

TOSHIBA PHOTOREFLECTIVE SENSORS INFRARED LED + PHOTOTRANSISTOR

TLP908, TLP908(LB)

DETECTION OF START AND END MARKS ON VCR AND AUDIO TAPE

DETECTION OF VCR REEL ROTATION

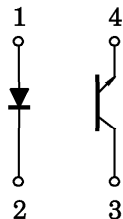
DETECTION OF INDEX WRITE-PROTECT AND PRESENCE OF DISK IN FLOPPY DISK DRIVE

TIMING DETECTION IN ELECTRONIC PRINTERS AND TYPEWRITERS

READING OF CAMERA FILM INFORMATION (DX CODES)

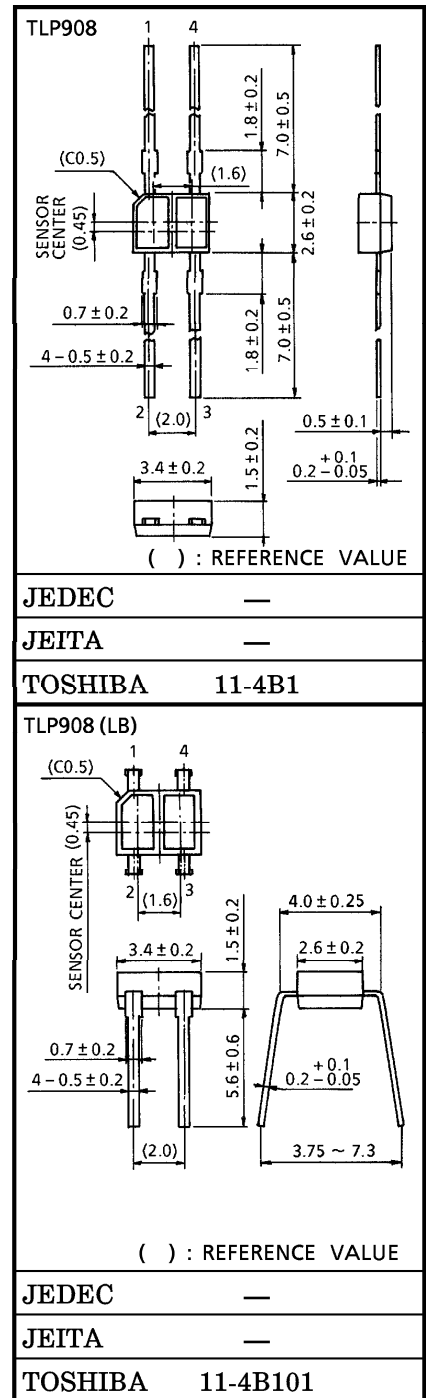
- Very small package : 2.6×3.4 mm (height 1.5 mm)
 TLP908 : Flat lead type
 TLP908 (LB) : Small DIP type
- Short detection distance : Optimum distance 0.5 mm~1.5 mm
- High sensitivity : $t_r, t_f = 10 \mu s$ (typ.)
- Black mold package impermeable to visible light

PIN CONNECTION



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

Unit : mm



Weight : 0.05g (typ.)

MAXIMUM RATINGS (Ta = 25°C)

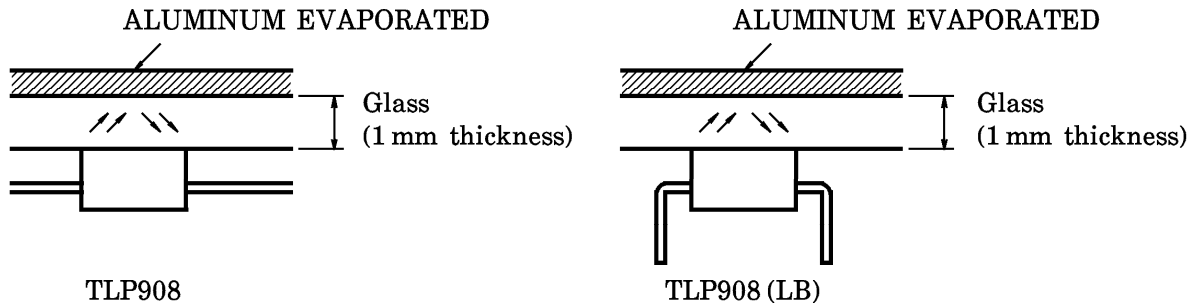
CHARACTERISTIC		SYMBOL	RATING	UNIT
LED	Forward Current	I _F	50	mA
	Forward Current Derating (Ta > 25°C)	ΔI _F / °C	-0.67	mA / °C
	Pulse Forward Current (Note 1)	I _{FP}	400	mA
	Reverse Voltage	V _R	5	V
DETECTOR	Collector-Emitter Voltage	V _{CEO}	30	V
	Emitter-Collector Voltage	V _{ECO}	5	V
	Collector 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

OPTICAL AND ELECTRICAL CHARACTERISTICS (Ta = 25°C)

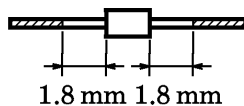
CHARACTERISTIC		SYMBOL	TEST CONDITION	Min	Typ.	Max	UNIT
LED	Forward Voltage	V _F	I _F = 10 mA	1.00	1.15	1.30	V
	Reverse Current	I _R	V _R = 5 V	—	—	10	μA
	Peak Emission Wavelength	λ _P	I _F = 10 mA	—	940	—	nm
DETECTOR	Dark Current	I _D (I _{CEO})	V _{CE} = 10 V, I _F = 0	—	—	0.1	μA
	Peak Sensitivity Wavelength	λ _P	—	—	900	—	nm
COUPLED	Current Current	I _C	V _{CE} = 5 V, I _F = 10 mA	TLP908	50	—	750
				TLP908 (R)	50	—	150
				TLP908 (O)	110	—	330
				TLP908 (LB)	50	—	750
				TLP908 (R, LB)	50	—	150
				TLP908 (O, LB)	110	—	330
	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	—	

(Note 2) : Collector current test method

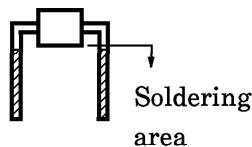


PRECAUTIONS

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



TLP908

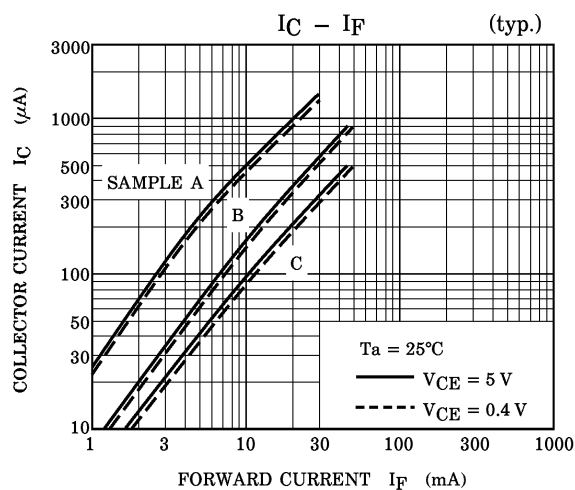
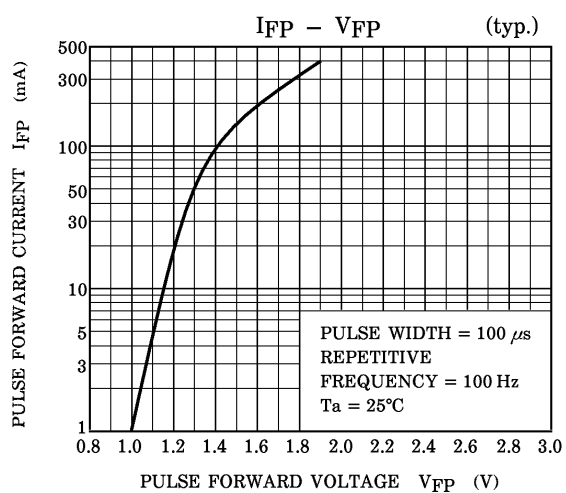
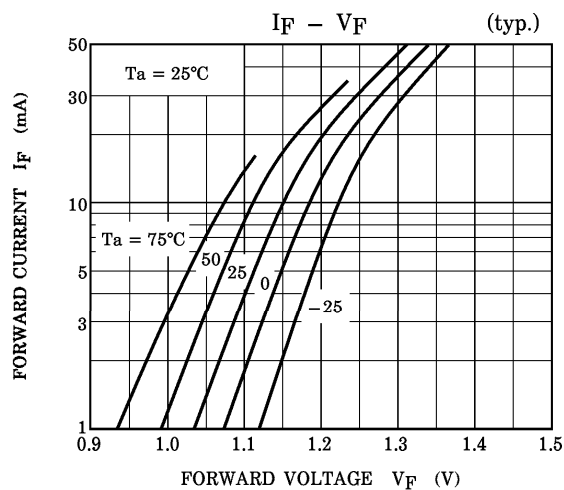
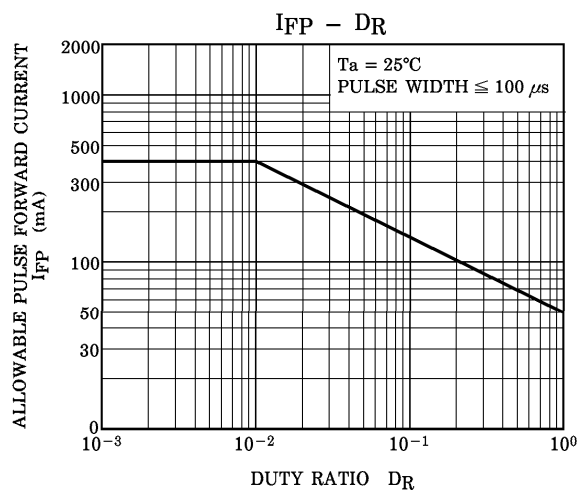
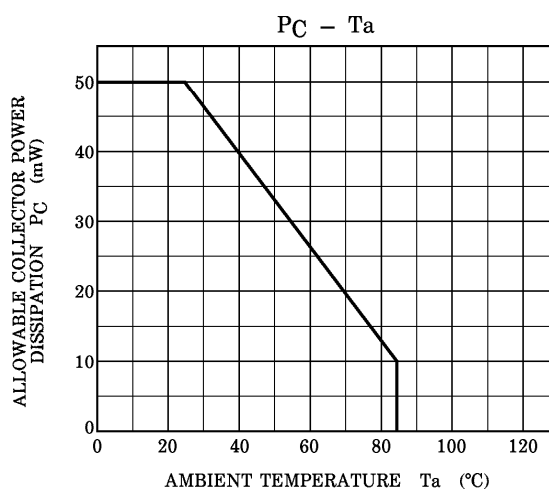
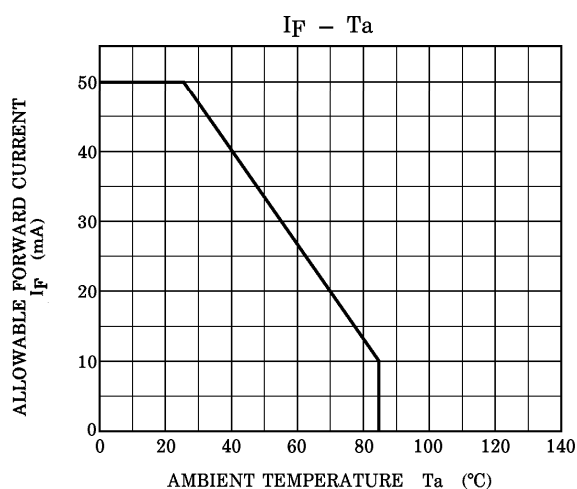


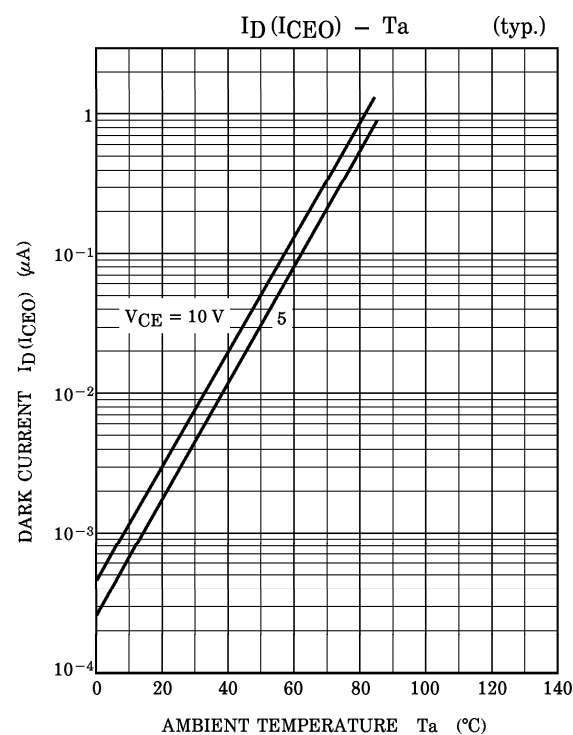
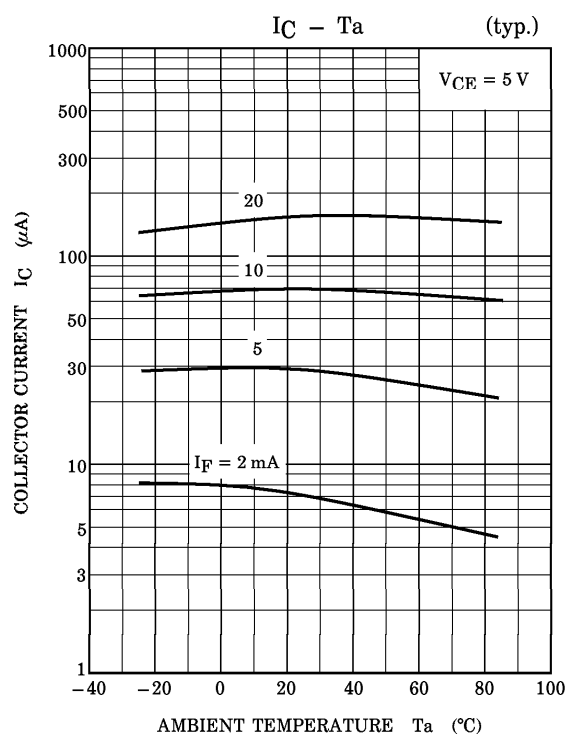
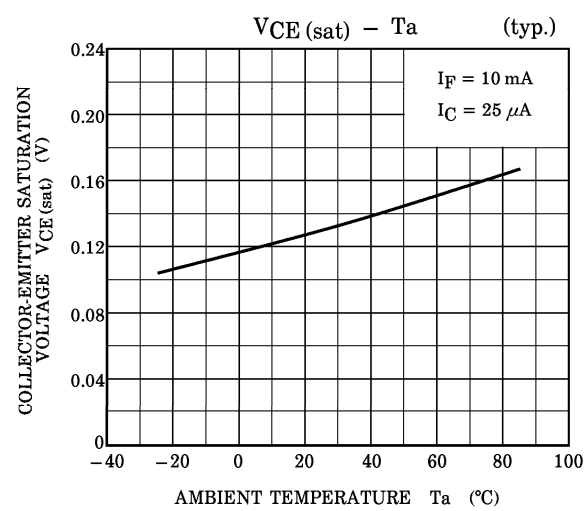
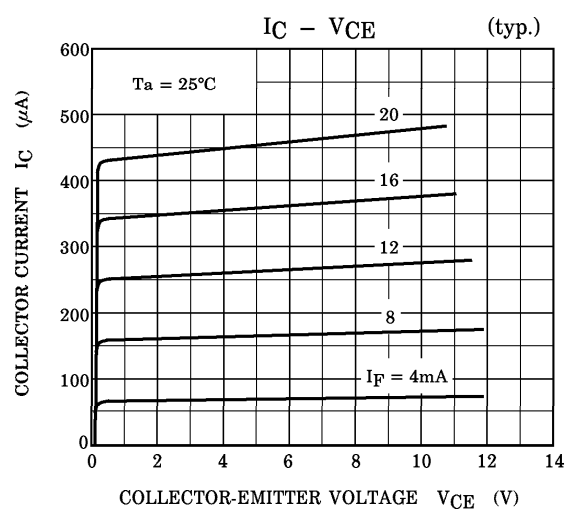
TLP908 (LB)

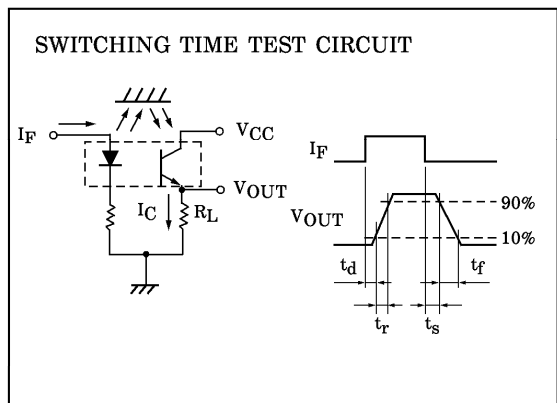
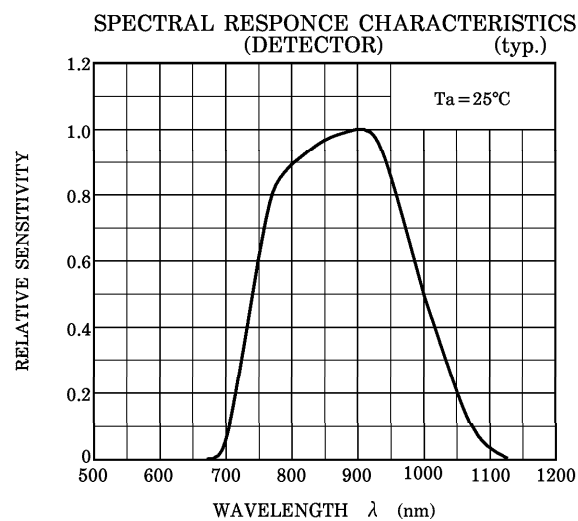
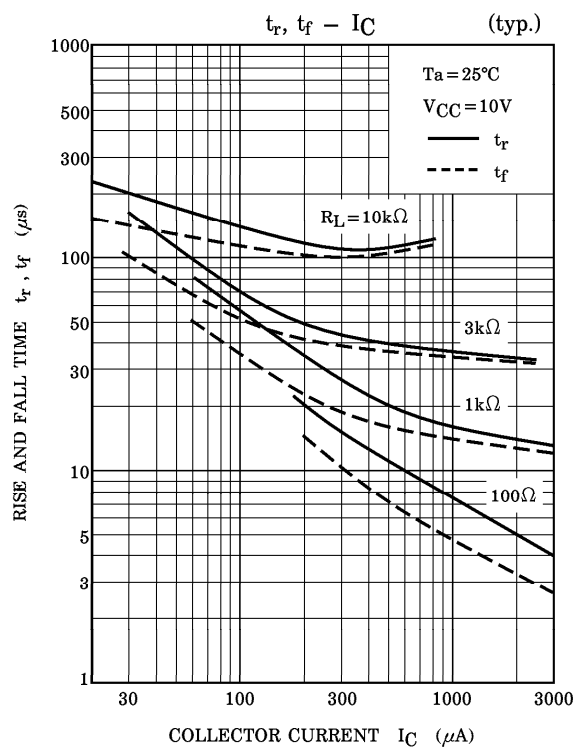
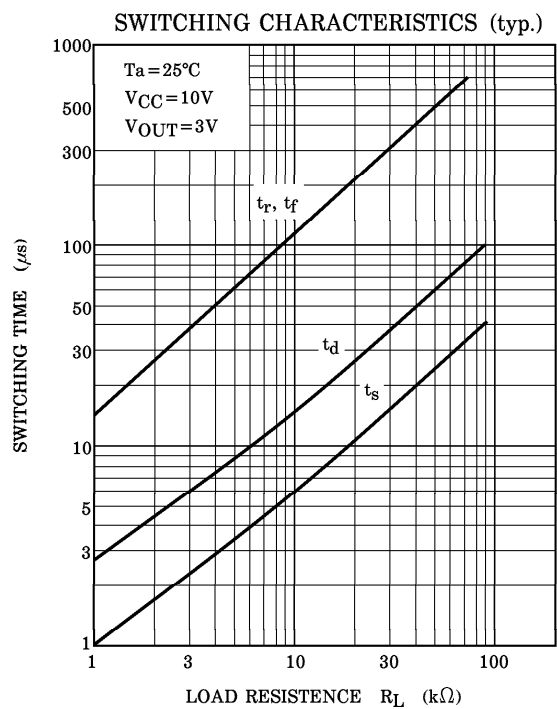
The diagonally shaded part in the diagrams on the left represent the soldering area.

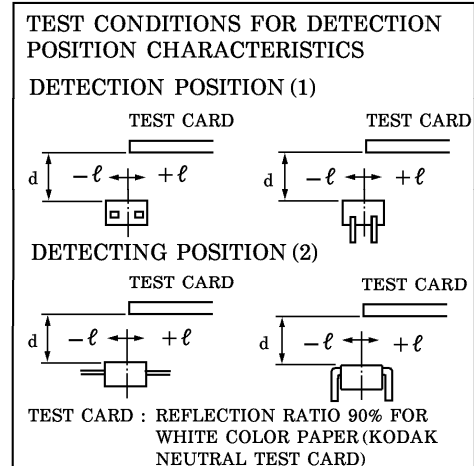
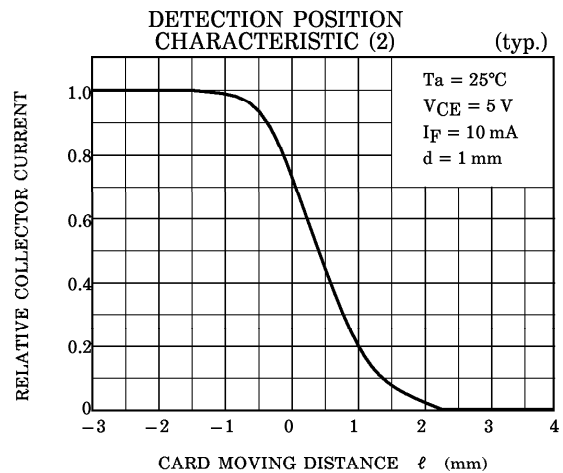
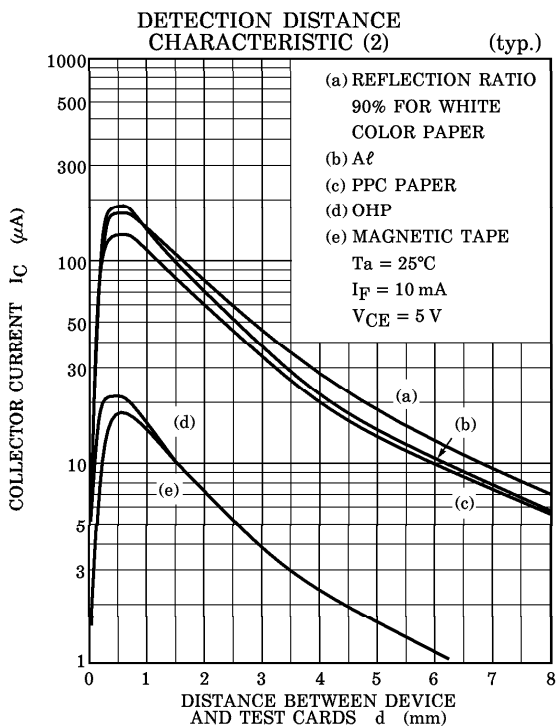
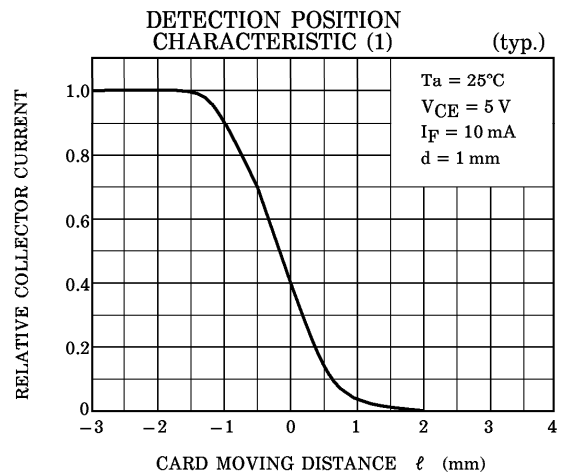
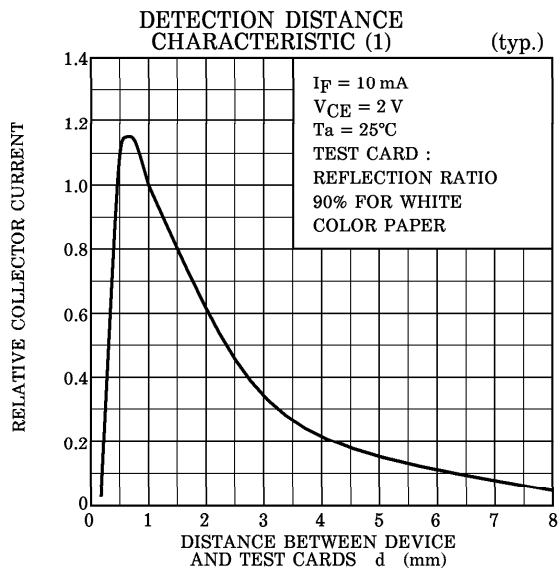
- When forming the leads, be careful not to apply stress to the main body of the device (the resin part). Soldering must be performed after the leads have been formed.
- The collector current increases over time due to current flowing in the infrared LED. The design of circuits which incorporate the device must take into account the change in collector current over time. The change in collector current is equal to the reciprocal of the change in LED infrared optical output.

$$\frac{I_C(t)}{I_C(0)} = \frac{P_O(t)}{P_O(0)}$$









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