

KR642,643

Description

Model **KR642/643** consists of an Infra Red LED and a Photo IC(Digital Output), and Model KR643 type has one piece seamless plastic housing.

Feature

- Direct connection to TTL, CMOS
- For paper dust: Visible Light cut filter.(KR643)
- Long focus range.(3 ~ 7mm)
- The other model;
Phototransistor out put type ... **KR640, KR641**

Application

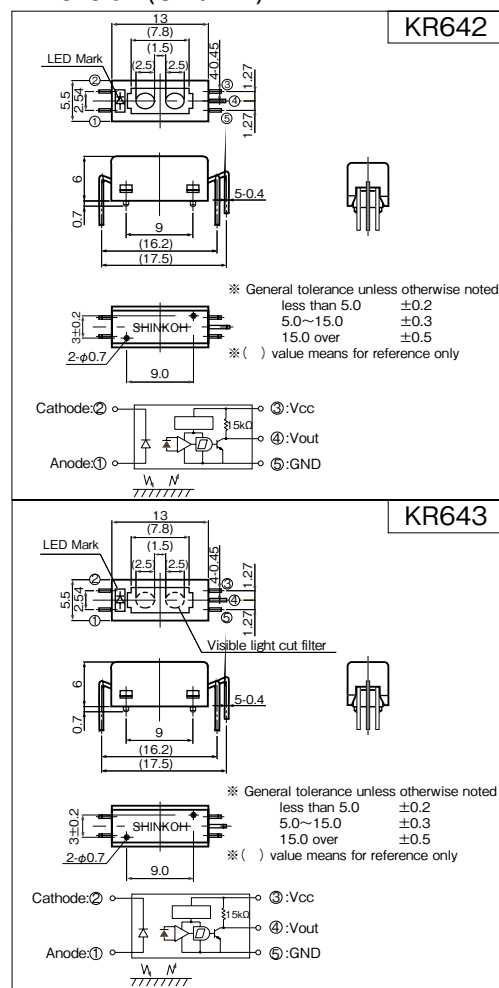
- Paper detection/Timing detection in Copying machine, Printer, and Facsimile.
- Object passing in Auto vender and Ticket vending machine.

Absolute Maximum Ratings

[Ta=25°C Unless otherwise noted]

Item		Symbol	Rating	Units
Emitter	Forward Current	I_F	50	mA
	Reverse Voltage	V_R	4	V
Detector	Supply Voltage	V_{CC}	17	V
	Output Current	I_{OL}	16	mA
	Power Dissipation	P_C	175	mW
Operating Temperature		T_{op}	-25 ~ +75	°C
Storage Temperature		T_{stg}	-30 ~ +80	°C
Soldering Temperature ^{※1}		T_{sol}	260	°C

Dimension (Unit:mm)



<Operation notice>

We recommend to use min. 0.01 μ F bypass condenser between V_{CC} and GND.

- ※ 1. Soldering condition 5sec. At 1mm over from body.
※ 2. Object : 90% reflective paper

Electro-Optical Characteristics [V_{CC}=5V, Ta=25°C Unless otherwise noted]

Item		Symbol	Condition	min.	typ.	max.	Units
Emitter	Forward Voltage	V_F	$I_F=20mA$	—	1.2	1.5	V
	Reverse Current	I_R	$V_R=3V$	—	—	10	μA
Detector	Low Level Output Voltage	V_{OL}	$V_{CC}=5V$ Non-detecting	—	0.15	0.4	V
	High Level Output Voltage	V_{OH}	$V_{CC}=5V, d=5mm$ Object detecting ^{※2}	$V_{CC} \times 0.9$	—	—	V
Coupled	Threshold Output Current	I_{FLH}	Low $\rightarrow$ High, $V_{CC}=5V, d=5mm$ ^{※2}	—	10	20	mA
	Hysteresis		$V_{CC}=5V$	—	0.65	—	—
	Response Time	Rise	$V_{CC}=5V, I_F=15mA, R_L=280 \Omega$ $d=5mm$	—	0.5	—	μsec
		Fall		—	0.5	—	μsec

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Note: Operation never exceeds each value of Absolute Maximum Ratings.

Forward Current vs. Ambient Temperature

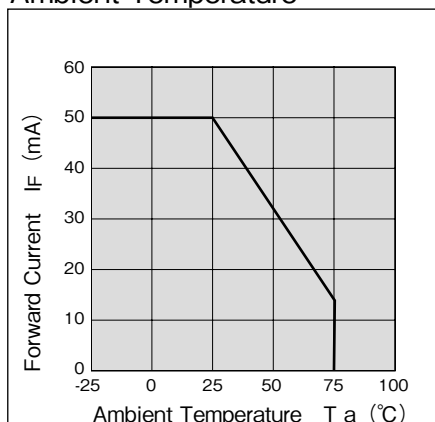
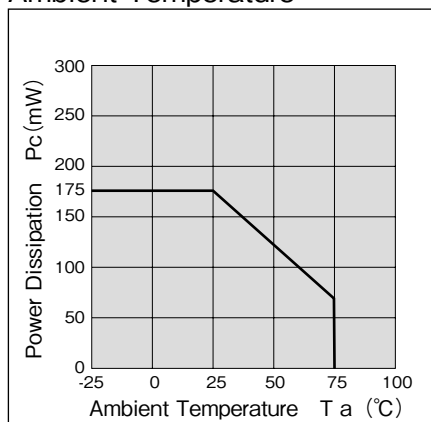
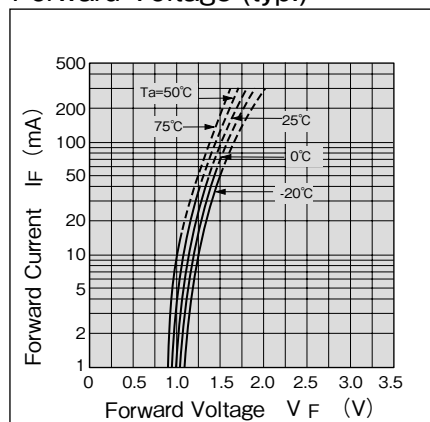


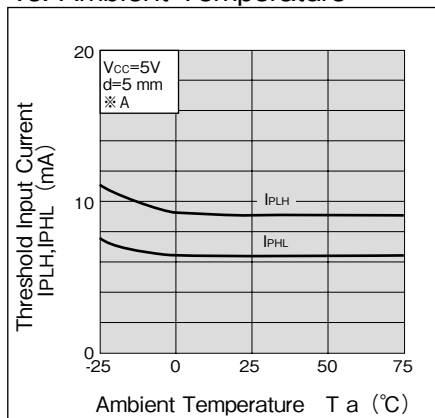
Photo IC Power Dissipation vs. Ambient Temperature



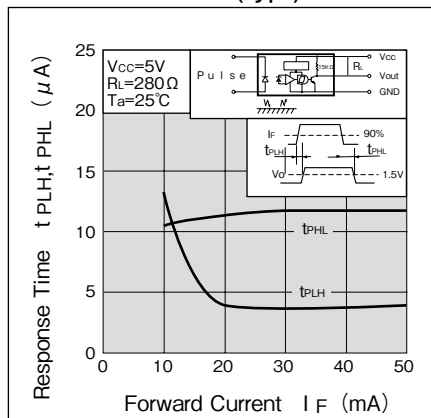
Forward Current vs. Forward Voltage (typ.)



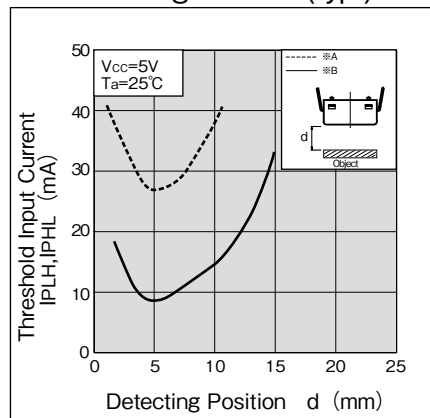
Threshold Input Current vs. Ambient Temperature



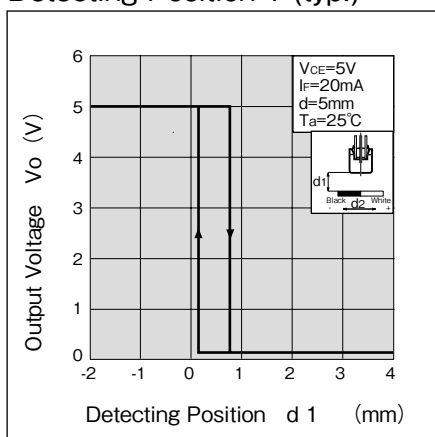
Response Time vs. Forward Current (typ.)



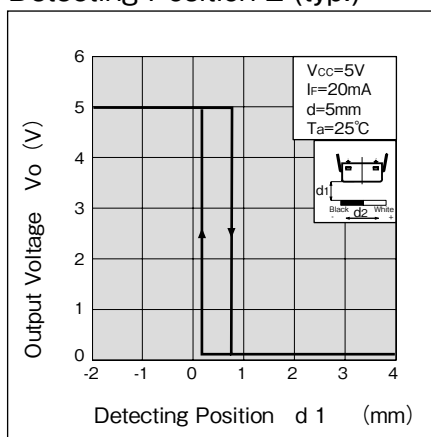
Threshold Input Current vs. Detecting Position (typ.)



Output Voltage vs. Detecting Position 1 (typ.)



Output Voltage vs. Detecting Position 2 (typ.)



※A 90% Reflective Paper
※B 17% Kodak Gray Card

Recommended operating Conditions [$T_a=25^\circ\text{C}$]

Item	Symbol	Recommended value	Remarks
Supply voltage	VCC	4.5~17V	
Output current	IoL	max.16mA	
LED current	IF	20mA	VCC=4.5~17V 90% Reflective paper

- A Custom designed package is available on request.
- Specification are subject to change without notice.

05.10-1B

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