

BASIC CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)							
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT	
Supply voltage		V_{DD}	2.5	-	3.6	V	
Supply current		I_{DD}	-	200	-	μA	
I ² C signal input	Logic high	$V_{DD} = 3.3\text{ V}$	V_{IH}	1.5	-	-	V
	Logic low		V_{IL}	-	-	0.8	
	Logic high	$V_{DD} = 2.6\text{ V}$	V_{IH}	1.4	-	-	V
	Logic low		V_{IL}	-	-	0.6	
Peak sensitivity wavelength		λ_{PR}	-	650	-	nm	
		λ_{PG}	-	550	-	nm	
		λ_{PB}	-	450	-	nm	
Irradiance responsivity	$\lambda_{PR} = 619\text{ nm}^{(3)}$		-	96	-	counts/ $(\mu\text{W}/\text{cm}^2)$	
	$\lambda_{PG} = 518\text{ nm}^{(3)}$		-	74	-		
	$\lambda_{PB} = 467\text{ nm}^{(3)}$		-	56	-		
Detectable intensity	Minimum	G channel, $I_T = 1280\text{ ms}^{(1)(2)}$	-	0.007865	-	lx	
	Maximum	G channel, $I_T = 40\text{ ms}^{(1)(2)}$	-	16 496	-		
Dark offset		G channel, $I_T = 80\text{ ms}^{(1)}$	0	-	3		
Operating temperature range		T_{amb}	-40	-	+85	$^{\circ}\text{C}$	
Shutdown current	Light condition = dark, $V_{DD} = 3.6\text{ V}$	I_{DD}	-	800	-	nA	

Notes

- (1) Test condition: $V_{DD} = 3.3\text{ V}$, temperature: $25\text{ }^{\circ}\text{C}$
- (2) Light source: white LED
- (3) LED spectrum given in fig. 1; $I_T = 160\text{ ms}$

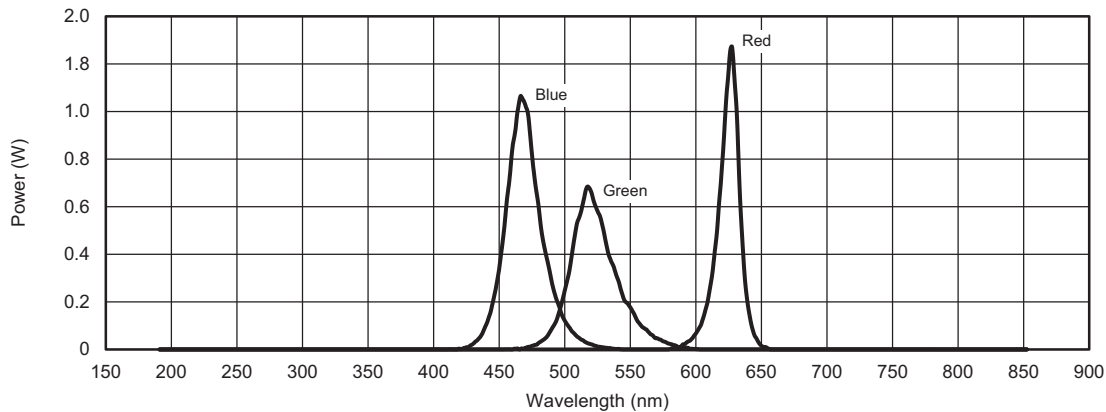
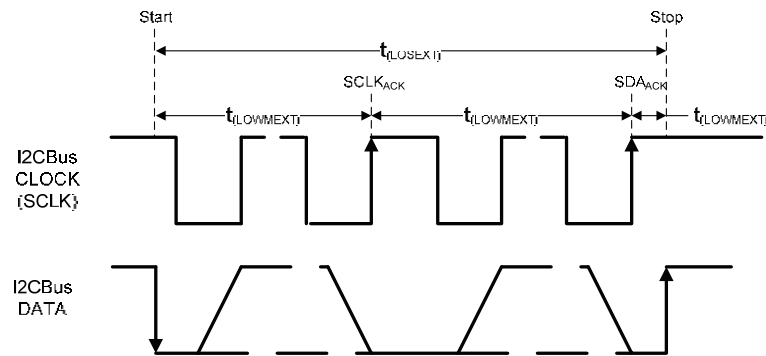
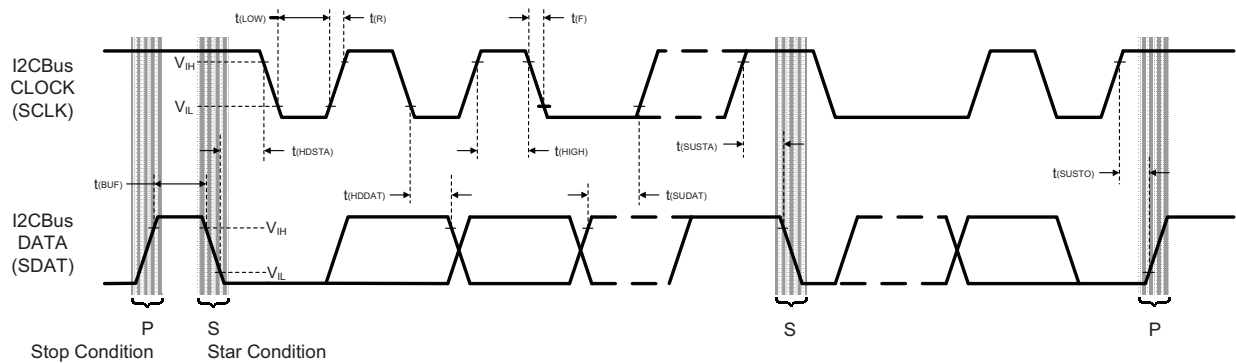


Fig. 1 - Normalized Spectral Response

I²C BUS TIMING CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	SYMBOL	STANDARD MODE		FAST MODE		UNIT
		MIN.	MAX.	MIN.	MAX.	
Clock frequency	$f_{(SMBCLK)}$	10	100	10	400	kHz
Bus free time between start and stop condition	$t_{(BUF)}$	4.7	-	1.3	-	μs
Hold time after (repeated) start condition; after this period, the first clock is generated	$t_{(HDSTA)}$	4.0	-	0.6	-	μs
Repeated start condition setup time	$t_{(SUSTA)}$	4.7	-	0.6	-	μs
Stop condition setup time	$t_{(SUSTO)}$	4.0	-	0.6	-	μs
Data hold time	$t_{(HDDAT)}$	300	-	90	-	ns
Data setup time	$t_{(SUDAT)}$	250	-	100	-	ns
I ² C clock (SCK) low period	$t_{(LOW)}$	4.7	-	1.3	-	μs
I ² C clock (SCK) high period	$t_{(HIGH)}$	4.0	-	0.6	-	μs
Detect clock / data low timeout	$t_{(TIMEOUT)}$	25	35	-	-	ms
Clock / data fall time	$t_{(F)}$	-	300	-	300	ns
Clock / data rise time	$t_{(R)}$	-	1000	-	300	ns


 Fig. 2 - I²C Bus Timing Diagram