Photo Reflector

Tentative

KR1211

RGB - C/W Type

Description

Model **KR1211** series consist of Blue or Green or Red LED and a Photo transistor reflection Photo sensor, and has plastic housing. It is possible to detect high-sensitively by using light's three primary colors.

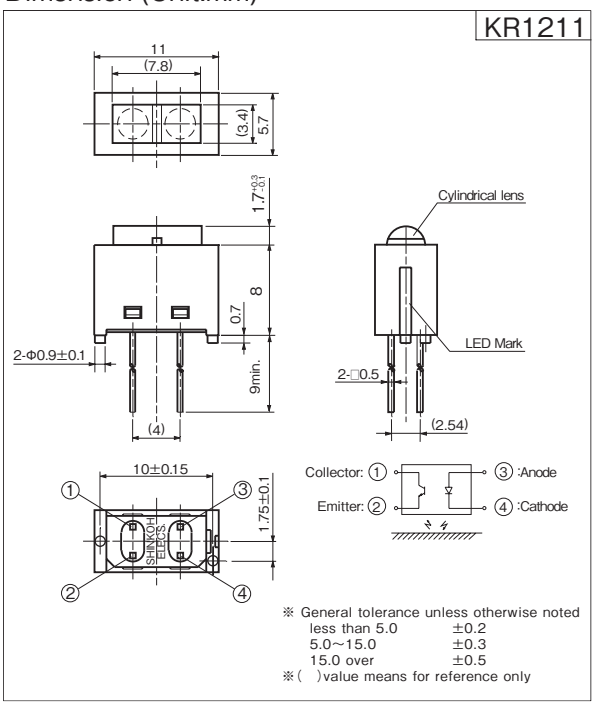
Feature

- Blue, Green, Red, Infra Red(IR) LED.
- Compact Package.
- White LED Type.

Application

- Scanning for Color-discrimination.
- Scanning for Bill Pattern.
- Object detection of Auto Vending Machine.

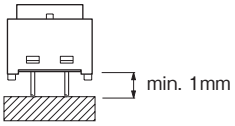
Dimension (Unit:mm)



Absolute Maximum Ratings [Ta=25℃ Unless otherwise noted]

Item		Symbol	Rating				Units
			Blue	Green	Red	Infra Red	
Emitter	Forward Current	I_F	30	30	30	50	mA
	Pulse Forward Current※1	I_{FP}	0.1	0.1	0.5	1	A
	Reverse Voltage	V_R	5	5	4	5	V
	Power Dissipation	P	120	120	75	150	mW
Detector	Collector-Emitter Voltage	V_{CEO}	35				V
	Emitter-Collector Voltage	V_{ECO}	6				V
	Collector Current	Ic	20				mA
	Power Dissipation	Pc	50				mW
Operating Temperature		T_{opr}	-20 ~ +75				℃
Storage Temperature		T_{stg}	-30 ~ +80				℃
Soldering Temperature※2		T_{sol}	260				℃

Item	Peak Wavelength(λ p)	
KR1211-AA01	Blue	470nm
KR1211-AA02	Green	525nm
KR1211-AA03	White	—
KR1211-AA04	Red	660nm
KR1211-AA05	Infra Red	950nm



※ 1. Pulse width tw ≦ 100 μ sec Duty ratio=0.01
※ 2. Soldering condition 5sec. At 1mm over from body.
※ 3. 90% Reflective paper d=4.5mm
※ 4. No Object, in Dark
※ 5. ( ) means value of Red/Infra Red LED.

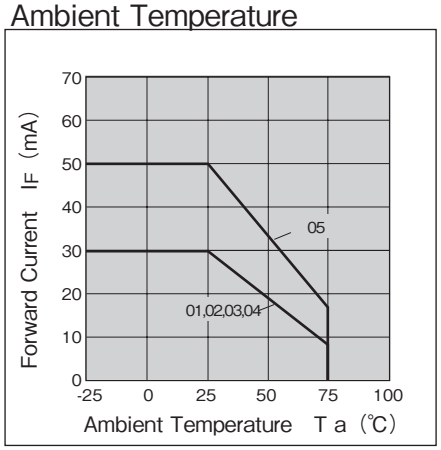
Electro-Optical Characteristics [Ta=25℃ Unless otherwise noted]

Item			Symbol	Condition※5	Blue			Green			Red			Infra Red			Units
					min.	typ.	max.	min.	typ.	max.	min.	typ.	max.	min.	typ.	max.	
Emitter	Forward Voltage		V_F	I_F=20mA	—	3.6	4.0	—	3.5	4.0	—	1.85	2.5	—	1.2	1.5	V
	Reverse Current		I_R	V_R=5V (3V)	—	—	50	—	—	50	—	—	100	—	—	10	μ A
	Peak Wavelength		λ p	I_F=20mA	—	470	—	—	525	—	—	660	—	—	950	—	nm
Detector	Dark Current		I_{CEO}	V_{CE}=20V, 0 lux	—	200	—	—	200	—	—	200	—	—	200	—	n A
Coupled	Light Current※3		I_C	V_{CE}=5V, I_F=20mA	100	250	—	100	200	—	100	350	—	100	250	—	μ A
	Leak Current※4		I_{LEAK}	V_{CE}=5V, I_F=20mA	—	10	—	—	10	—	—	10	—	—	10	—	μ A
	Response Time	Rise	tr	V_{CC}=5V, I_C=200 μ A	—	22	—	—	24	—	—	18	—	—	22	—	μ sec
		Fall	tf	R_L=1k Ω , d=4.5mm	—	22	—	—	24	—	—	18	—	—	22	—	μ sec

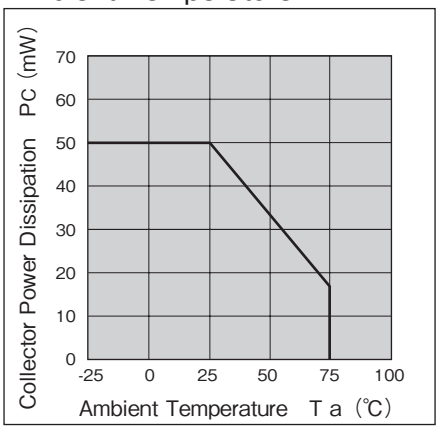
KR1211

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

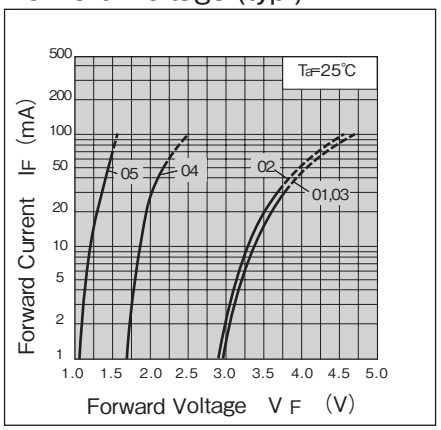
Forward Current vs. Ambient Temperature



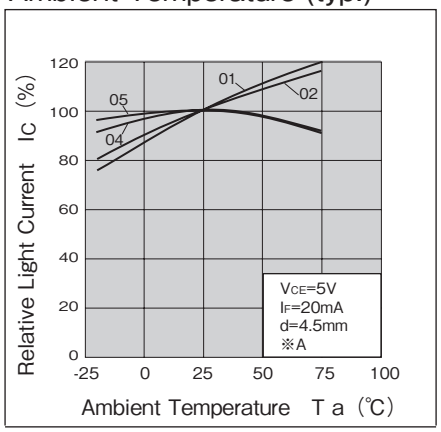
Collector Power Dissipation vs. Ambient Temperature



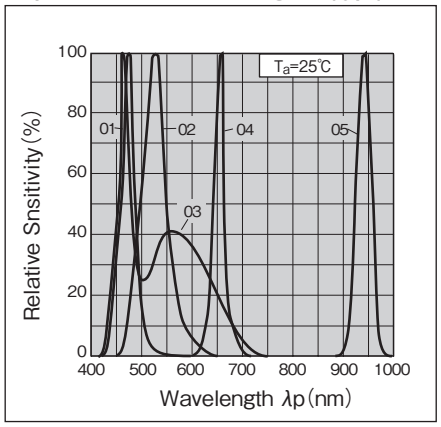
Forward Current vs. Forward Voltage (typ.)



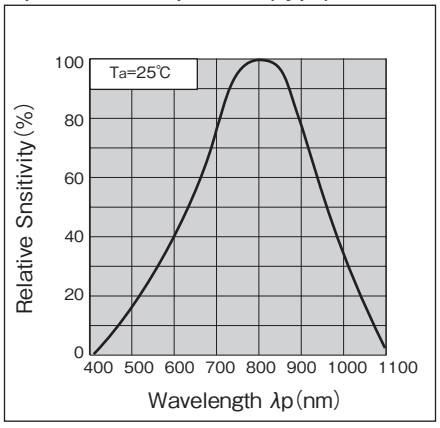
Relative Light Current vs. Ambient Temperature (typ.)



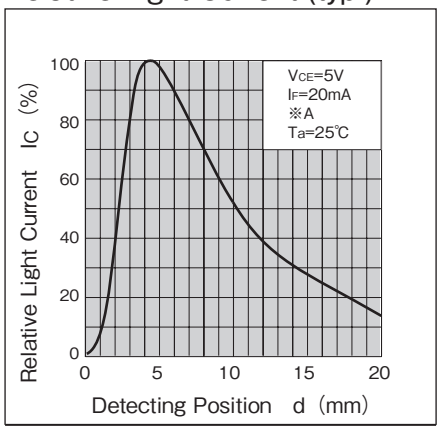
Spectral Wavelength (typ.)



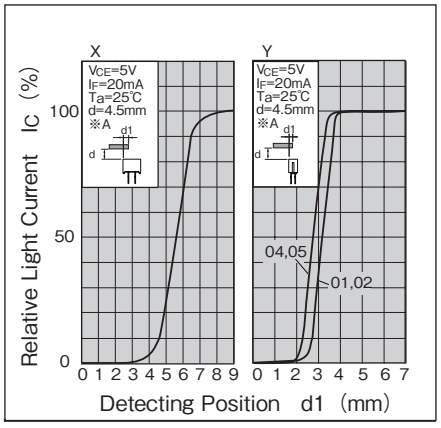
Spectral Response (typ.)



Detecting Position vs. Relative Light Current (typ.)



Detecting Position vs. Relative Light Current (typ.)



※A 90% Reflective Paper

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

04.09-1A

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