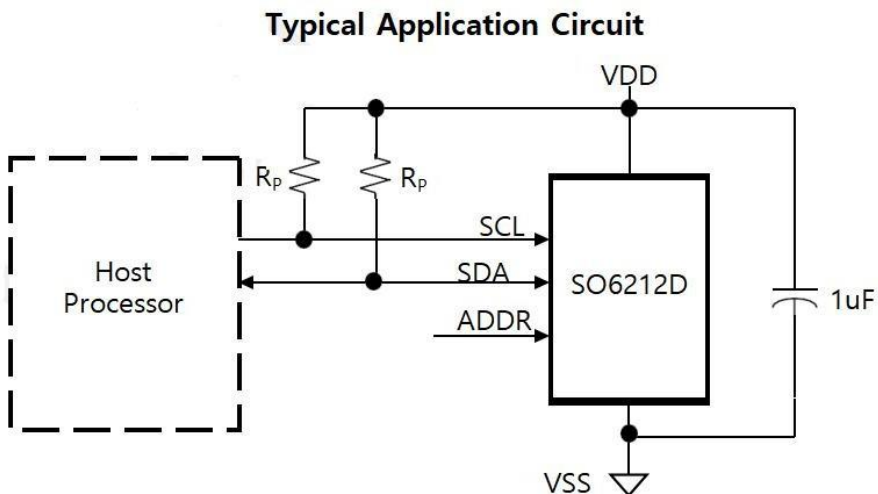


1. Features

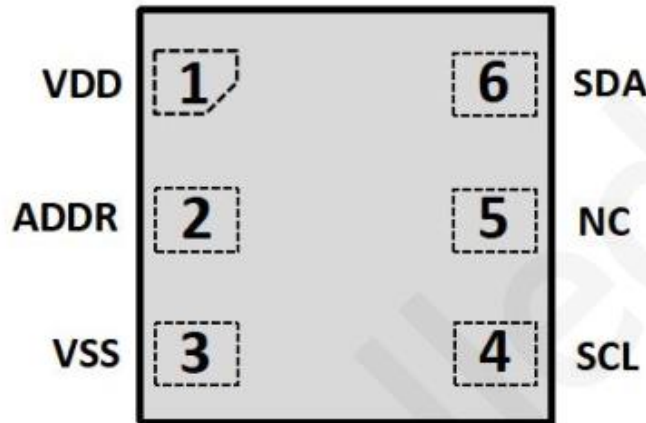
- Color Temperature and Ambient Light Sensing
 - Low Power Management
 - I2C Fast Mode Interface Compatible
 - 16 Bit resolution
 - IR blocking filters
 - Programmable Gain & Integration Time
- Power Management
 - Low Power 1uA Sleep State
- I2C Interface Compatible
 - Up to 400kHz (I2C Fast Mode)
 - Device address : 7'b1000_011 (R/W, ADDR float), 7'b1000_010 (R/W, ADDR low)

2. Applications

- Brightness Sensing
- Color Temperature Sensing
- Notebook
- Handheld device
- Industrial and medical application



3. Pin Configuration and Functions



[TOP View]

Pin Functions

#	PIN	I/O/P/G	DESCRIPTION
1	VDD	P	Supply voltage
2	ADDR	O	I2C device address input terminal (internal pull-up) - High or Floating : 7'b1000_011 - Low :7'b1000_010
3	VSS	G	Supply Ground
4	SCL	I	I2C serial clock input terminal
5	NC		No connection to this pin
6	SDA	I/O	I2C serial data input/output terminal

4. Specifications

5.1 Absolute Maximum Ratings

SYMBOL	PARAMETER	MIN	MAX	UNIT
VDD	Power Supply Voltage	-0.5	3.6	V
Vin	Input Voltage	-0.5	VDD	V
Vout	Output Voltage	-0.5	VDD	V
Tj	Junction Temperature	-40	85	°C

5.2 ESD Ratings

SYMBOL	PARAMETER	VALUE	UNIT
VESD	Human-Body Model (HBM)	+/- 8000	V
	Machine Model (MM)	+/- 800	

5.3 Recommended Operating Conditions

SYMBOL	PARAMETER	MIN	TYP	MAX	UNIT
VDD	Power Supply Voltage	2.6	3.3	3.6	V
Vin	Input Voltage	0		VDD	V
Vout	Output Voltage	0		VDD	V
TA	Operating ambient temperature	-30		70	°C

5.4 Electrical Characteristics (VDD = 3V, Ta = 25°C)

PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Current	Active		300	350	uA
	Sleep (@ADDR high)		1	10	
	Sleep (@ADDR low)		16	25	
SDA output low voltage	3mA sink current	0		0.4	V
	6mA sink current	0		0.6	
Low Level Input Voltage				VDD*0.3	V
High Level Input Voltage		VDD*0.7			V

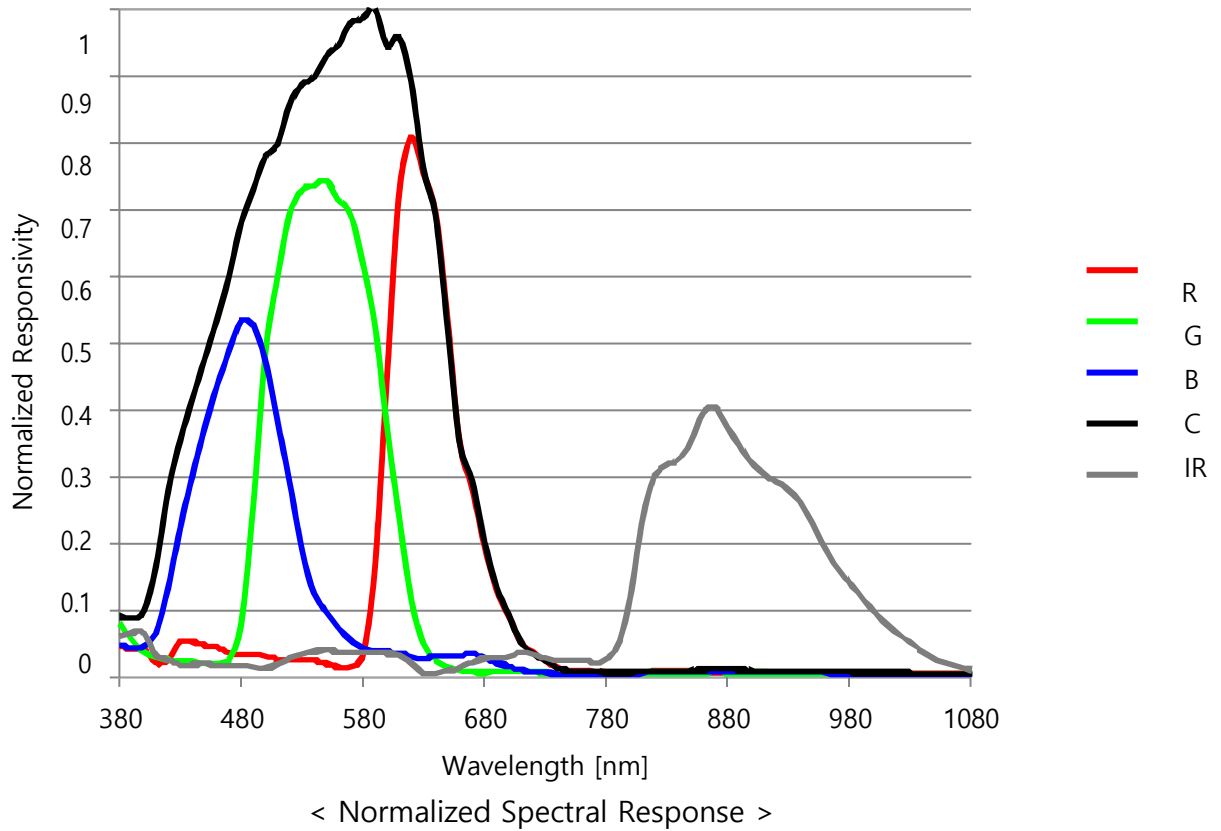
5.5 Data Transmission Timing Requirements

PARAMETER	CONDITIONS	MIN	MAX	UNIT
Output Low Level (SDA)	IOL = 4mA		0.5	V
SCL Operating Frequency			400	kHz
Stop and Start Condition		1.3		us
Hold Time After Repeated Start Conditions		0.6		us
SCL Clock Low Period		1.3		us
SCL Clock High Period		0.6		us
Repeated Start Condition Setup Time		0.6		us
Data Hold Time		0	0.9	us
Data Setup Time		100		ns
Clock/Data Fall Time			300	ns
Clock/Data Rise Time			300	ns
Stop Condition Setup Time		0.6		us

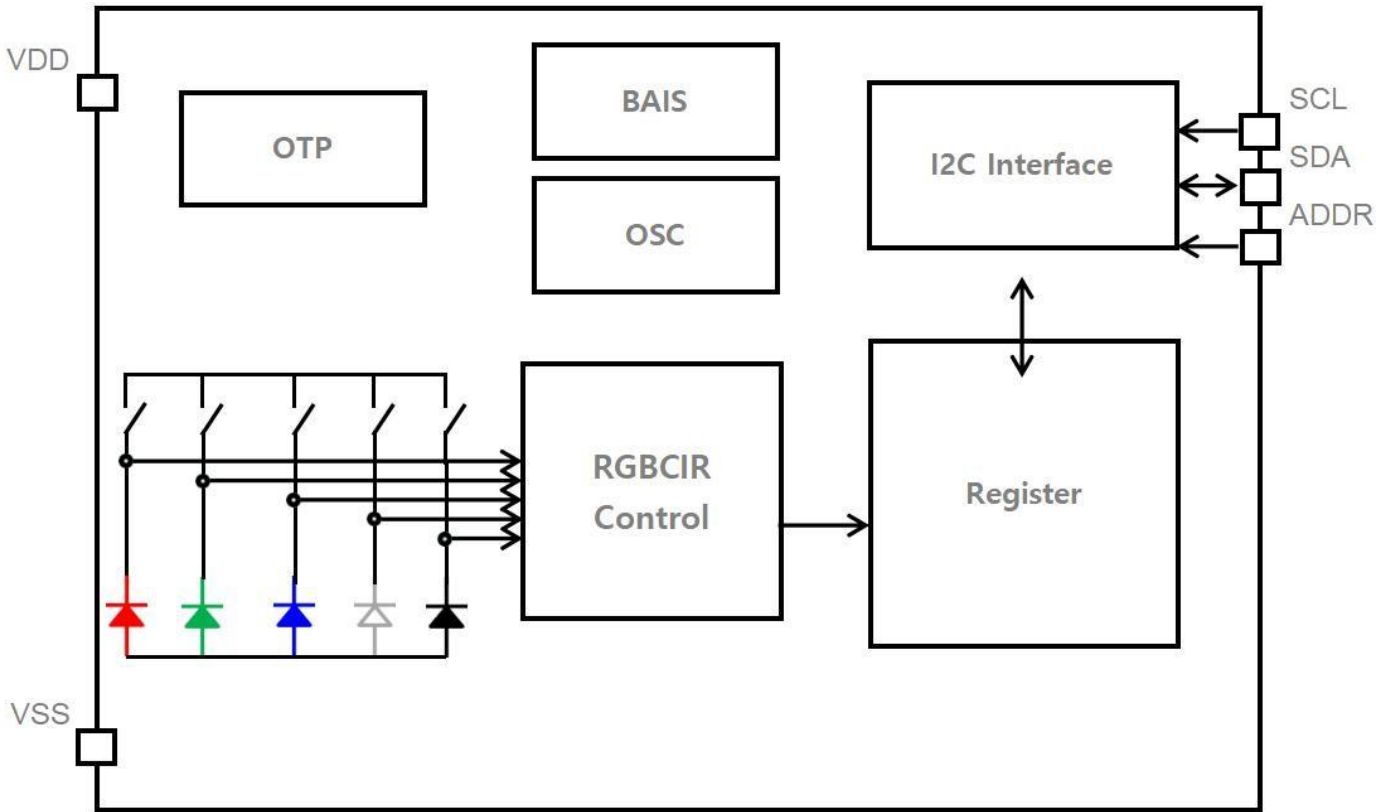
5.6 Optical Characteristics (VDD = 3V, Ta = 25°C)

PARAMETER		TEST CONDITIONS	MIN	TYP	MAX	UNIT
Peak_Sensitivity Wavelength of ADC	R			630		nm
	G			550		nm
	B			480		nm
	C			590		nm
	IR			870		nm
Counter Value of ADC	R	5700K WLED, 1000Lux, Integration Time 10ms, AGAIN=1		3730		counts
	G			8635		counts
	B			7545		counts
	C			15830		counts
	IR			50		counts
Dark Count Value		Dark, Integration Time 100ms, AGAIN=1	0	1	3	counts
ADC count Range			0		65,535	counts
Gain scaling		AGAIN = 0 AGAIN = 1 AGAIN = 2 AGAIN = 3		1 1.5 2 2.5		x

5.7 Typical Performance Characteristics



6. Function Block Diagram



FIELD	DESCRIPTION
DEV_ID	Device ID (0x24)
REV_ID	Revision ID (0x0)
ADC_R	RED data
ADC_G	GREEN data
ADC_B	BLUE data
ADC_C	Clear data
ADC_IR	IR data

7. Package Dimension

Units 【mm】

