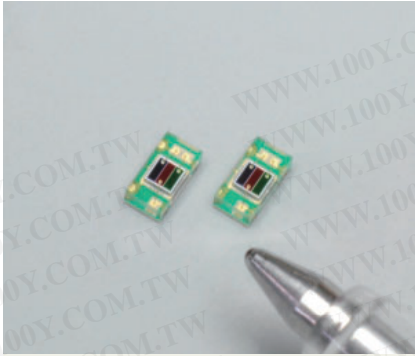


Si photodiode

S10917-35GT



RGB color sensor integrated in small and thin package

The S10917-35GT is a compact color sensor with a 3-channel photodiode mounted in one package, and sensitive to red ($\lambda=590$ to 680 nm), green ($\lambda=470$ to 600 nm) and blue ($\lambda=390$ to 530 nm) light. An infrared-cut filter is formed on the active area. This color sensor achieves superior cost performance and is suitable for monitoring brightness of RGB-LED backlight LCD in hand-held devices such as cell phones.

Features

- ➔ Infrared-cut filter formed on active area
- ➔ Superior cost performance
- ➔ Small, thin package: 3.0 × 1.6 × 1.0 mm
- ➔ 3-channel (RGB) Si photodiode
- ➔ Active area: 1 × 1 mm/3-segment (RGB)
- ➔ RoHS-compatible
- ➔ Surface mount type

Applications

- ➔ Portable or mobile equipment
- ➔ RGB-LED type LCD backlight monitors
- ➔ Detectors for various light sources
- ➔ Color detection

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-34970699
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

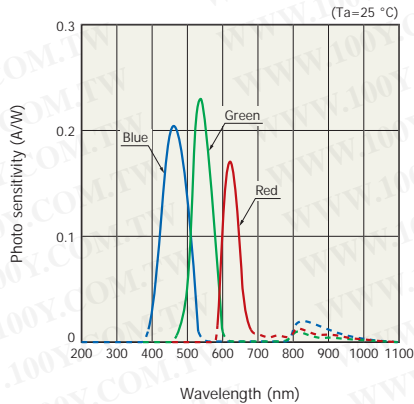
Absolute maximum ratings

Parameter	Symbol	Value	Unit
Reverse voltage	V_R Max.	10	V
Operating temperature	T_{opr}	-25 to +85	°C
Storage temperature	T_{stg}	-40 to +85	°C

Electrical and optical characteristics ($T_a=25$ °C, per element)

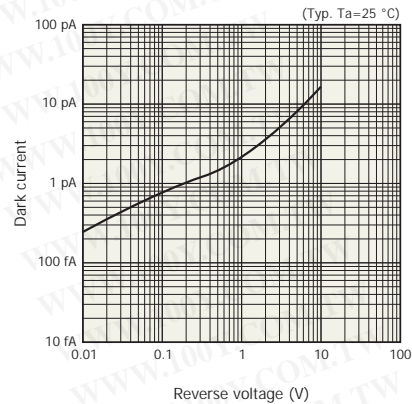
Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Spectral response range	λ	Blue	-	390 to 530	-	nm
		Green	-	470 to 600	-	
		Red	-	590 to 680	-	
Peak sensitivity wavelength	λ_p	Blue	-	460	-	nm
		Green	-	540	-	
		Red	-	620	-	
Photo sensitivity	S	Blue ($\lambda=\lambda_p$)	0.15	0.2	0.25	A/W
		Green ($\lambda=\lambda_p$)	0.18	0.23	0.28	
		Red ($\lambda=\lambda_p$)	0.12	0.17	0.22	
Dark current	I_D	$V_R=1$ V, all elements	-	1	50	pA
Temperature coefficient of I_D	T_{CID}		-	1.12	-	times/°C
Rise time	t_r	$V_R=0$ V, $R_L=1$ k Ω , 10 to 90 %	-	0.1	0.5	μ s
Terminal capacitance	C_t	$V_R=0$ V, $f=10$ kHz	5	12	25	pF

Spectral response (measurement example)



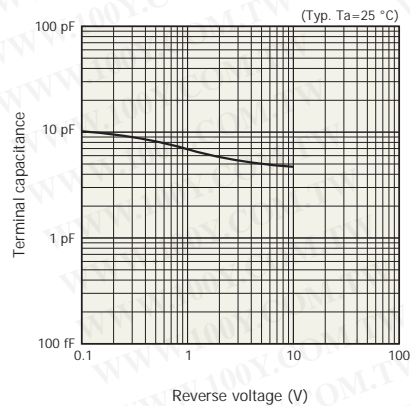
KSPDB0295EA

Dark current vs. reverse voltage



KSPDB0252EA

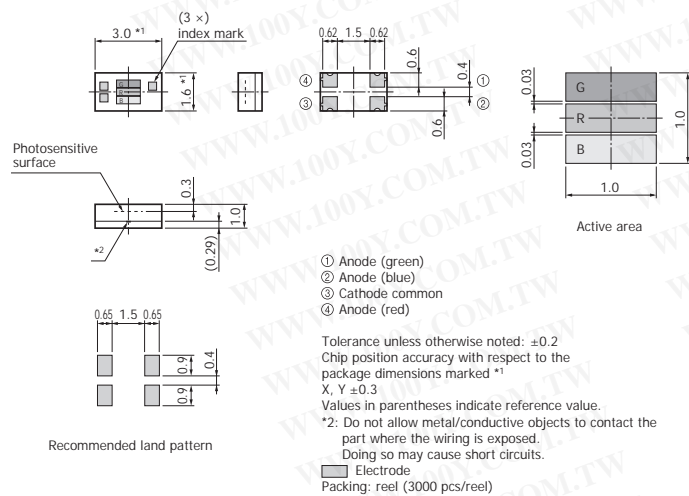
Terminal capacitance vs. reverse voltage



KSPDB0253EA











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Dimensional outline (unit: mm)



KSPDA0174EB

Line-up of RGB color sensors

Type No.	Type	Active area size (mm)	Package (mm)	Peak sensitivity wavelength (nm)		Photo sensitivity				Photo						
				B	G	B	G	R	B		G	R				
S9032-02	Photodiode	 $\phi 2.0$	$4 \times 4.8 \times 1.8^t$ 6-pin (filter 0.75 ^t)	B	460	B	0.18 (A/W) [$\lambda=460$ nm]									
				G	540	G	0.23 (A/W) [$\lambda=540$ nm]									
				R	620	R	0.16 (A/W) [$\lambda=620$ nm]									
S9702	Photodiode	 1.0×1.0	$3 \times 4 \times 1.3^t$ 4-pin (filter 0.75 ^t)	B	460	B	0.18 (A/W) [$\lambda=460$ nm]									
				G	540	G	0.23 (A/W) [$\lambda=540$ nm]									
				R	620	R	0.16 (A/W) [$\lambda=620$ nm]									
S10917-35GT	Photodiode	 1.0×1.0	$3 \times 1.6 \times 1.0^t$ COB (on-chip filter)	B	460	B	0.2 (A/W) [$\lambda=460$ nm]									
S9706	Digital Photo IC	 1.2×1.2	$4 \times 4.8 \times 1.8^t$ 6-pin (filter 0.75 ^t)	B	465	Low	B	0.21 (LSB/lx)	High	B	1.9 (LSB/lx)					
				G	540								G	0.45 (LSB/lx)	G	4.1 (LSB/lx)
				R	615								R	0.64 (LSB/lx)	R	5.8 (LSB/lx)
S11059-78HT	I ² C interface-compatible color sensor	 1.22×0.56	$1.68 \times 1.18 \times 0.58^t$ WL-CSP (on-chip filter)	B	460	Low	B	3.35 (counts/lx)	High	B	31.7 (counts/lx)					
				G	530								G	7.61 (counts/lx)	G	76.2 (counts/lx)
				R	615								R	9.48 (counts/lx)	R	94.5 (counts/lx)
				IR	855								IR	1.66 (counts/lx)	IR	15.3 (counts/lx)

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