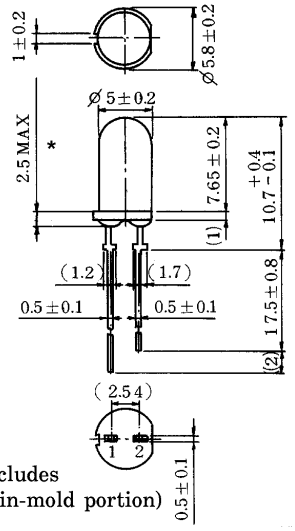
TENTATIVE TOSHIBA INFRARED LED GaAℓAs INFRARED EMITTER

TLN221

INFRARED LED FOR SPACE-OPTICAL-TRANSMISSION

Unit in mm

- High radiant power : Po = 18mW (TYP.) at I_F = 50mA
- Wide radiant pattern : $\theta_{\frac{1}{2}} = \pm 21°$ (TYP.)
- High speed response : t_r, t_f = 30ns (TYP.)
- A light source for remote control.
- Wireless AV-signal transmission purpose.
- High speed data transmission purpose.



* (Includes resin-mold portion)

( ): REFERENCE VALUE

JEDEC	—
EIAJ	—
TOSHIBA	4-6B6

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Forward Current	I_F	100	mA
Pulse Forward Current	I_{FP}	1000 (Note:1)	mA
Power Dissipation	P_D	220	mW
Reverse Voltage	V_R	4	V
Operating temperature Range	T_{opr}	−25~85	°C
Storage Temperature Range	T_{stg}	−30~100	°C
Soldering Temperature (5s)	T_{sol}	260	°C

(Note : 1) Frequency = 100kHz, duty = 1%

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 = 100mA	—	1.8	2.2	V
Reverse Current	I_R	V_R = 4V	—	—	60	μA
Radiant Power	P_O	I_F = 50mA	14	18	—	mW
Radiant Intensity	I_E	I_F = 50mA	—	30	—	mW / sr
Rise Time, Fall Time	t_r, t_f	I_{FP} = 100mA, P_W = 100ns	—	30	—	ns
Cut-off Frequency (Note:2)	f_c	$I_F = 50mA_{DC} + 5mA_{P\text{-}P}$	10	15	—	MHz
Capacitance	C_T	V_R = 0, f = 1MHz	—	110	—	pF
Peak Emission Wavelength	λ_P	I_F = 50mA	830	870	900	nm
Spectral Line Half Width	$\Delta\lambda$	I_F = 50mA	—	50	—	nm
Half Value Angle	$\theta_{\frac{1}{2}}$	I_F = 50mA	—	±21	—	°

(Note : 2) Frequency when modulation light power decreases by 3dB from 1MHz.

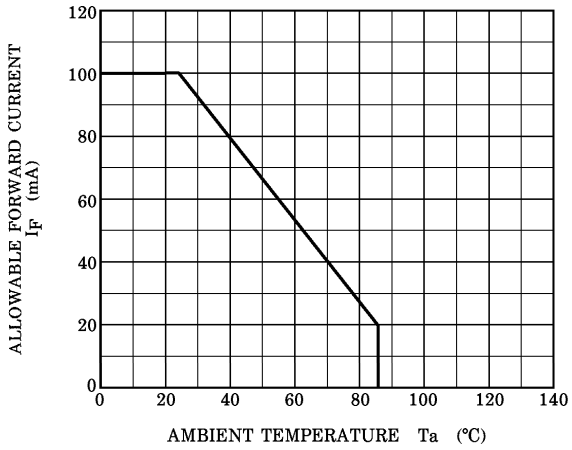
961001EAC2

PRECAUTION

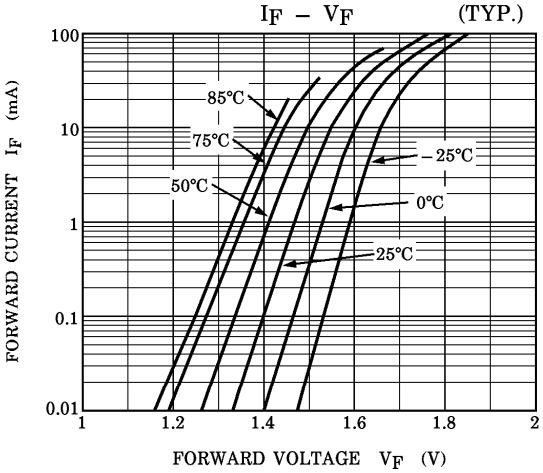
Please be careful of the followings.

1. 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.

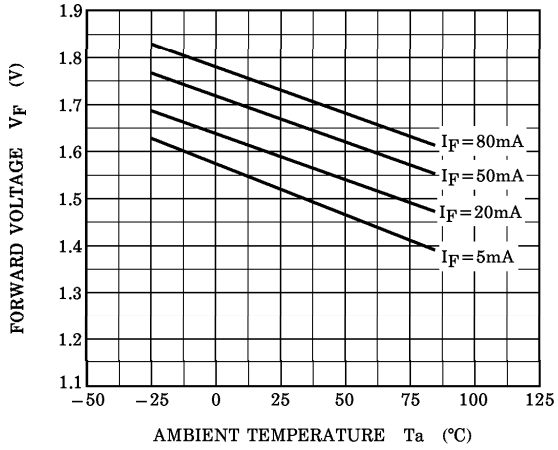
I_F – Ta



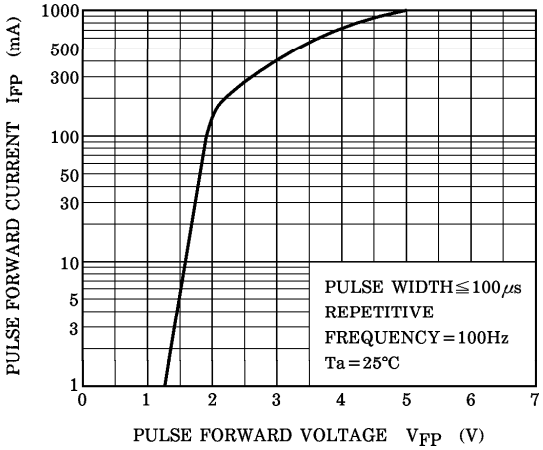
I_F – V_F (TYP.)



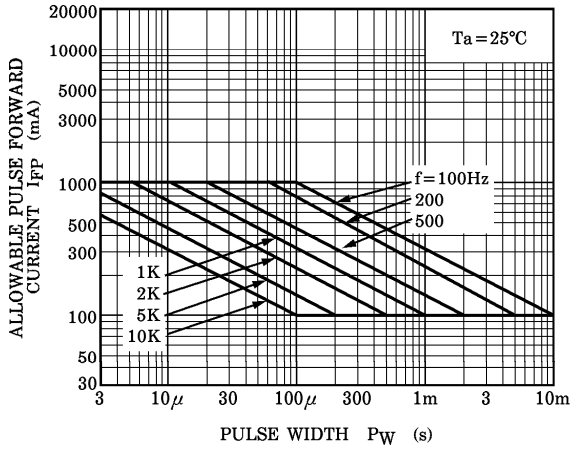
V_F – Ta (TYP.)



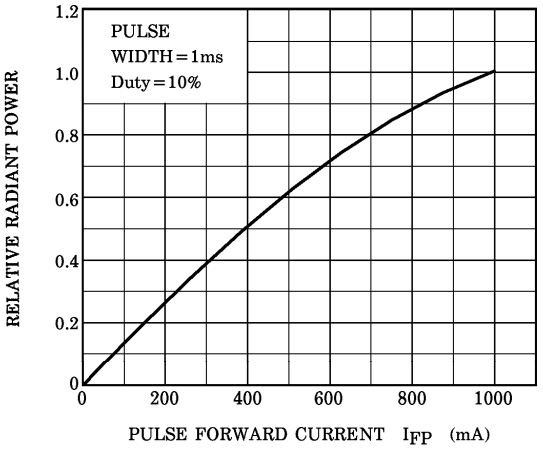
I_{FP} – V_{FP} (TYP.)



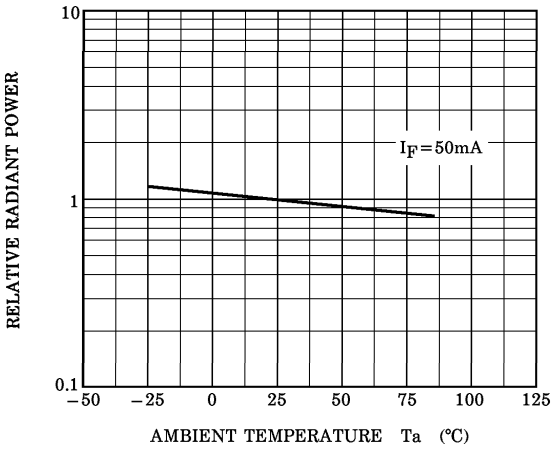
I_{FP} – P_W



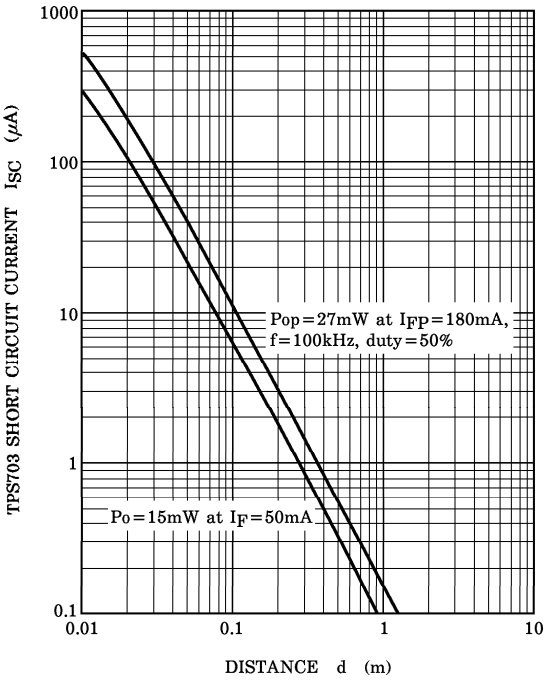
RELATIVE Po – I_{FP} (TYP.)



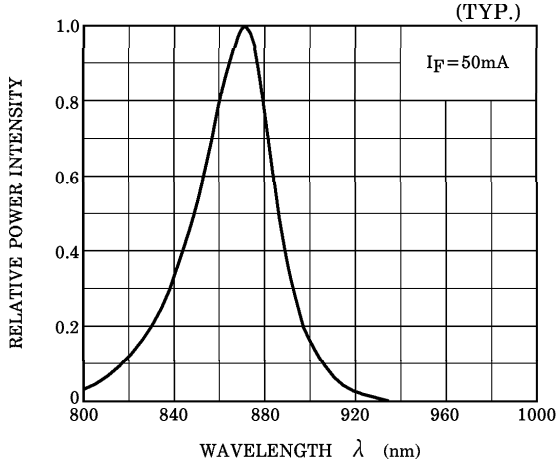
RELATIVE Po – Ta (TYP.)



DISTANCE CHARACTERISTICS

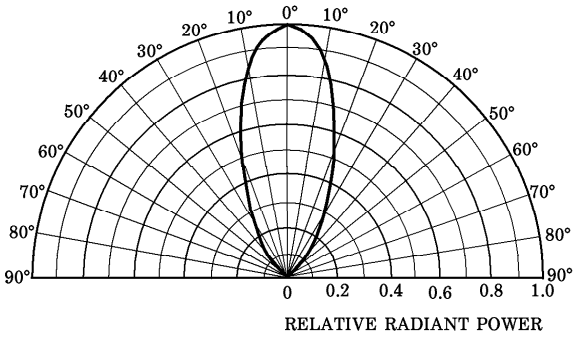


WAVELENGTH CHARACTERISTIC (TYP.)



RADIATION PATTERN (TYP.)

Ta=25°C



FREQUENCY CHARACTERISTIC (TYP.)