



NOTES:

- D_{PD} = IDEAL PHOTODIODE.
- I_{SC} = CURRENT GENERATED BY LIGHT.
- I_L = LEAKAGE CURRENT.
- C_{PD} = DEVICE CAPACITANCE.
- e_{PD} = DEVICE-VOLTAGE NOISE.
- R_{PD} = DEVICE PARALLEL RESISTANCE.
- R_S = DEVICE LEAD RESISTANCE.
- C_F = FEEDBACK CAPACITOR.
- R_F = FEEDBACK RESISTOR.
- C_{RF} = FEEDBACK-RESISTOR PARASITIC CAPACITANCE.
- e_{RF}, e_A = RESISTOR- AND AMPLIFIER-VOLTAGE NOISE.
- C_{CM} = COMMON-MODE-AMPLIFIER CAPACITANCE.
- C_{DIFF} = DIFFERENTIAL-AMPLIFIER CAPACITANCE.
- $A_{OL}(jw)$ = AMPLIFIER OPEN-LOOP GAIN.

Figure 1 A transimpedance photo-sensing circuit is not without its design challenges.