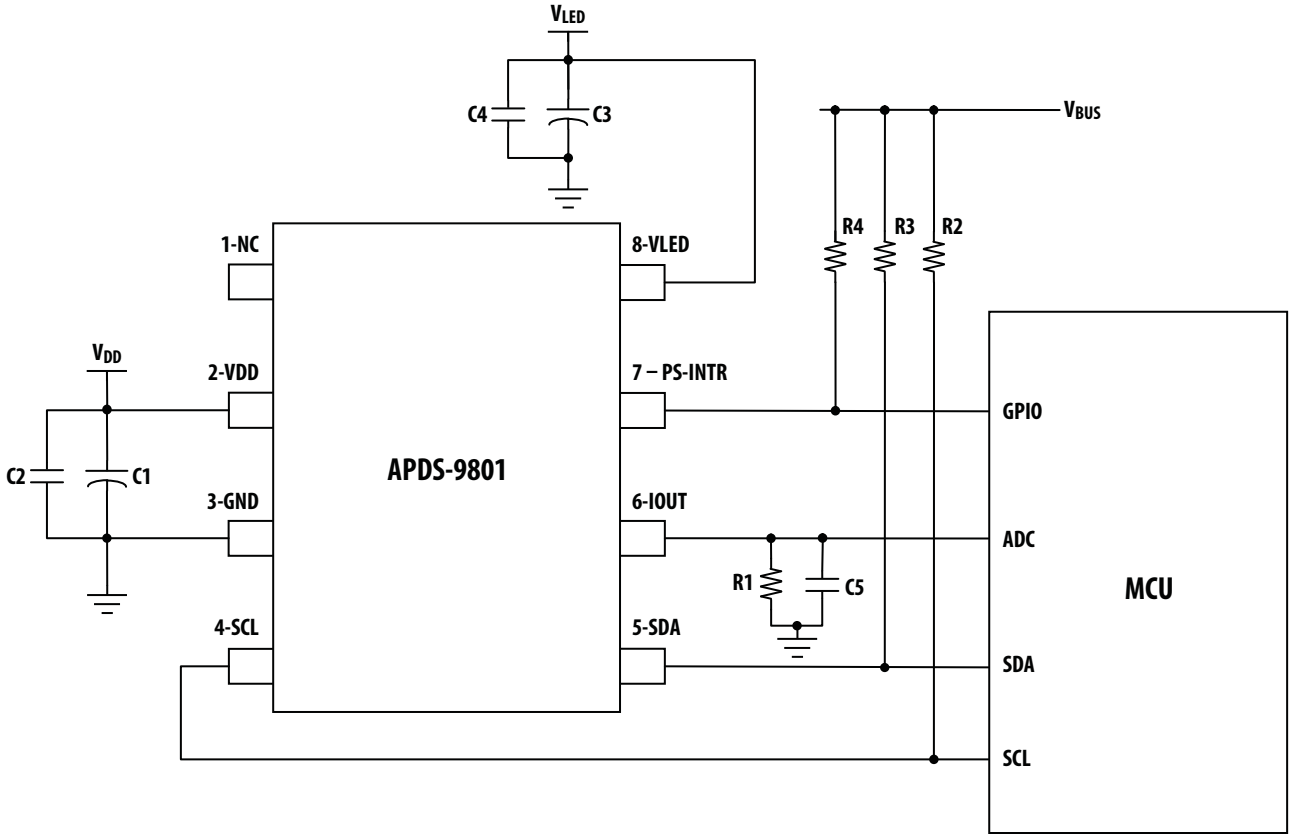
Electrical & Optical Specifications (T_A = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
ALS Output Current	I_{OUT}		83		µA	V_{DD}=1.8 V, Ev=100 Lux, [1]
ALS Dark Current			300		nA	V_{DD}=1.8 V, Ev=0 Lux
ALS Peak Spectral Sensitivity			560		nm	
ALS Light Current Ratio			1.1			[2]
ALS Saturation Voltage	V_{SAT}	V_{DD}-1.0	V_{DD}-0.8		V	Load=150 kΩ, V_{DD}=1.8 V, Ev=100 Lux, [1]
SCL, SDA Input High Voltage	V_{IH}	1.25			V	
SCL, SDA Input Low Voltage	V_{IL}			0.54	V	
INTR, SDA Output Low Voltage (Open Drain) [PS]	V_{OL}			0.3	V	I_{SINK}=3 mA
				0.6	V	I_{SINK}=6 mA
I_{AVG} at 5 ms delay time			1.3		mA	V_{DD}=1.8 V, I_{DD}+I_{LEDAVG} [3]
I_{AVG} at 50 ms delay time			180		µA	V_{DD}=1.8 V, I_{DD}+I_{LEDAVG} [4]
I_{AVG} at 500 ms delay time			90		µA	V_{DD}=1.8 V, I_{DD}+I_{LEDAVG} [5]
Shutdown Current	I_{SD}		1		µA	V_{DD}=1.8 V, Ev=0 Lux
PS Output Count			1300		counts	Kodak 18% grey card, 30 mm distance, Freq=100 kHz, n=20 pulses, Duty-cycle=25%, I_{LED}=100 mA, V_{DD}=1.8 V, [6] Refer to Figure 6.
LED Peak Wavelength			940		nm	
PS LED - Output Current Peak	I_{LED}	75, 100, 125, 150			mA	Programmable via I²C bus
PS-LED Pulse Frequency		50, 100, 200			kHz	Programmable via I²C bus
PS-Pulse Duty-Cycle		12.5%, 25%, 37.5%, 50%				Programmable via I²C bus
PS-Number of Pulses		4, 8, 12, 16, 20, 24, 28, 32				Programmable via I²C bus
PS-Burst Interval Delay		5, 20, 50, 125, 250, 500, 1000, 2000			ms	Programmable via I²C bus
Full Scale ADC Count (PS)				4092	counts	Programmable via I²C bus
Crosstalk (PS)				250	counts	Freq=100kHz, n=20pulses, Duty-cycle=25%, I_{LED}=100mA, V_{DD}=1.8V, [7]

Note:
1. White LED is used as light source.
2. V_{DD}=1.8 V, Current Light Ratio = (output current at 100 Lux Incandescent) / (output current at 100 Lux Fluorescent).
3. Test conditions: V_{DD}=1.8 V, 5 ms delay, I_{LED}=100 mA, 20 pulses, 25% duty cycle, Freq=100 kHz, Ev=0 Lux.
4. Test conditions: V_{DD}=1.8 V, 50 ms delay, I_{LED}=100 mA, 20 pulses, 25% duty cycle. Freq=100 kHz. Ev=0 Lux.
5. Test conditions: V_{DD}=1.8 V, 500 ms delay, I_{LED}=100 mA, 20 pulses, 25% duty cycle. Freq=100 kHz. Ev=0 Lux.
6. Test without window between sensor and grey card object.
7. Test without window or object above sensor.

APDS–9801 Typical Application Circuit



R1	1 kΩ 1/16W 5%
R2, R3, R4	10 kΩ 5%
C1, C3	6.8 µF 10V
C2, C4	100 nF 10V
C5	10 µF 10V