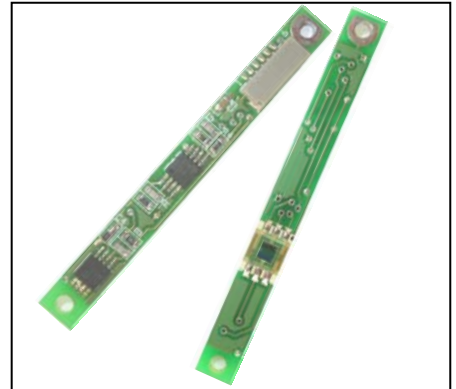


# Color sensor module

## Color sensor module

# OPI20TMF-3CM

## RGB-LED backlight monitor for LCD



### Description

The **OPI20TMF-3CM** is the color sensor module changing optical signal to electrical signal as voltages. High response time and small size make it suitable for LCD Backlight.

### Features

- Built-in RGB color sensor Blue
- High sensitivity and reliability
- Fast response
- Small packaging(47mm × 5mm)

### Applications

- LCD backlighting

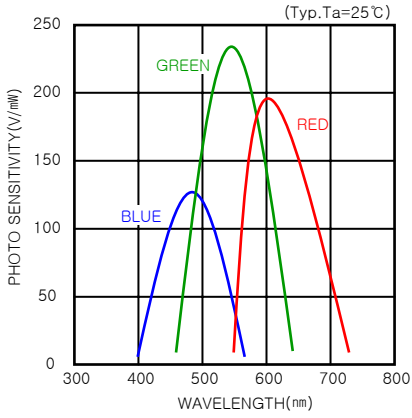
### Absolute Maximum Ratings (Ta= 25°C)

Parameter	Symbol	Rated	Unit
Supply voltage	Vcc	+5.5	V
Reference voltage	Vref	Vcc - 0.4	V
Operating temperature	Topr	-15 ~ 80	°C
Storage Temperature	Tstg	-20 ~ 85	°C

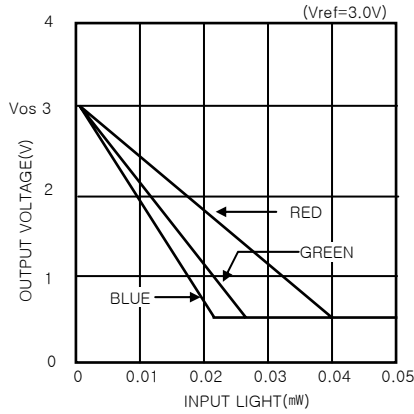
### Electrical and optical characteristics (Ta= 25°C)

Parameters	Symbol	Conditions	Min.	Typ.	Max.	Unit	
Operating supply voltage range	Vcc		+2.7	+5	+5.5	V	
Current consumption	Icc	Dark state	-	0.55	2.0	mA	
Rise time	tr	10 to 90%	-	30	-	μs	
Output offset voltage	Vos	Dark state	Vref-5	-	Vref+5	mV	
Output voltage range	Vout		0.4	-	Vos	V	
Output signal polarity	Vout		Negative			-	
Photo sensitivity	Red	$\lambda = \lambda_P$	-	-190	-	V/mW	
	Green		-	-234	-		
	Blue		-	-124	-		
Spectral Response range	Red	$\lambda$	-	570	-	nm	
	Green		-	470	-		640
	Blue		-	400	-		560
Peak sensitivity wavelength	Red	$\lambda_P$	-	600	-	nm	
	Green		-	550	-		
	Blue		-	480	-		
Trans-impedance	Red	Zt	-	470	-	kΩ	
	Green		-	680	-		
	Blue		-	1	-		MΩ

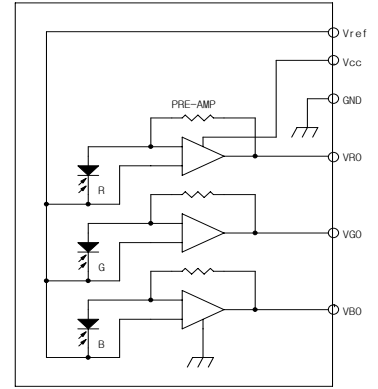
## Characteristic graphs



[ Spectral response ]

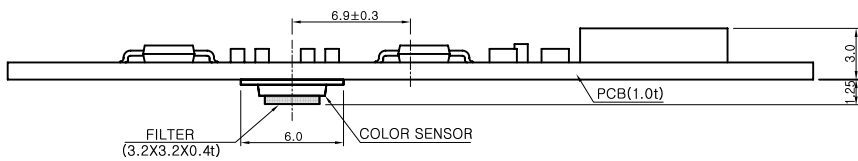
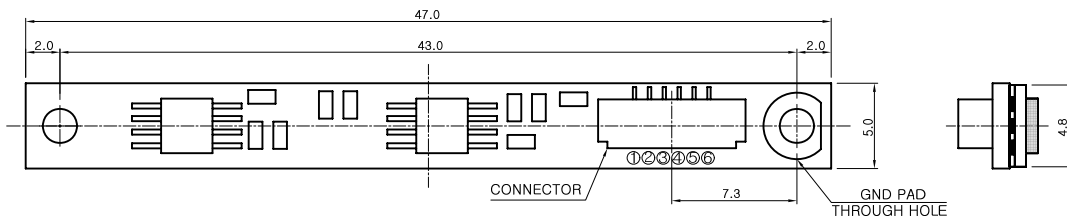


[ Output voltage vs. input light ]



[ Block diagram ]

## Dimensional outline (unit:mm)



CONNECTOR : SM06B-SSR-H-TB(JST)

Pin No.	Signal
①	V <sub>REF</sub>
②	V <sub>CC</sub>
③	GND
④	V <sub>RO</sub>
⑤	V <sub>GO</sub>
⑥	V <sub>BO</sub>

General tolerance (±0.1)