

NOA1213

Table 3. ELECTRICAL CHARACTERISTICS

(Unless otherwise specified, these specifications apply over VDD = 5.5 V, -40°C < T_A < 85°C)

Rating	Test Conditions	Symbol	Min	Typ	Max	Unit
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TYPICAL CHARACTERISTICS

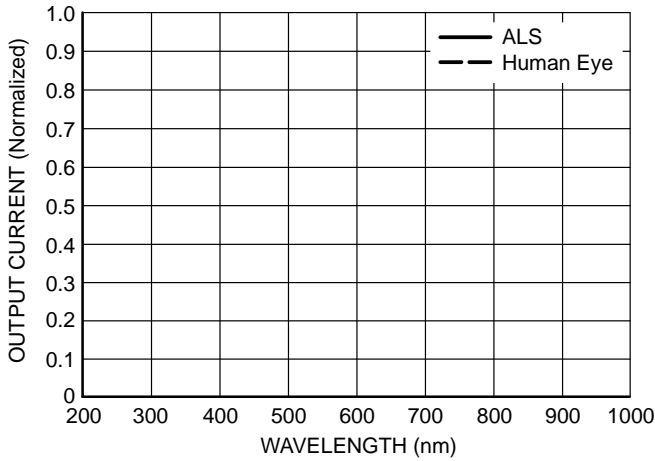


Figure 3. Spectral Response (Normalized)

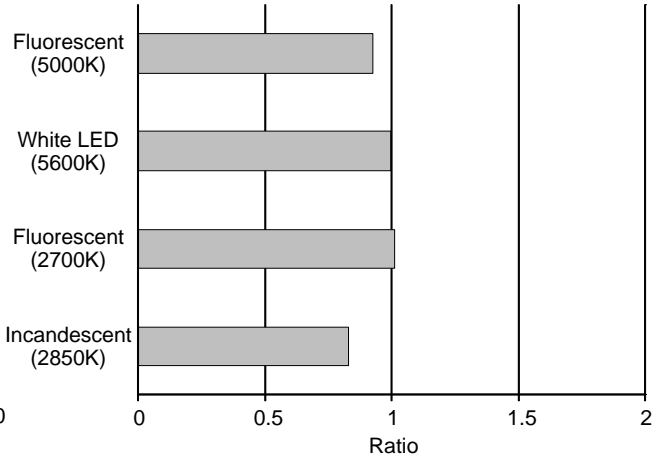


Figure 4. Light Source Dependency (Normalized to Fluorescent Light)

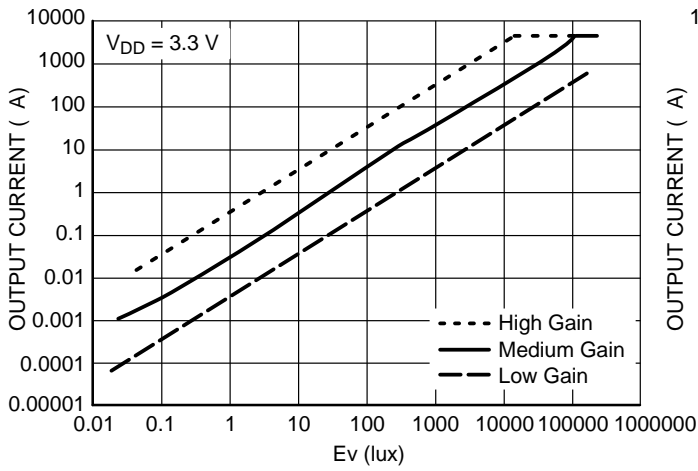


Figure 5. Output Current vs. Ev

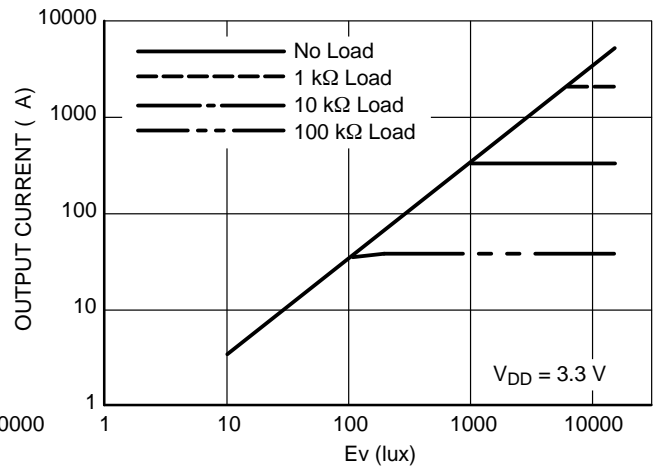


Figure 6. Output Current vs. Ev (High Gain Mode)

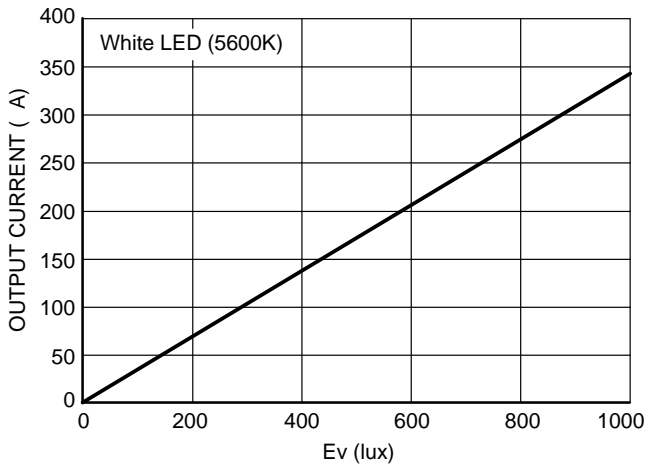


Figure 7. Output Current vs. Ev, 0-1000 lux (High Gain Mode)

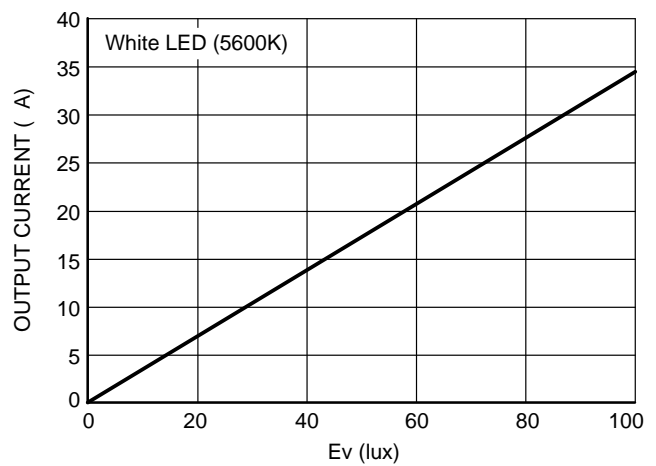


Figure 8. Output Current vs. Ev, 0-100 lux (High Gain Mode)

TYPICAL CHARACTERISTICS

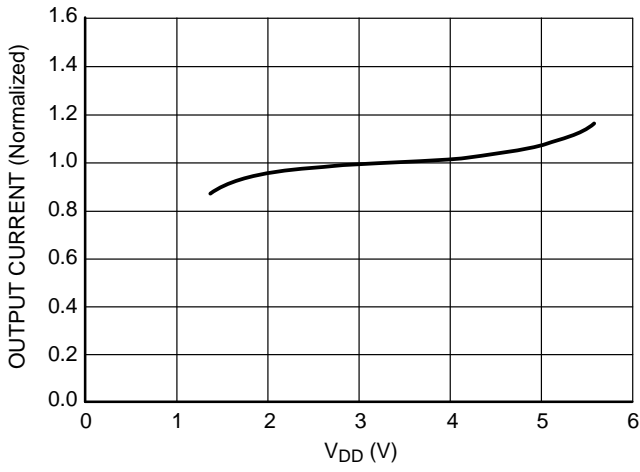


Figure 15. Output Current at 100 lux vs. Supply Voltage (High Gain Mode)

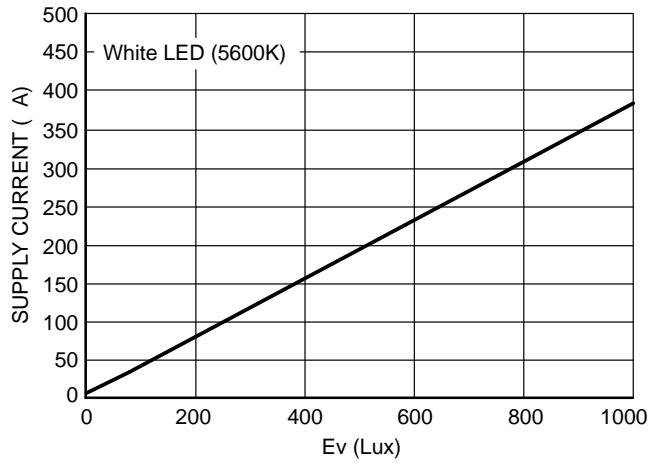


Figure 16. Supply Current vs. Ev (High Gain Mode)

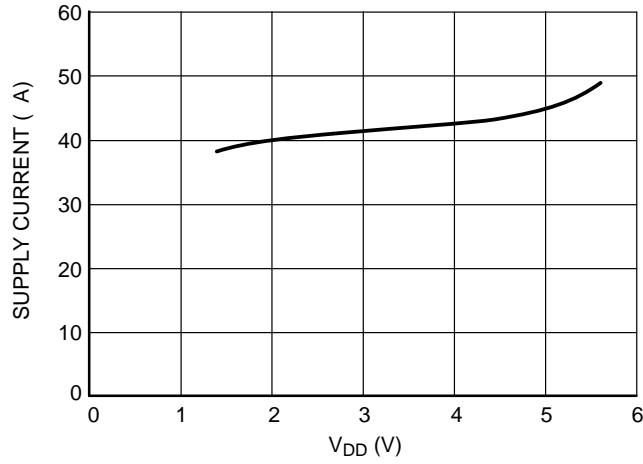


Figure 17. Supply Current vs. Supply Voltage (High Gain Mode)

DESCRIPTION OF OPERATION

Ambient Light Sensor Architecture

The NOA1213 employs a sensitive photo diode fabricated in ON Semiconductor’s standard CMOS process technology. The major components of this sensor are as shown in Figure 2 . The photons which are to be detected pass through an ON Semiconductor proprietary color filter limiting extraneous photons and thus performing as a band pass filter on the incident wave front. The filter only

transmits photons in the visible spectrum which are primarily detected by the human eye and exhibits excellent IR rejection. The photo response of this sensor is as shown in Figure 3.

The ambient light signal detected by the photo diode is converted to an analog output current by an amplifier with programmable gain. Table 4 shows the gain setting and the corresponding light sensitivity.

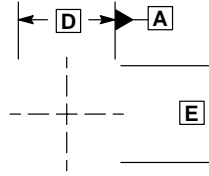
Table 4. PROGRAMMABLE GAIN SETTINGS

GB2	GB1	Mode	Approximate Output Current @ 100 lux	Approximate Output Current @ 1000 lux	Saturation
0	0	Power Down	-	-	-
0	1	High Gain	34.1 A	365 A	~10,000 lux
1					

CUDFN6 1.6x1.6, 0.5P
CASE 505AL
ISSUE A

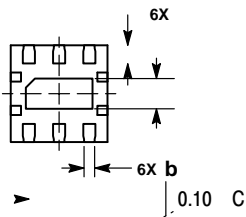
SCALE 2:1

DATE 09 FEB 2017

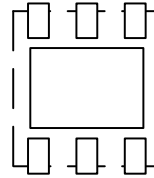


NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSION *b* APPLIES TO PLATED TERMINAL AND IS MEASURED BETWEEN 0.10 AND 0.20MM FROM THE TERMINAL TIP.
4. COPLANARITY APPLIES TO THE EXPOSED PAD AS WELL AS THE TERMINALS.



NOTE 3



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