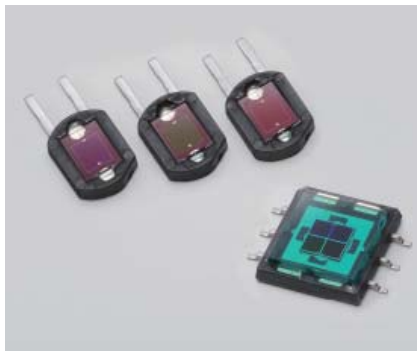


## Si photodiodes



S6428-01

S6429-01

S6430-01

S7505-01

### RGB color sensor

The S6428-01, S6429-01 and S6430-01 are color sensors designed to respectively detect monochromatic colors of blue ( $\lambda_p=460$  nm), green ( $\lambda_p=540$  nm) and red ( $\lambda_p=660$  nm).

The S7505-01 uses a 3-channel (RGB) photodiode having blue, green and red sensitivities, and is molded into a surface mount type package.

#### Features

S6428-01, S6429-01, S6430-01

- Plastic package (6 × 8 mm)
- Spectral response range
  - S6428-01: 400 to 540 nm ( $\lambda_p=460$  nm)
  - S6429-01: 480 to 600 nm ( $\lambda_p=540$  nm)
  - S6430-01: 590 to 720 nm ( $\lambda_p=660$  nm)
- Insensitive to near IR range
- High sensitivity
  - S6428-01: 0.22 A/W Typ. ( $\lambda=\lambda_p$ )
  - S6429-01: 0.27 A/W Typ. ( $\lambda=\lambda_p$ )
  - S6430-01: 0.45 A/W Typ. ( $\lambda=\lambda_p$ )
- Low dark current

S7505-01

- 3 ch (RGB) Si photodiode
- Surface mount type plastic package (9 × 9.6 mm)
- High sensitivity

#### Applications

- White balance adjustment
- Color identification
- Projector and TV brightness level detection
- Color control
- Light source color temperature detection

#### General ratings/Absolute maximum ratings

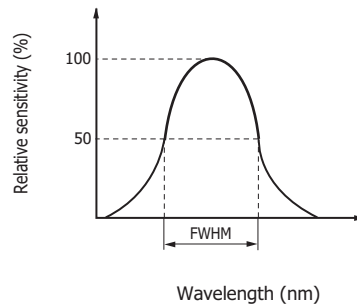
Type No.	Active area size (mm)	Effective active area (mm <sup>2</sup> )	Absolute maximum ratings		
			Reverse voltage V <sub>R</sub> Max. (V)	Operating temperature T <sub>opr</sub> (°C)	Storage temperature T <sub>stg</sub> (°C)
S6428-01	2.4 × 2.8	6.7	10	-10 to +60	-20 to +70
S6429-01					
S6430-01					
S7505-01	Green, Red: 1.5 × 1.5 Blue : 1.5 × 1.5 (2 elements)	Green, Red: 2.25 Blue : 4.5			

### Electrical and optical characteristics (Typ. Ta=25 °C, unless otherwise noted)

Type No.	Spectral response range $\lambda$ (nm)	Peak sensitivity wavelength $\lambda_p$ (nm)	Photo sensitivity S $\lambda=\lambda_p$ (A/W)	Dark current $I_D$ $V_R=1\text{ V}$		Temp. coefficient of $I_D$ (times/°C)	Rise time $t_r$ $V_R=0\text{ V}$ $R_L=1\text{ k}\Omega$ 10 to 90 % ( $\mu\text{s}$ )	Terminal capacitance $C_t$ $V_R=0\text{ V}$ $f=10\text{ kHz}$		Spectral response half width FWHM *2 (nm)
				Typ. (pA)	Max. (pA)			Typ. (pA)	Max. (pA)	
S6428-01	400 to 540	460	0.22	5	20	1.12	0.5	200	400	90
S6429-01	480 to 600	540	0.27							70
S6430-01	590 to 720	660	0.45							90
S7505-01	Blue	400 to 540	0.18	10 *1	200 *1	1.12	0.5	150	300	90
	Green	480 to 600	0.23							60
	Red	590 to 720	0.16							70

\*1: All elements

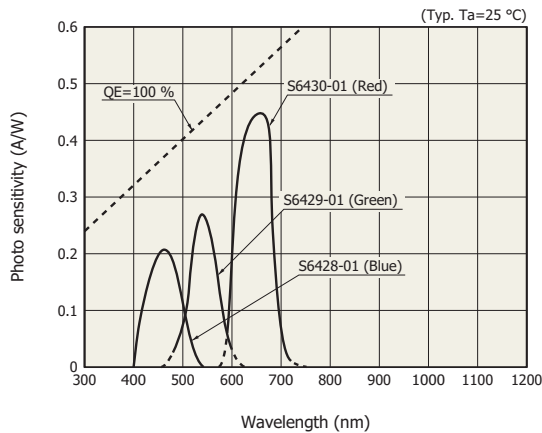
\*2: Defined as shown in the figure at right



KSPDC0031EA

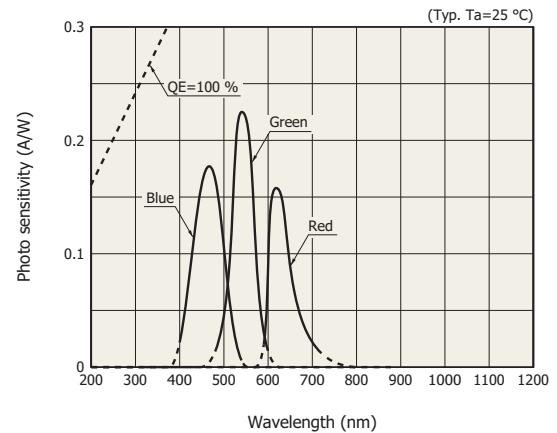
### Spectral response

S6428-01, S6429-01, S6430-01



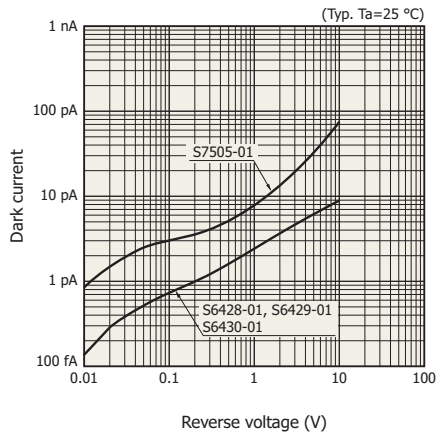
KSPD80141EC

S7505-01



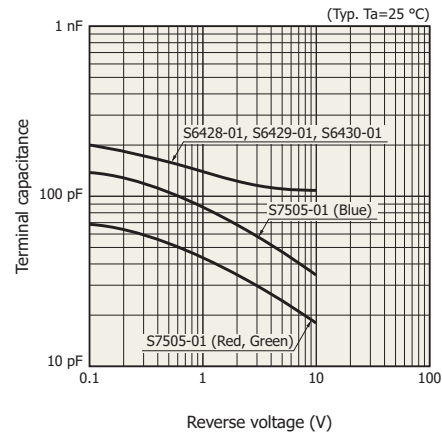
KMPD80217EA

### Dark current vs. reverse voltage



KSPDB0142EC

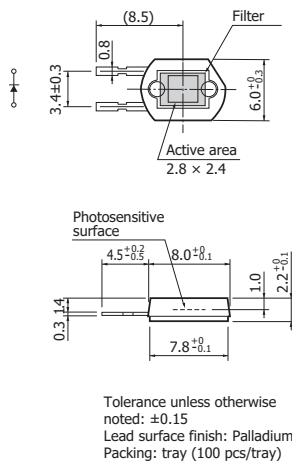
### Terminal capacitance vs. reverse voltage



KSPDB0143EC

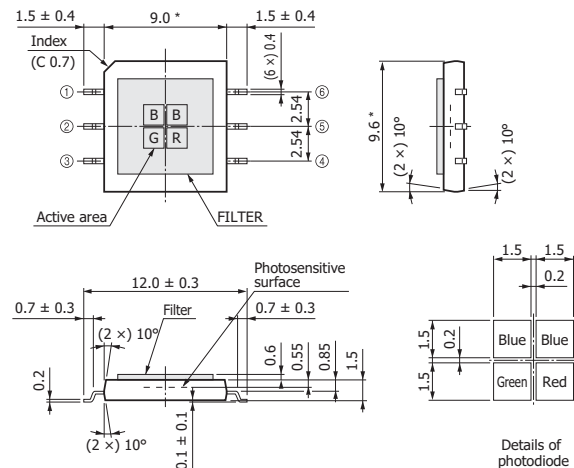
### Dimensional outlines (unit: mm)

#### S6428-01, S6429-01, S6430-01



KSPDA0056EA

#### S7505-01



KMPDA0073ED

Note: If excessive vibration is continuously applied to the glass filter, there is a risk that the filter may come off, so secure the glass filter with a holder.

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