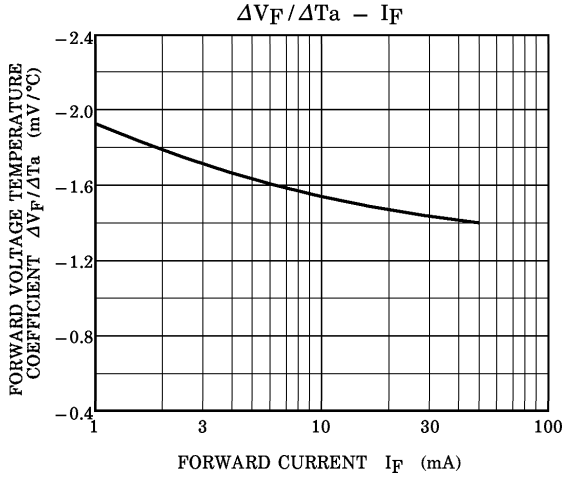
I_F – V_F (TYP.)



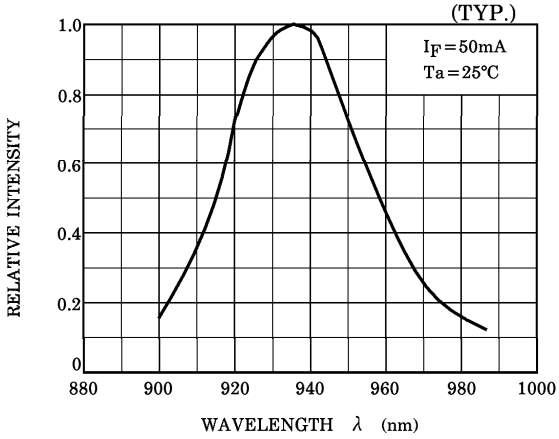
I_E – I_F (TYP.)



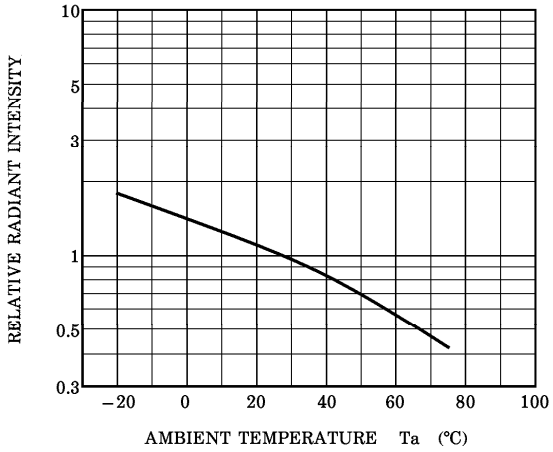
$\Delta V_F / \Delta Ta$ – I_F



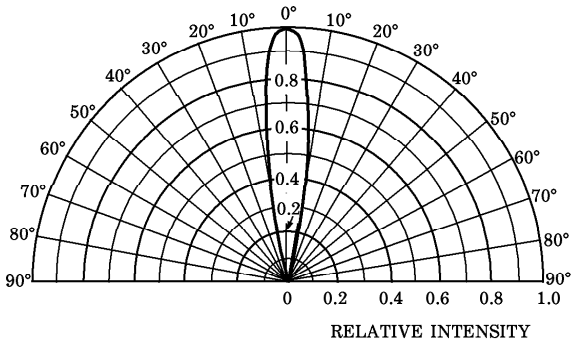
WAVELENGTH CHARACTERISTIC (TYP.)



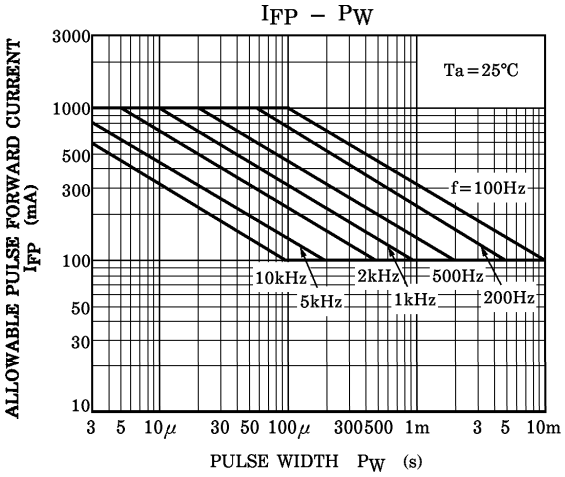
RELATIVE I_E – Ta (TYP.)



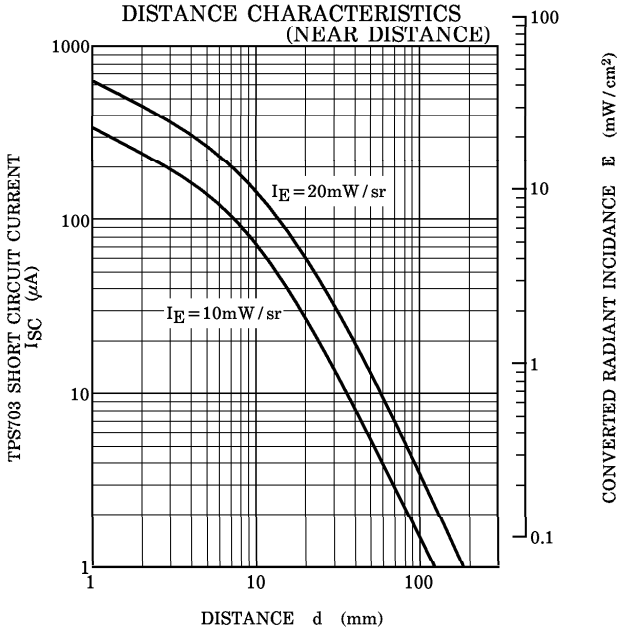
RADIATION PATTERN (TYP.)
(Ta = 25°C)

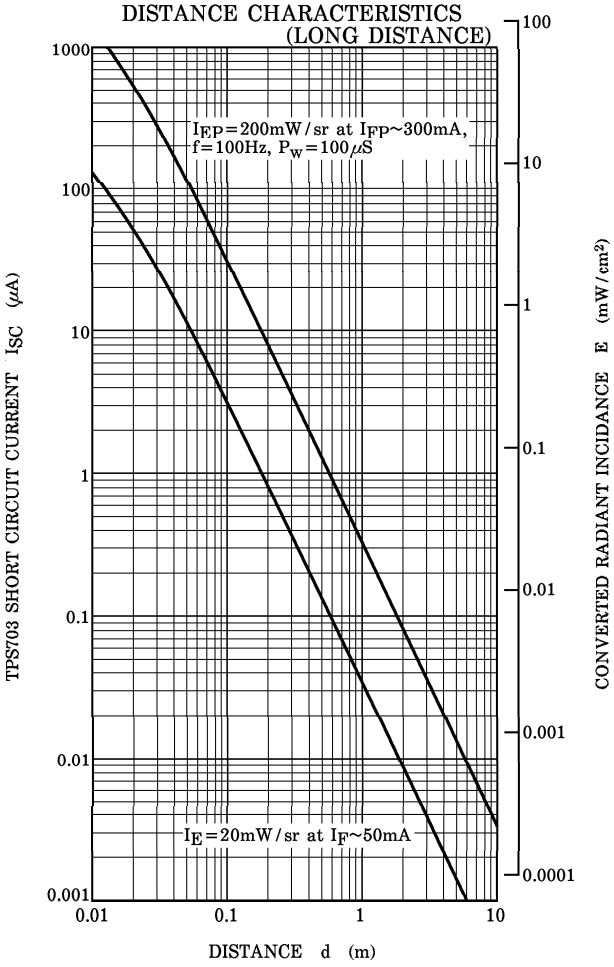


I_{FP} – P_W



DISTANCE CHARACTERISTICS (NEAR DISTANCE)




DISTANCE CHARACTERISTICS
(LONG DISTANCE)
I_{EP}=200mW/sr at I_{FP}~300mA,
f=100Hz, P_W=100μS
I_E=20mW/sr at I_F~50mA
TPS703 SHORT CIRCUIT CURRENT I_{SC} (μA)
CONVERTED RADIANT INCIDANCE E (mW/cm²)
DISTANCE d (m)
1000
100
10
1
0.1
0.01
0.001
0.01
0.1
1
10
100
10
1
0.1
0.01
0.001
0.0001