

KR1202

Red LED Type

Description

Model **KR1202** has a Red LED and a Photo transistor with cylindrical lens on emitter and detector. The range of collector current can be specified on your requirement. We can arrange other wavelength of emitter, for example, 470nm, 555nm, 585nm, 660nm, 735nm, 880nm. This model can be installed on P.C.B.

Feature

- Other light source is available for Color sensor as **KR121X**.
- Custom wire length or connector model.(Option)

Application

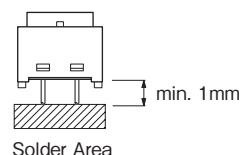
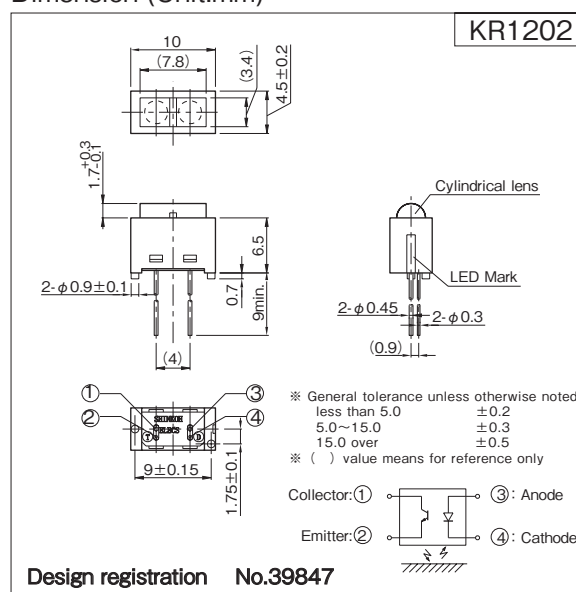
- Mark sensor of Thermal paper, OMR and OCR.
- Paper absence and Paper edge detection on Copying machine, Printer, and Facsimile.
- Paper detection/Size detection in Copying machine and Facsimile.
- Scanning for Color-discrimination and Pattern.

Absolute Maximum Ratings

[Ta=25°C Unless otherwise noted]

Item		Symbol	Rating	Units
Emitter	Forward Current	I_F	40	mA
	Pulse Forward Current*1	I_{FP}	0.4	A
	Reverse Voltage	V_R	5	V
	Power Dissipation	P	75	mW
Detector	Collector-Emitter Voltage	V_{CEO}	20	V
	Emitter-Collector Voltage	V_{ECO}	5	V
	Collector Current	I_C	20	mA
	Collector Dissipation	P_C	75	mW
Operating Temperature		T_{opr}	-20 ~ +85	°C
Storage Temperature		T_{stg}	-30 ~ +85	°C
Soldering Temperature*2		T_{sol}	260	°C

Dimension (Unit:mm)



- * 1. Pulse width $t_w \leq 100 \mu \text{ sec}$ Duty ratio=0.01
- * 2. Soldering condition 5sec. At 1mm over from body.
- * 3. 90% reflective paper $d=4\text{mm}$
- * 4. No Object, in Dark

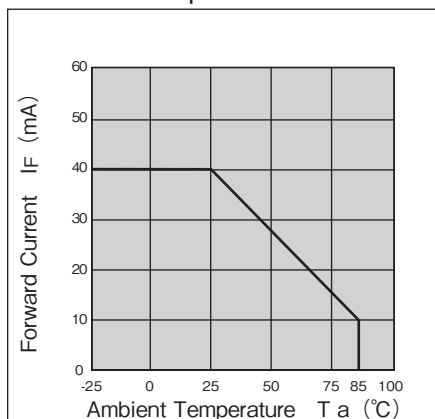
Electro-Optical Characteristics [Ta=25°C Unless otherwise noted]

Item		Symbol	Condition	min.	typ.	max.	Units
Emitter	Forward Voltage	V_F	$I_F=20\text{mA}$	—	1.8	2.3	V
	Reverse Current	I_R	$V_R=5\text{V}$	—	—	10	$\mu \text{ A}$
	Peak Wavelength	λ_p	$I_F=20\text{mA}$	—	660	—	nm
Detector	Dark Current	I_{CEO}	$V_{CE}=20\text{V}$, 0 lux	—	1	200	n A
Coupled	Light Current*3	I_C	$V_{CE}=5\text{V}$, $I_F=20\text{mA}$	150	—	—	$\mu \text{ A}$
	Leak Current*4	I_{LEAK}	$V_{CE}=5\text{V}$, $I_F=20\text{mA}$	—	—	35	$\mu \text{ A}$
	Response Time	Rise	$V_{CC}=5\text{V}$, $I_C=200 \mu \text{ A}$, $R_L=1\text{k} \Omega$, $d=4\text{mm}$	—	30	—	$\mu \text{ sec}$
		Fall		—	35	—	$\mu \text{ sec}$

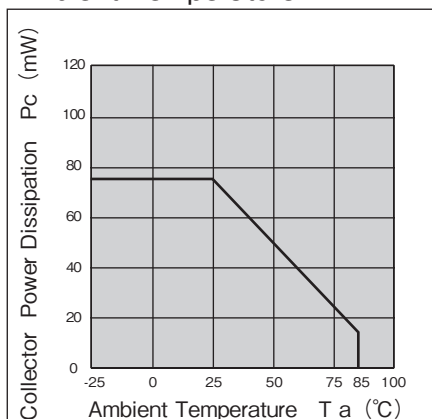
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Note: Operation never exceeds each value of Absolute Maximum Ratings.

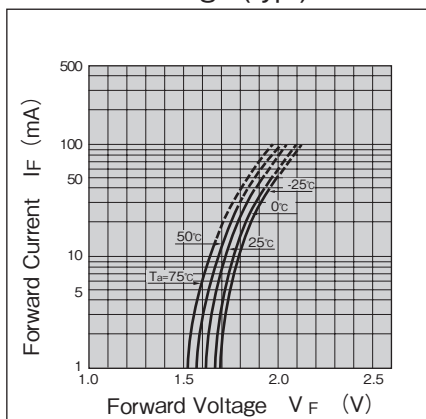
Forward Current vs. Ambient Temperature



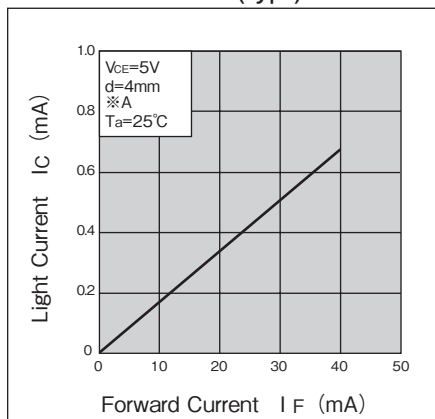
Collector Power Dissipation vs. Ambient Temperature



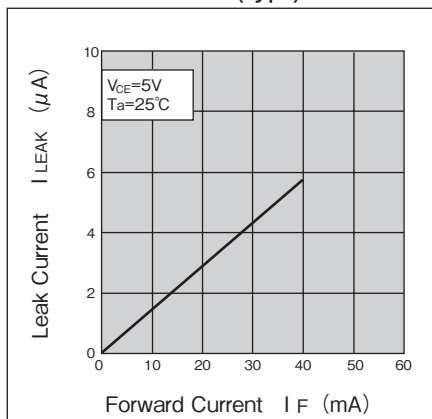
Forward Current vs. Forward Voltage (typ.)



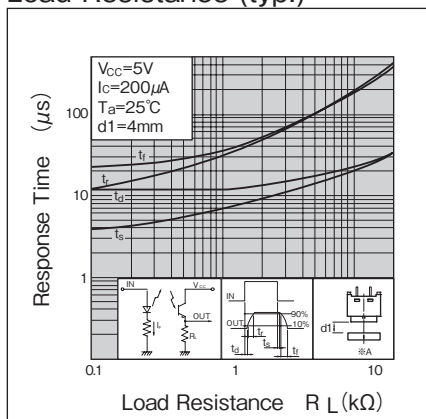
Light Current vs. Forward Current (typ.)



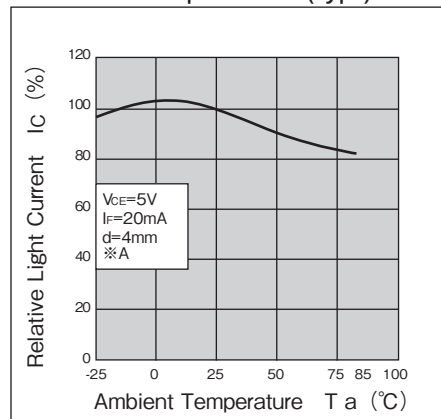
Leak Current vs. Forward Current (typ.)



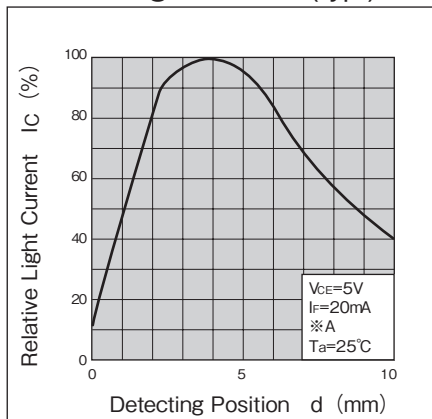
Response Time vs. Load Resistance (typ.)



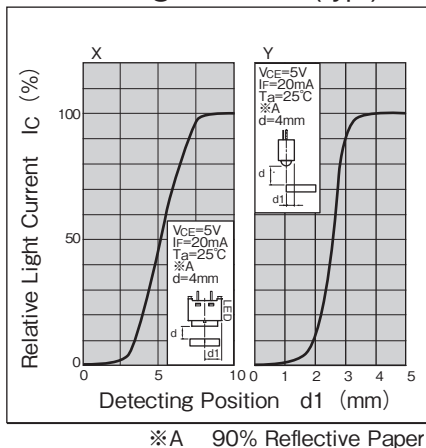
Relative Light Current vs. Ambient Temperature (typ.)



Detecting Position vs. Relative Light Current (typ.)



Detecting Position vs. Relative Light Current (typ.)



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

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