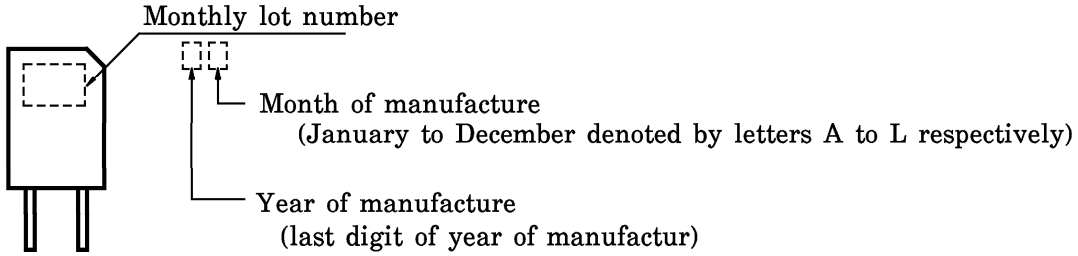
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC			SYMBOL	RATING	UNIT
LED	Forward Current		I_F	50	mA
	Forward Current Derating	25°C < Ta ≦ 85°C	ΔI_F / °C	−0.33	mA / °C
		Ta > 85°C		−2	
	Reverse Voltage		V_R	5	V
DETECTER	Collector-Emitter Voltage		V_{CEO}	35	V
	Emitter-Collector Voltage		V_{ECO}	5	V
	Collector Power Dissipation		P_C	75	mW
	Collector Power Dissipation Derating (Ta > 25°C)		ΔP_C / °C	−1	mW / °C
	Collector Current		I_C	50	mA
Operating Temperature			T_{opr}	−30~85	°C
Storage Temperature			T_{stg}	−40~100	°C
Soldering Temperature (5 s) (Note 1)			T_{sol}	260	°C

(Note 1) : At the location of 1.5 mm from the resin package bottom

MARKINGS



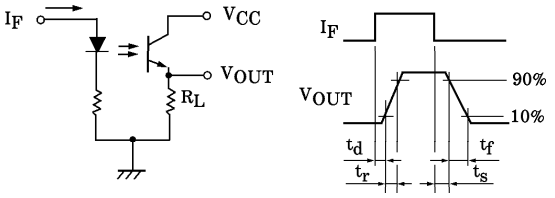
RECOMMENDED OPERATING CONDITIONS

CHARACTERISTIC	SYMBOL	Min	Typ.	Max	UNIT
Supply Voltage	V_{CC}	—	5	24	V
Forward Current	I_F	—	—	25	mA
Operating Temperature	T_{opr}	−10	—	75	°C

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} = 24 V, I_F = 0	—	—	0.1	μA
	Peak Sensitivity Wavelength	λ_P		—	870	—	nm
COUPLED	Current Transfer Ratio	I_C / I_F	V_{CE} = 2 V, I_F = 10 mA	5	—	100	%
	Collector-Emitter Saturation Voltage	$V_{CE\ (sat)}$	I_F = 20 mA, I_C = 0.5 mA	—	0.1	0.35	V
	Rise Time	t_r	V_{CC} = 5 V, I_C = 1 mA, R_L = 1 kΩ (Note 2)	—	15	50	μs
	Fall Time	t_f		—	15	50	

(Note 2) : Switching time measurement circuit and waveform



PRECAUTIONS

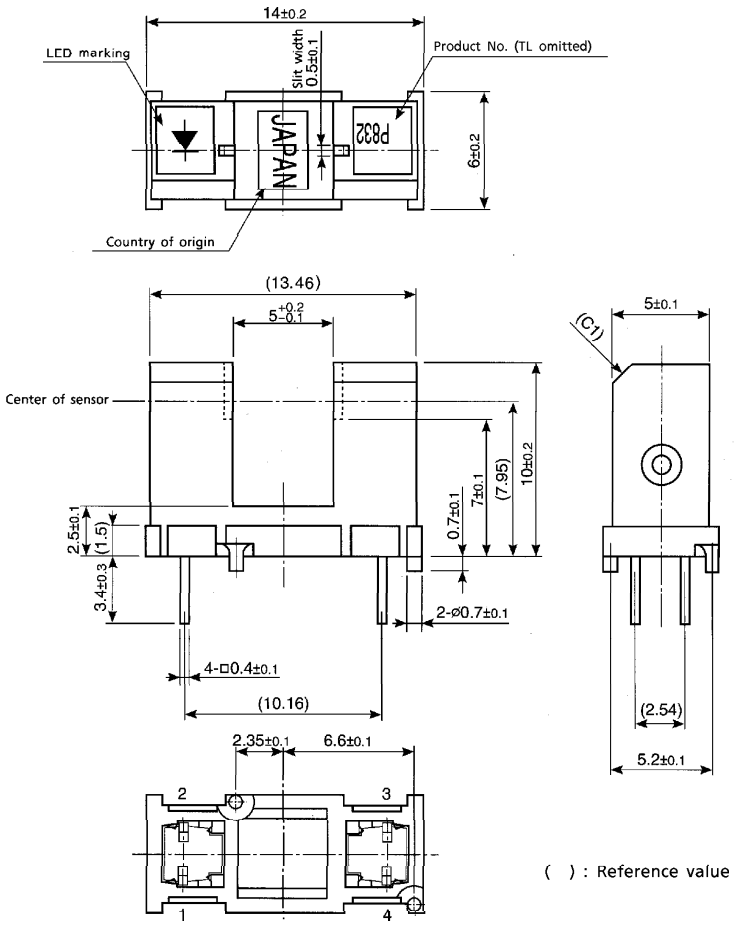
1. When removing flux with chemicals after soldering, clean only the soldered part of the leads. Do not immerse the entire package in the cleaning solvent. Chemical residue on the LED emitter or the phototransistor may adversely affect the optical characteristics of the device and may drastically reduce the conversion efficiency.
2. Care must taken in relation to the environment in which the device is to be installed. Oil or chemicals may cause the package to melt or crack.
3. Mount the device on a level surface.
4. Keep the device away from external light. Although the phototransistor is of low optical sensitivity, the device may malfunction if external light with a wavelength of 700 nm or more is allowed to impinge on it.
5. Conversion efficiency falls over time due to the current which flows in the infrared LED. When designing a circuit, take into account this change in conversion efficiency over time. The ratio of fluctuation in conversion efficiency to fluctuation in infrared LED optical output is 1 : 1.

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

PACKAGE DIMENSIONS

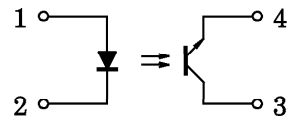
11-14F1

Unit : mm



Weight : 0.58 g (typ.)

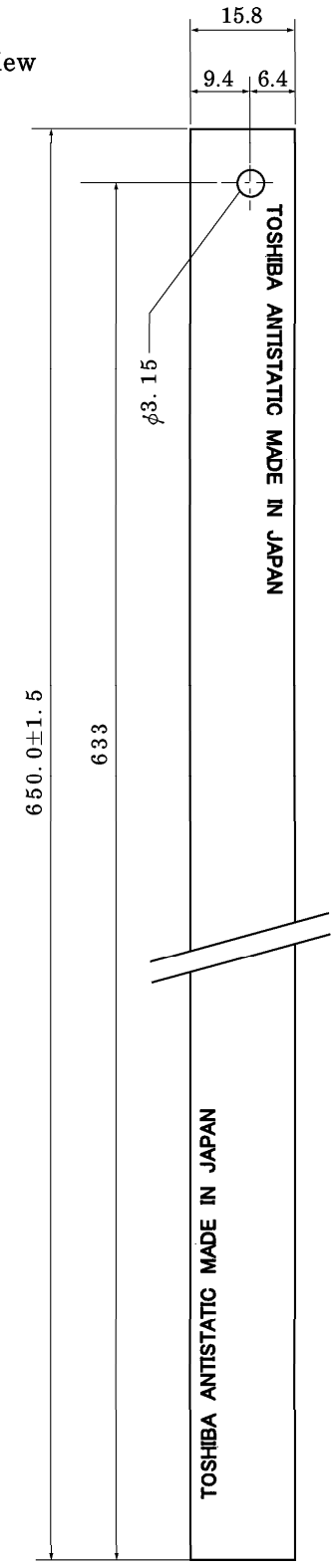
PIN CONNECTION



1. Anode
2. Cathode
3. Collector
4. Emitter

Stick specification of TLP832

Top view

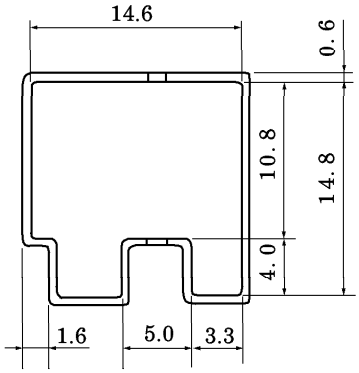


Unit : mm

Unless otherwise specified, tolerance : ±0.3 mm

Material : Polyvinyl chloride (PVC)

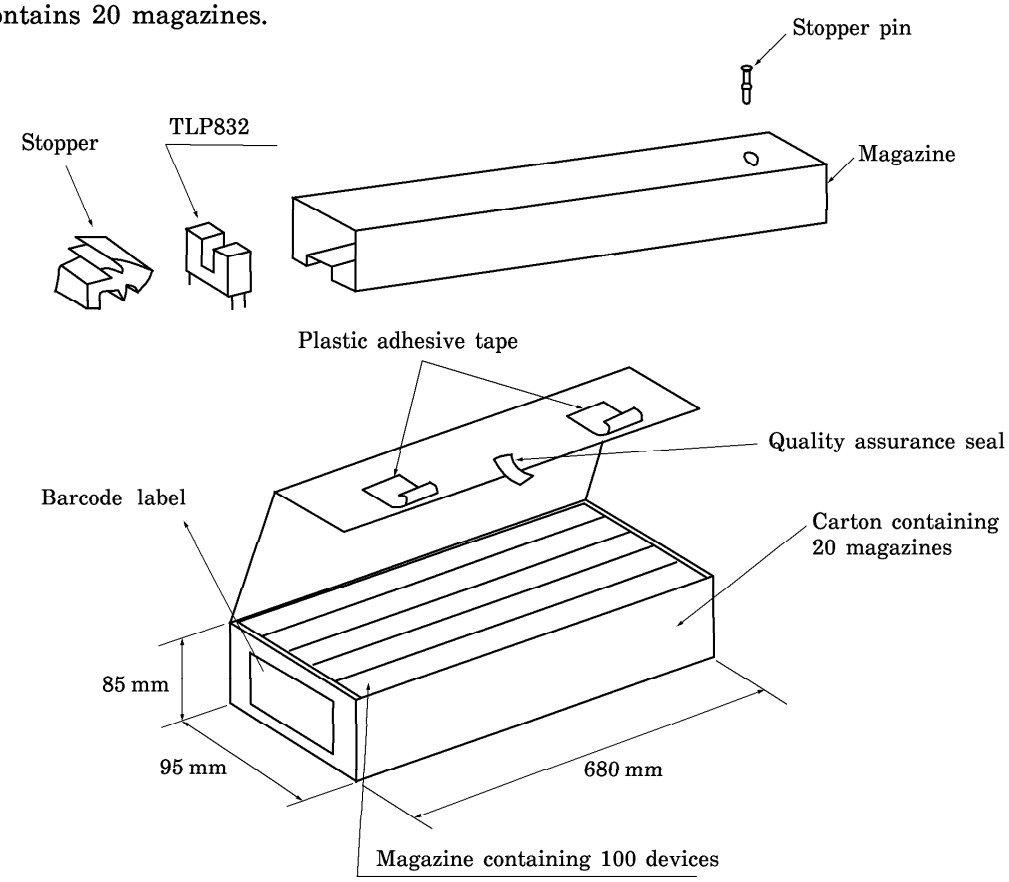
Cross section



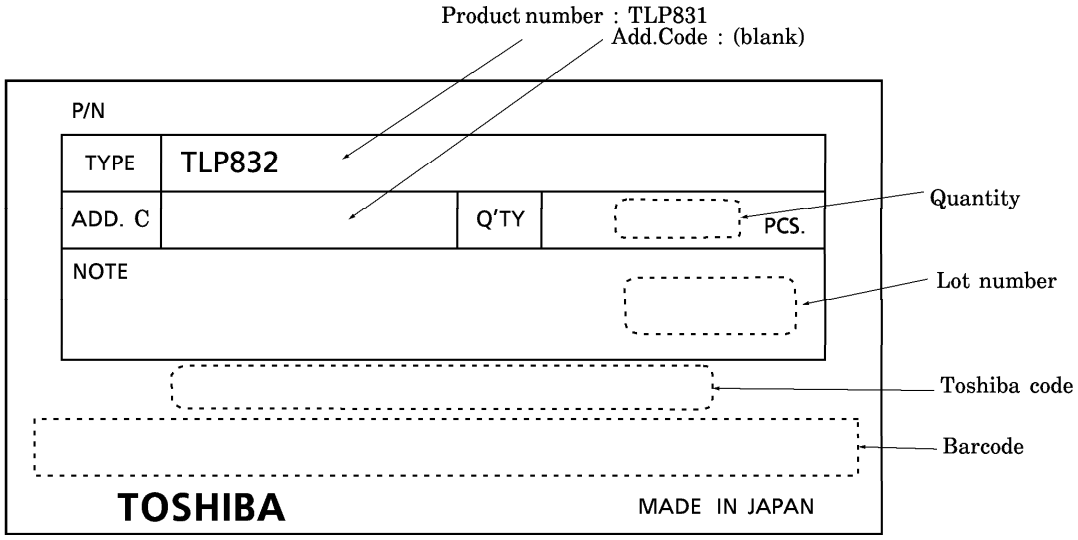
(Note) : Marking color is red.

○ Packing format

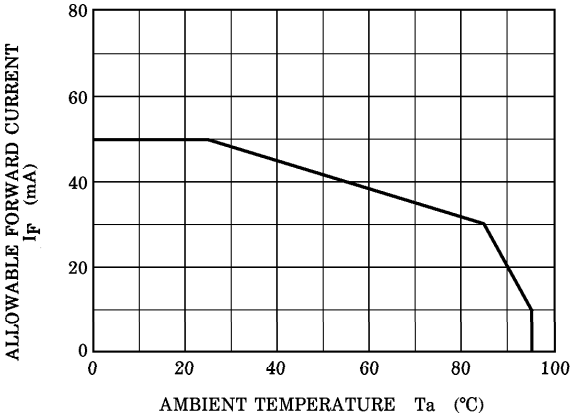
Pack 100 devices are packed in a magazine and put it in a carton.
The carton contains 20 magazines.



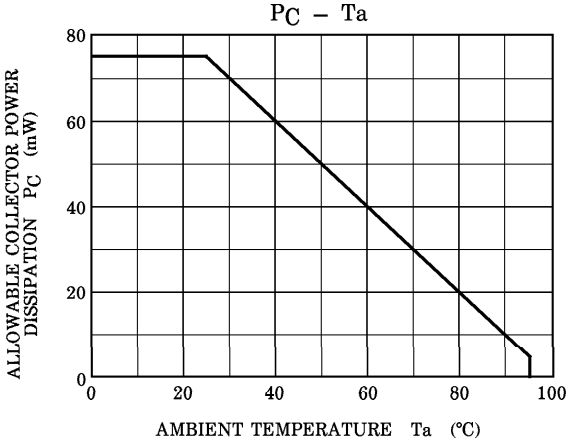
○ Label



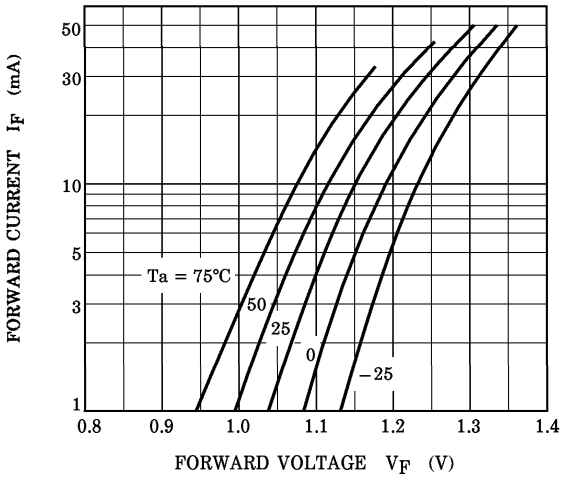
I_F – Ta



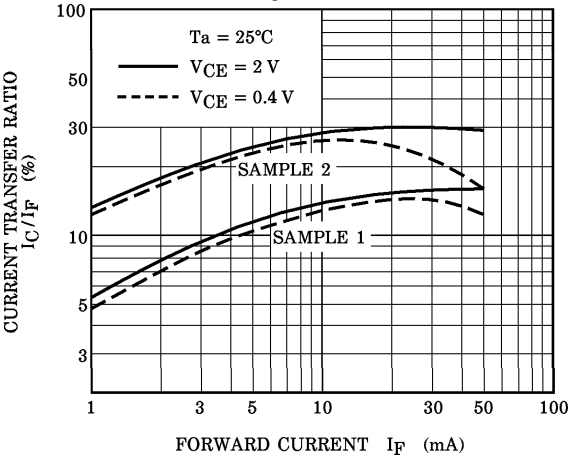
P_C – Ta



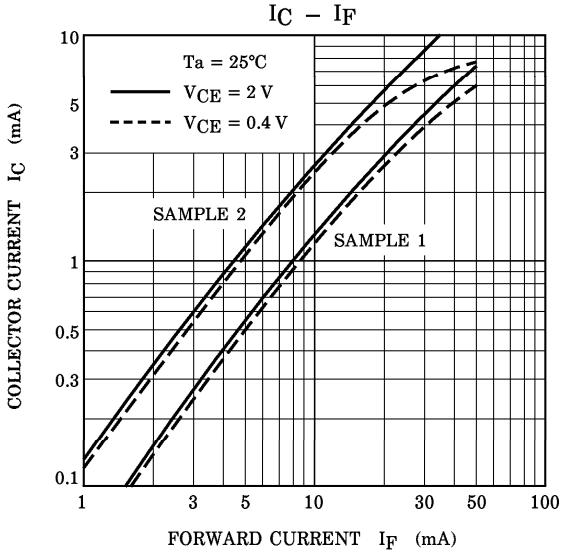
I_F – V_F (typ.)



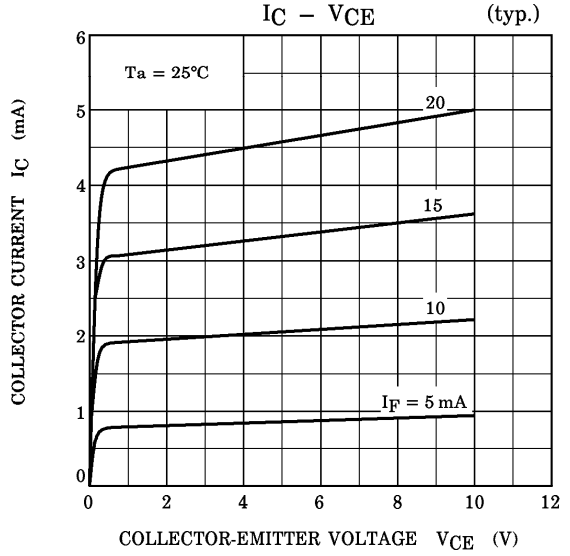
I_C / I_F – I_F



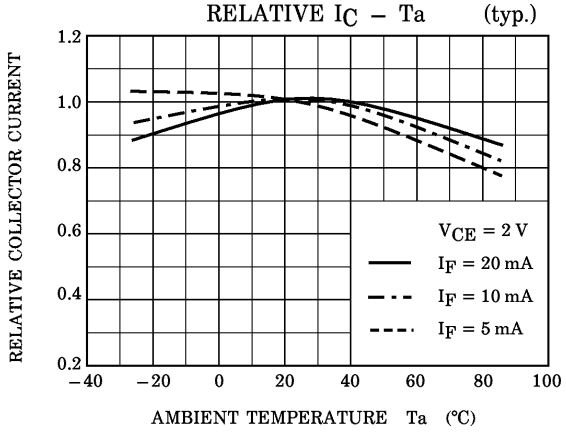
I_C – I_F



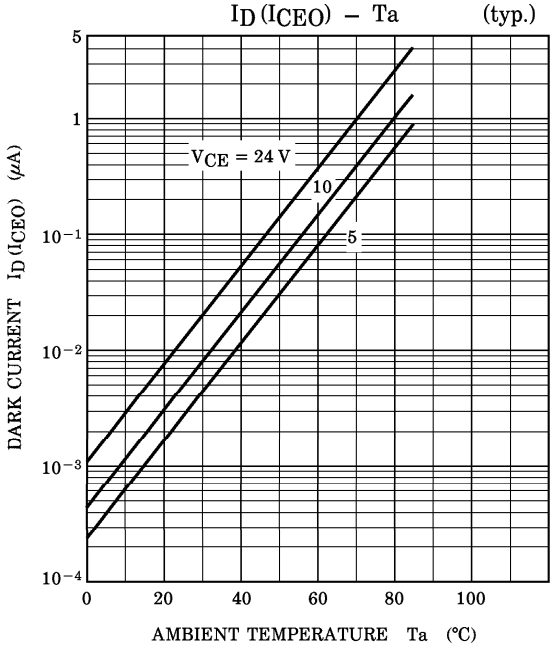
I_C – V_{CE} (typ.)



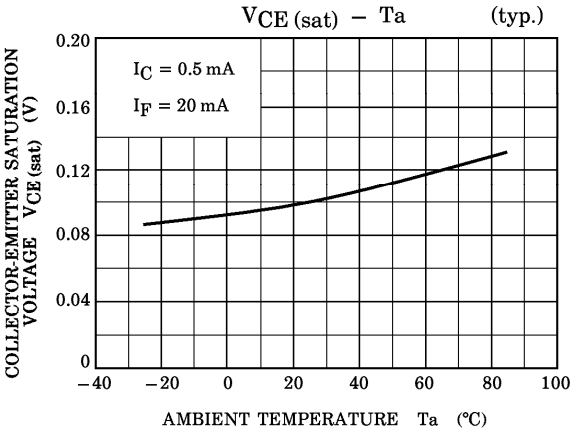
RELATIVE I_C – Ta (typ.)



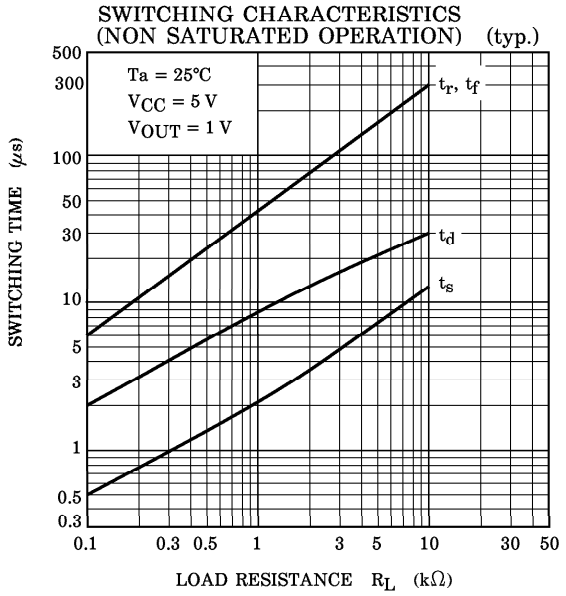
I_D (I_{CEO}) – Ta (typ.)



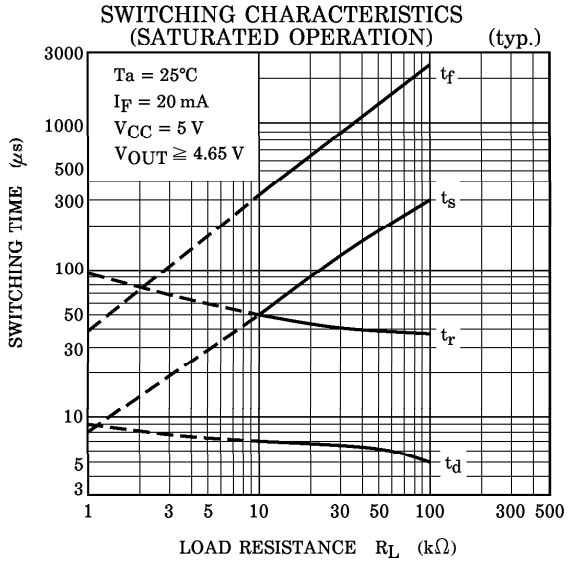
$V_{CE\,(sat)}$ – Ta (typ.)

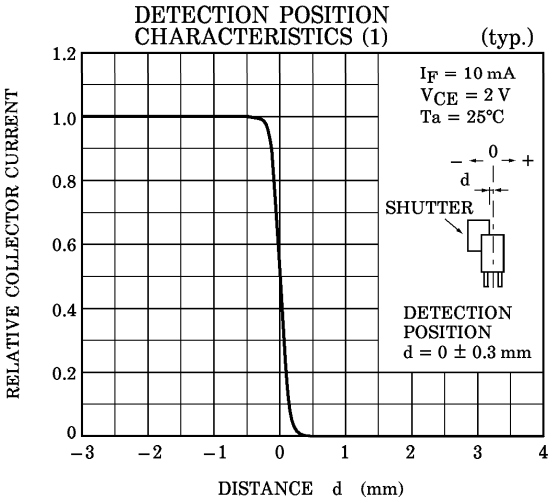


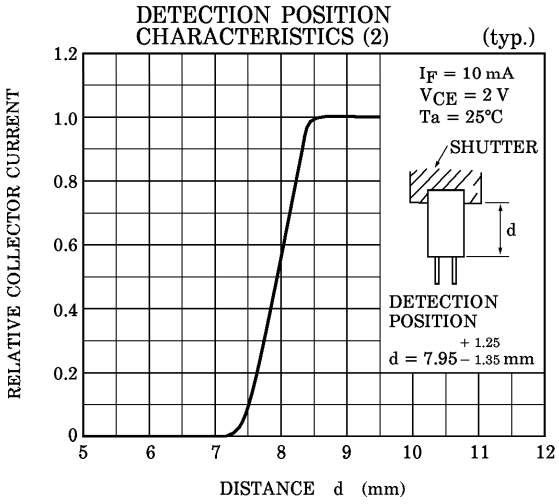
SWITCHING CHARACTERISTICS (NON SATURATED OPERATION) (typ.)



SWITCHING CHARACTERISTICS (SATURATED OPERATION) (typ.)

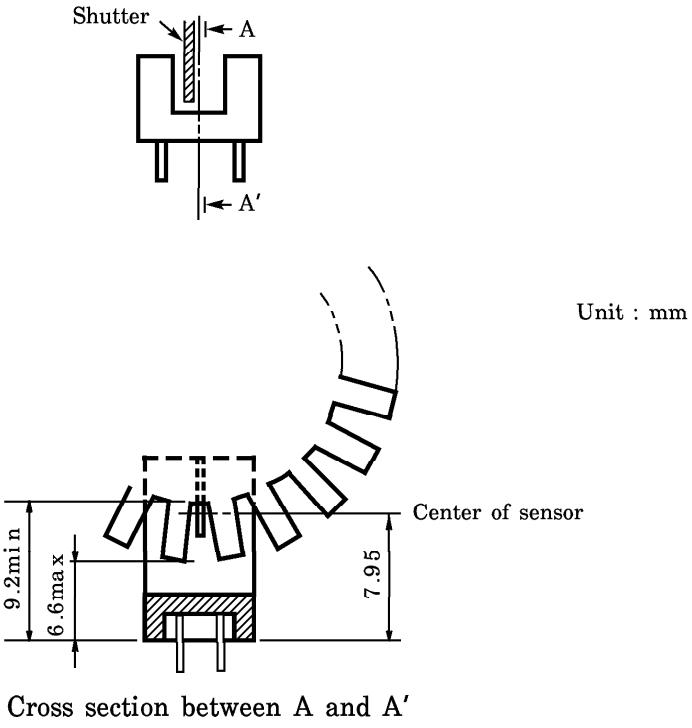






RELATIVE POSITIONING OF SHUTTER AND DEVICE

For normal operation position the shutter and the device as shown in the figure below. By considering the device's detection direction characteristic and switching time, determine the shutter slit width and pitch.



Cross section between A and A′

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000707EAC

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