

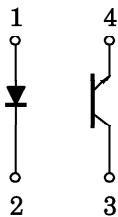
TOSHIBA PHOTOREFLECTIVESENSOR INFRARED LED + PHOTOTRANSISTOR

TLP908, TLP908(LB)

- DETECTION OF START AND END MARKS OF VCR, AUDIO TAPE
- DETECTION OF VCR REEL ROTATION
- DETECTION OF INDEX WRITE PROTECT AND DISK IN OF THE MICRO FLOPPY DISK DRIVE
- TIMING DETECTION OF ELECTRONIC PRINTER AND TYPEWRITER
- READING OF CAMERA FILM INFORMATION (DX CODE)

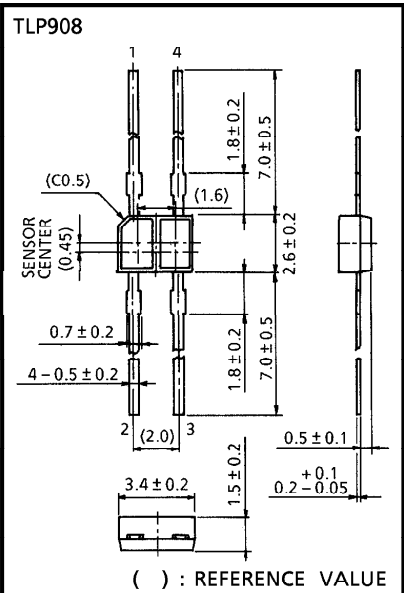
- Very small package : 2.6×3.4mm (Height 1.5mm)
TLP908 : Flat lead type
TLP908 (LB) : Small DIP type
- Short detection distance : Optimum distance 0.5 to 1.5mm
- High sensitivity : $t_r, t_f=10\mu s$ (typ.)
- Protected from external light by black mold packaging.

PIN CONNECTION

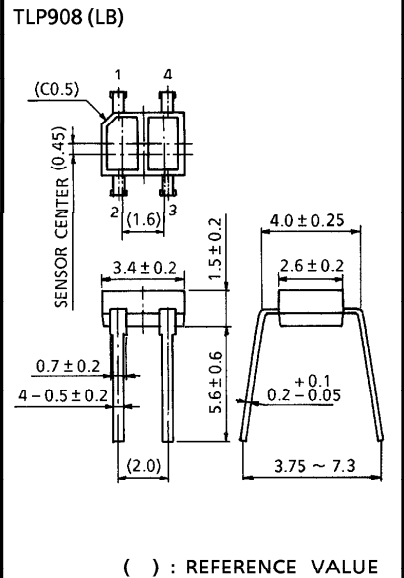


- 1. ANODE
- 2. CATHODE
- 3. COLLECTOR
- 4. EMITTER

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	11-4B1



JEDEC	—
EIAJ	—
TOSHIBA	11-4B101

Weight : 0.05g (typ.)

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● TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	RATING	UNIT
LED	Forward Current	I _F	50	mA
	Forward Current Derating (Ta > 25°C)	ΔI _F / °C	-0.67	mA / °C
	Pulse Forward Current (Note 1)	I _{FP}	400	mA
	Reverse Voltage	V _R	5	V
DETECTOR	Collector-Emitter Voltage	V _{CEO}	30	V
	Emitter-Collector Voltage	V _{ECO}	5	V
	Collector Power Dissipation	P _C	50	mW
	Collector Power Dissipation Derating (Ta > 25°C)	ΔP _C / °C	-0.67	mW / °C
	Collector Current	I _C	20	mA
Operating Temperature Range		T _{opr}	-25~85	°C
Storage Temperature Range		T _{stg}	-30~100	°C

(Note 1) Pulse width ≤ 100 μs, Repetitive frequency = 100 Hz

OPTO-ELECTRICAL CHARACTERISTICS (Ta = 25°C)

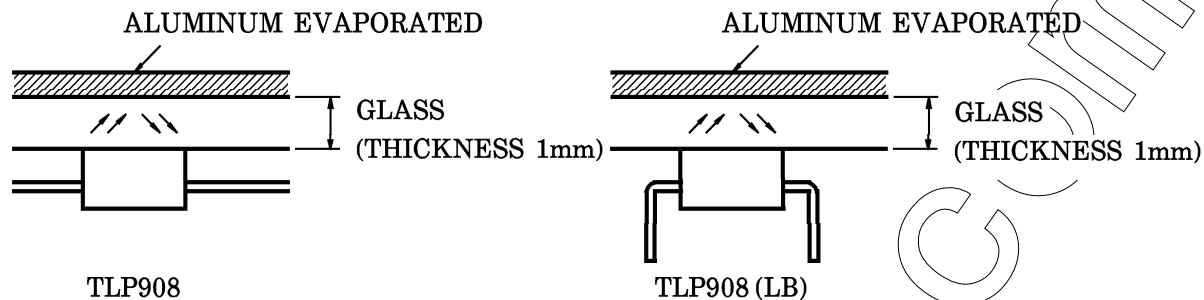
CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
LED	Forward Voltage	V _F	I _F = 10 mA	1.00	1.15	1.30	V
	Reverse Current	I _R	V _R = 5 V	—	—	10	μA
	Peak Emission Wavelength	λ _P	I _F = 10 mA	—	940	—	nm
DETECTOR	Dark Current	I _D (I _{CEO})	V _{CE} = 10 V, I _F = 0	—	—	0.1	μA
	Peak Sensitivity Wavelength	λ _P		—	900	—	nm
COUPLED	Collector Current (Note 2)	I _C	V _{CE} = 5 V, I _F = 10 mA	50	—	750	μA
	Leakage Current	I _{LEAK}	V _{CE} = 5 V, I _F = 10 mA No reflecting substance exists.	—	—	0.1	μA
	Collector-Emitter Saturation Voltage	V _{CE} (sat)	I _F = 10 mA, I _C = 25 μA	—	0.15	0.4	V
	Rise Time	t _r	V _{CC} = 10 V, I _C = 1 mA, R _L = 1 kΩ	—	10	—	μs
	Fall Time	t _f		—	10	—	

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- Gallium arsenide (GaAs) is a substance used in the products described in this document. GaAs dust and fumes are toxic. Do not break, cut or pulverize the product, or use chemicals to dissolve them. When disposing of the products, follow the appropriate regulations. Do not dispose of the products with other industrial waste or with domestic garbage.
- The products described in this document are subject to foreign exchange and foreign trade control laws.
- The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.
- The information contained herein is subject to change without notice.

(Note 2) I_C Classification R : 50~150 μ A, O : 110~330 μ A

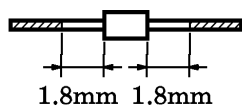
(Note 3) Collector current test method



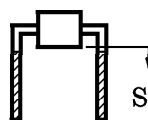
PRECAUTION

Please be careful of the followings.

- Soldering temperature : 260°C max Soldering time : 3s max



TLP908

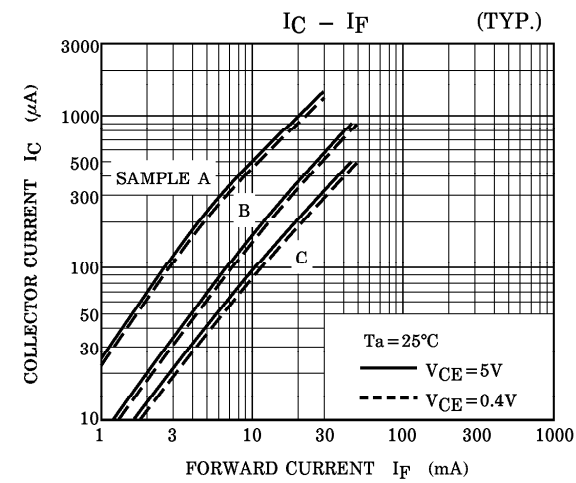
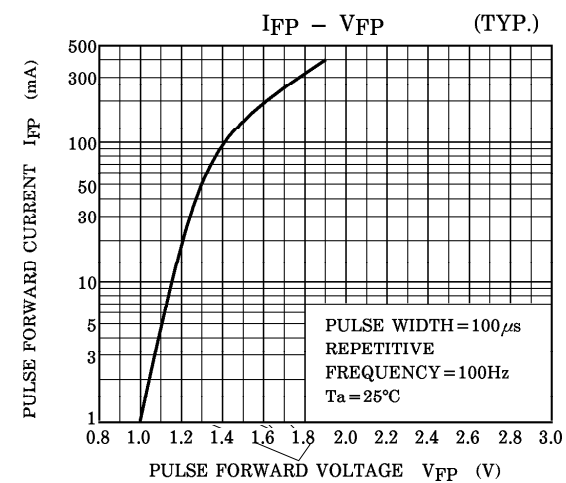
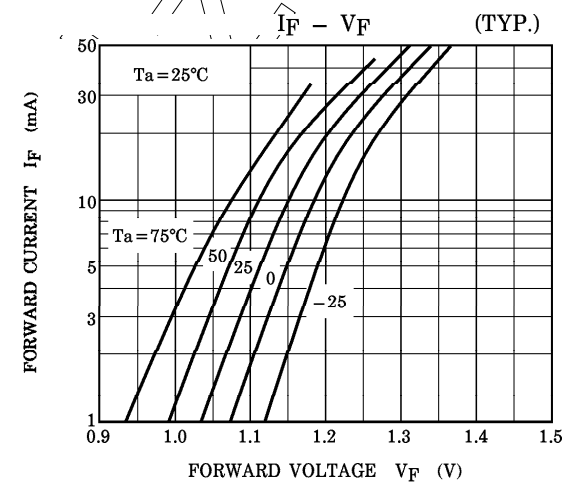
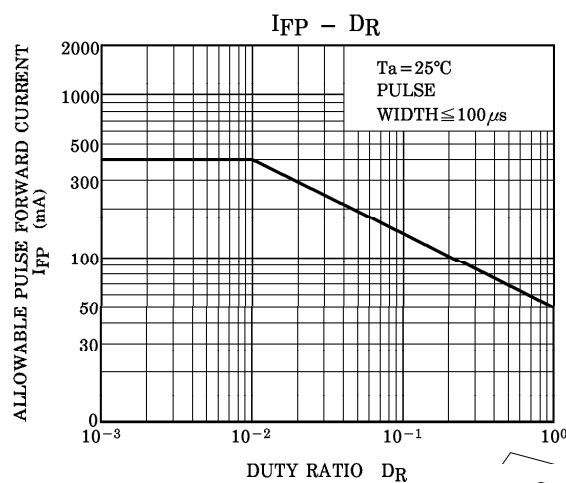
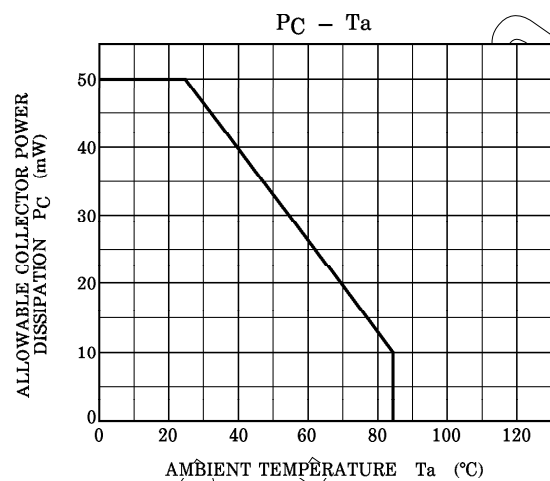
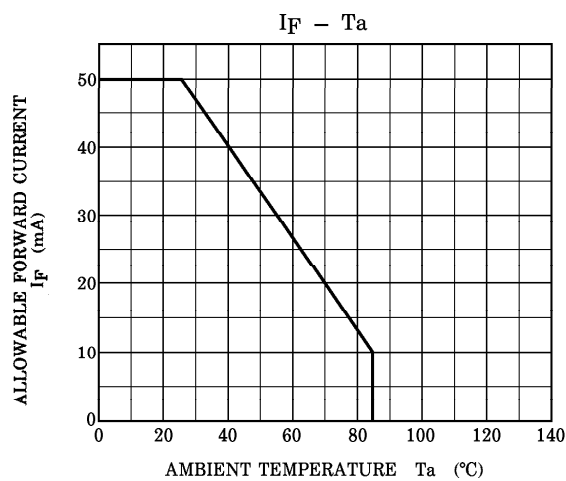


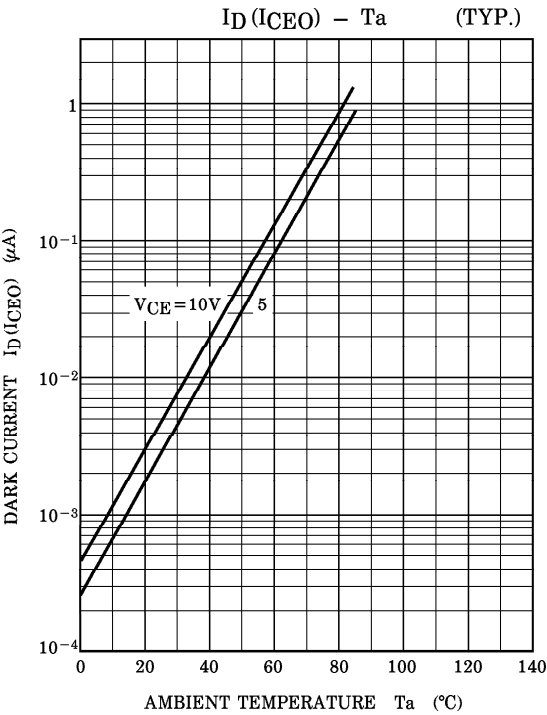
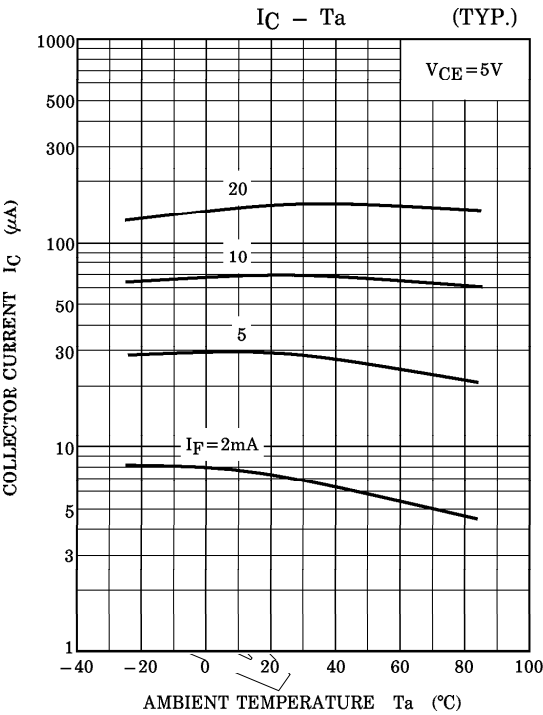
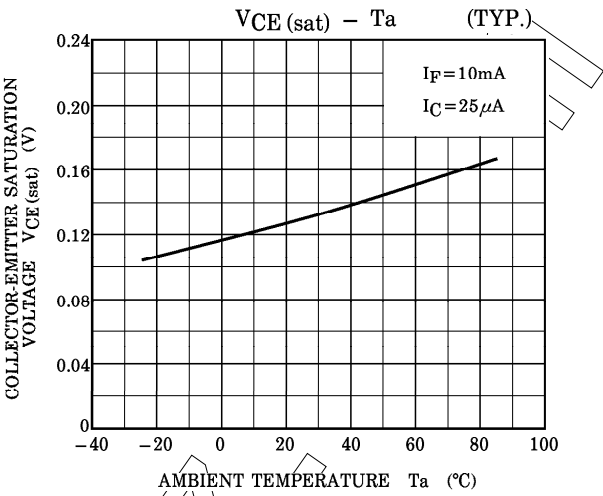
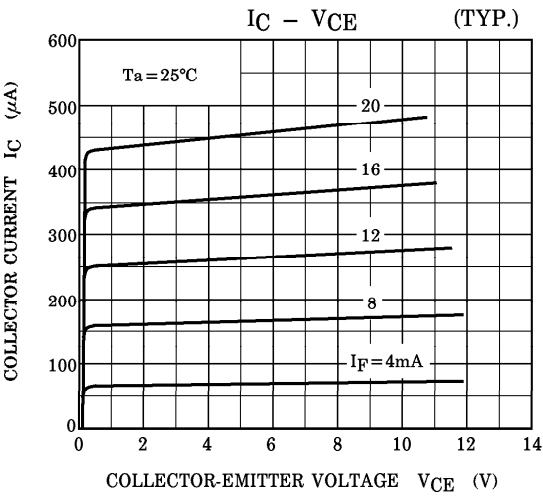
TLP908 (LB)

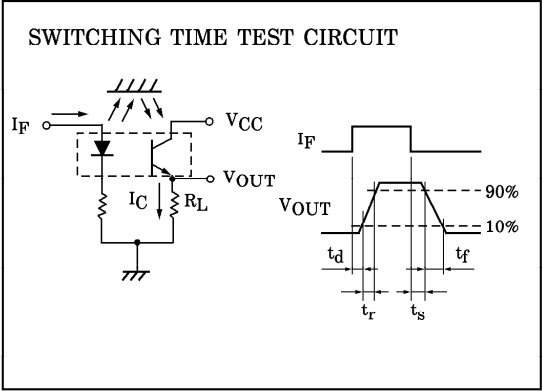
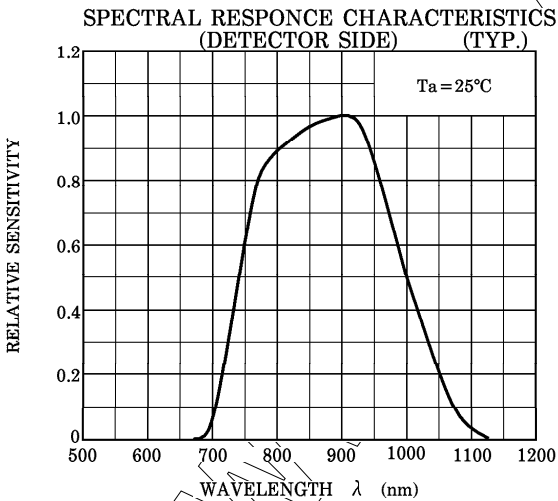
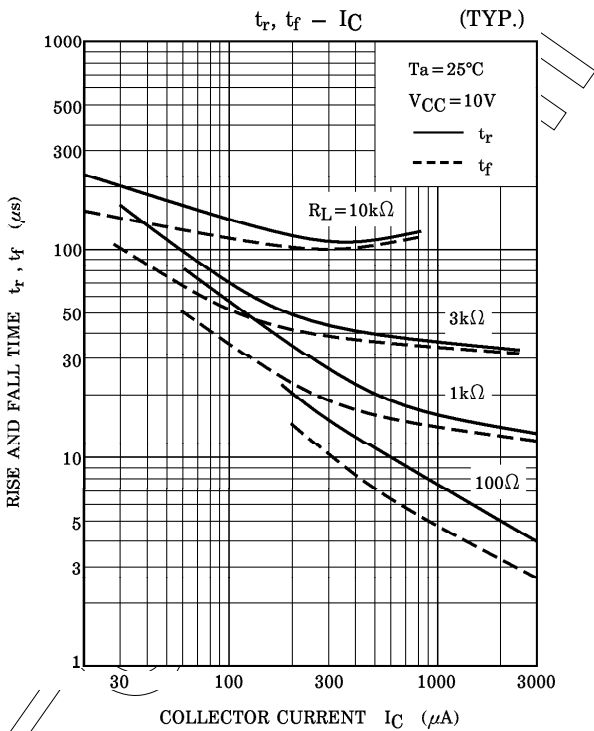
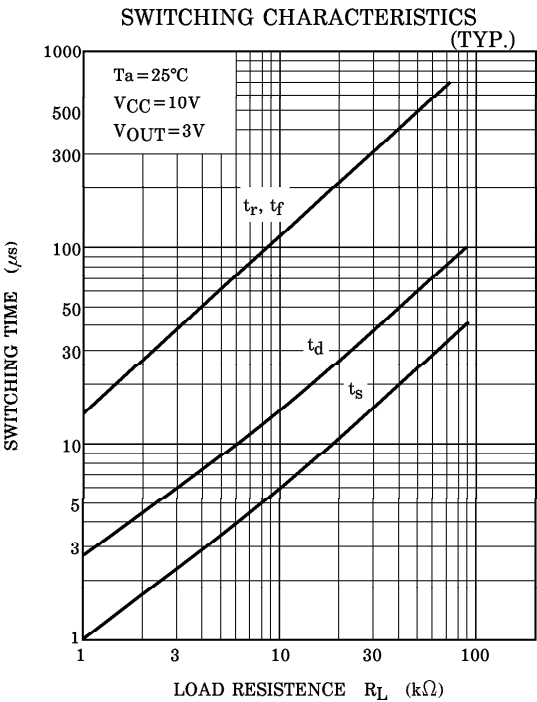
SOLDERING
AREA

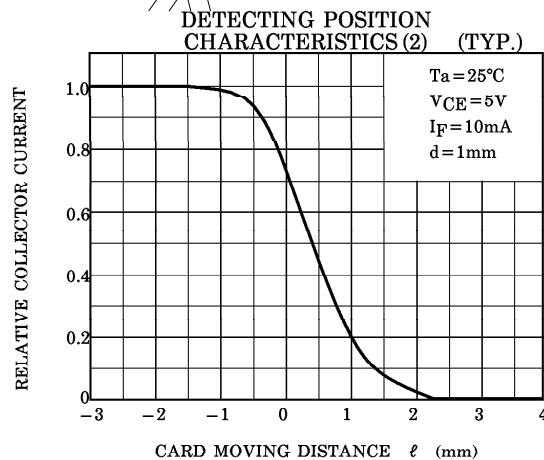
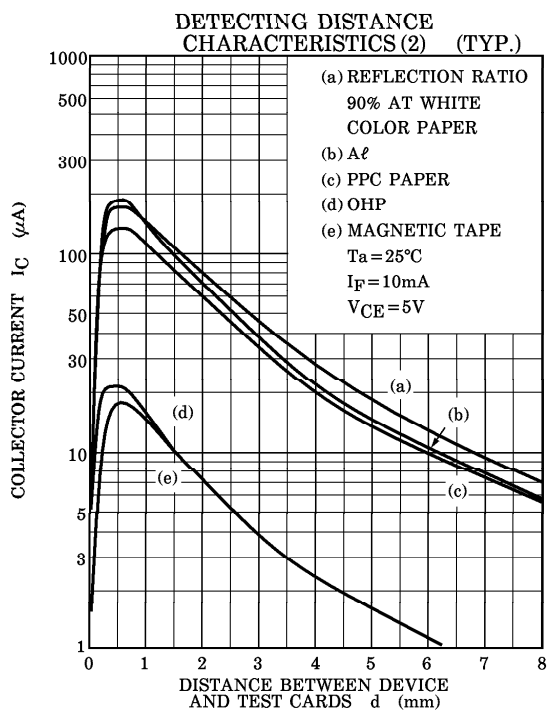
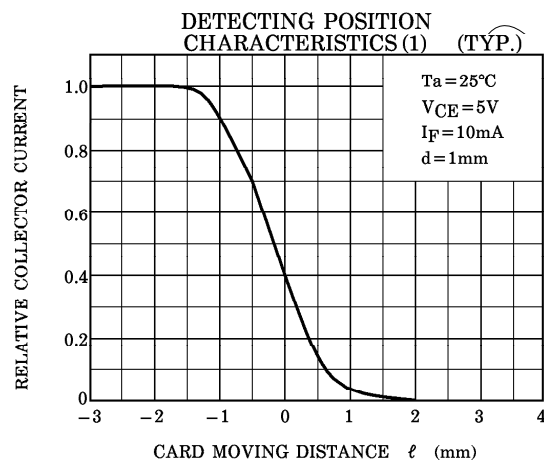
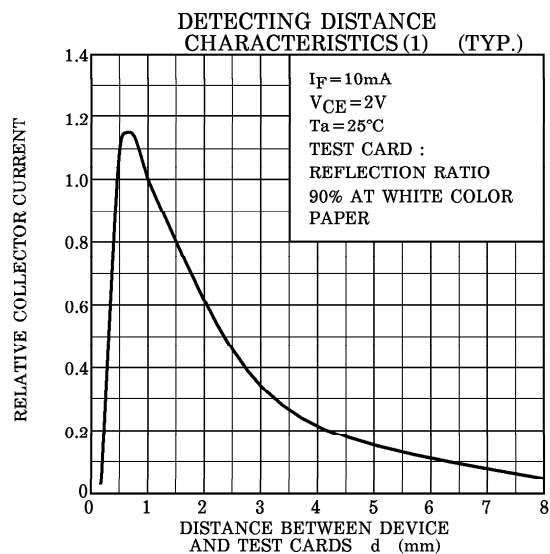
The oblique lined section of left
figure is the soldering area

- When the lead is formed, be careful not to apply forming stress to the resin main body. The read forming shall be performed before the soldering.



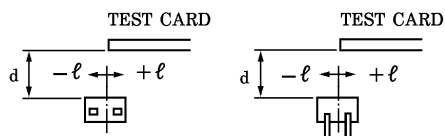




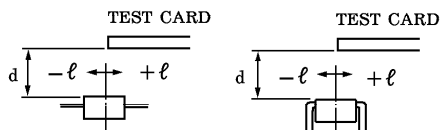


TEST CONDITION OF DETECTING POSITION CHARACTERISTICS

DETECTING POSITION (1)



DETECTING POSITION (2)



TEST CARD : REFLECTION RATIO 90% AT
 WHITE COLOR PAPER (KODAK
 NEUTRAL TEST CARD)