

Questions: Protecting Low Voltage ADC

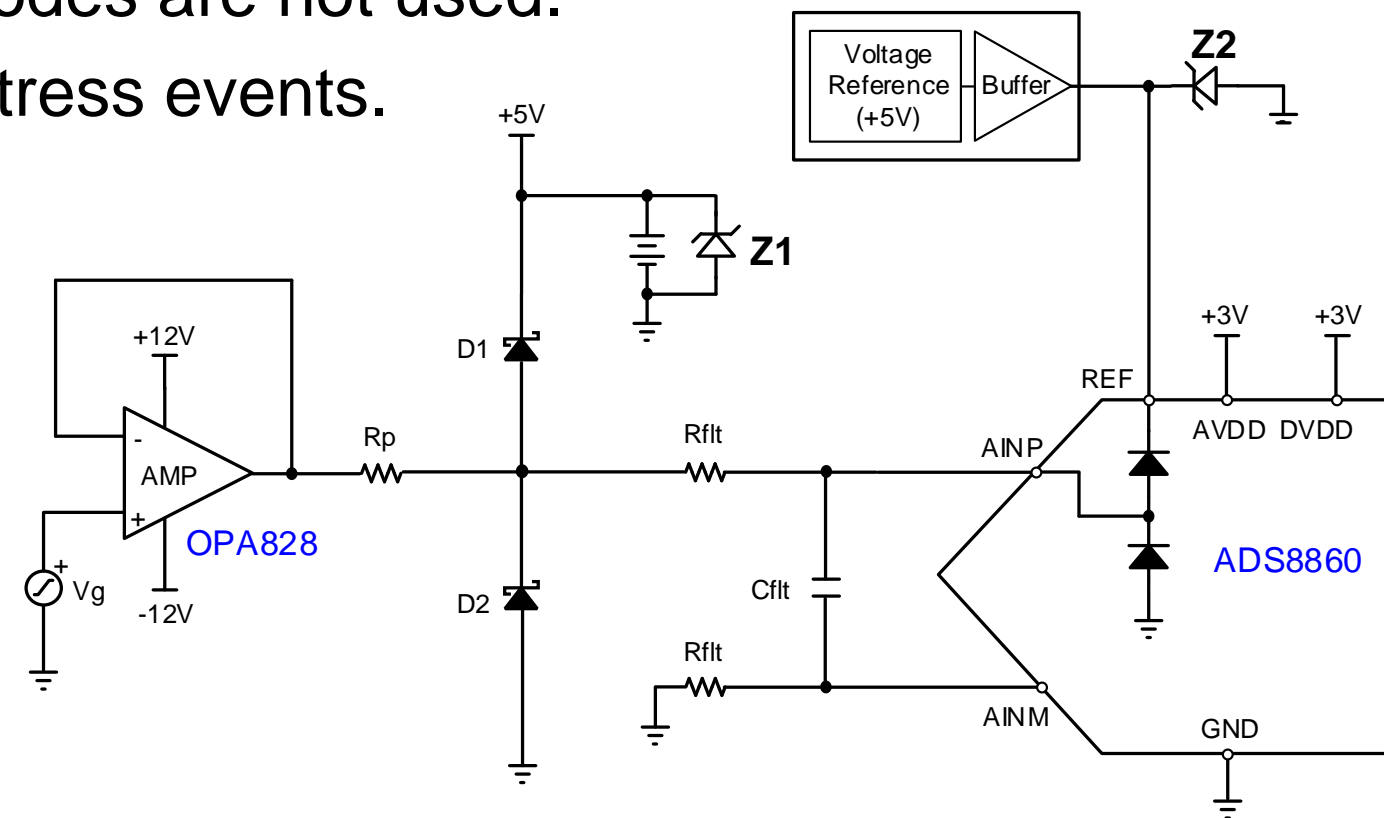
1. For the circuit below, what is the purpose of the TVS diode (Z1) on the 5V supply for the Schottky diodes?

a. The 5V supply may not be able to sink current; the TVS will turn on and limit the voltage for large positive transients.

b. The TVS is only required if the Schottky diodes are not used.

c. The TVS minimizes RF noise during overstress events.

d. The TVS regulates the 5V supply.



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2. (T/F) The internal ESD diodes can be connected to either the analog supply, or digital supply?
 - a. True.
 - b. False.

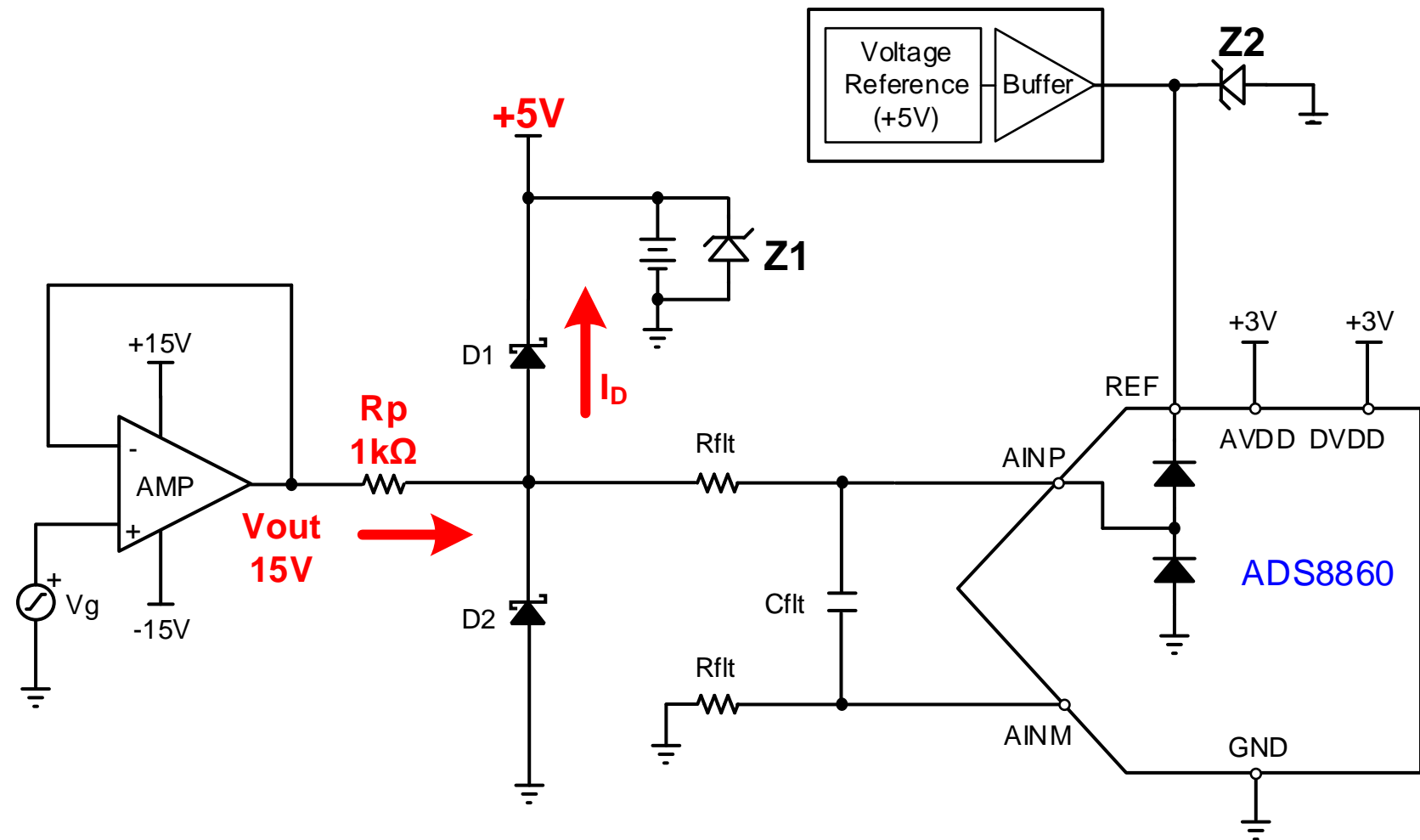
3. (T/F) Schottky diodes have better leakage current than a PN signal diode.
 - a. True.
 - b. False.

4. (T/F) Schottky diodes have lower forward voltage than a PN signal diode.
 - a. True.
 - b. False.

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5. For the circuit below, What is the approximate current in the diode (I_D)?

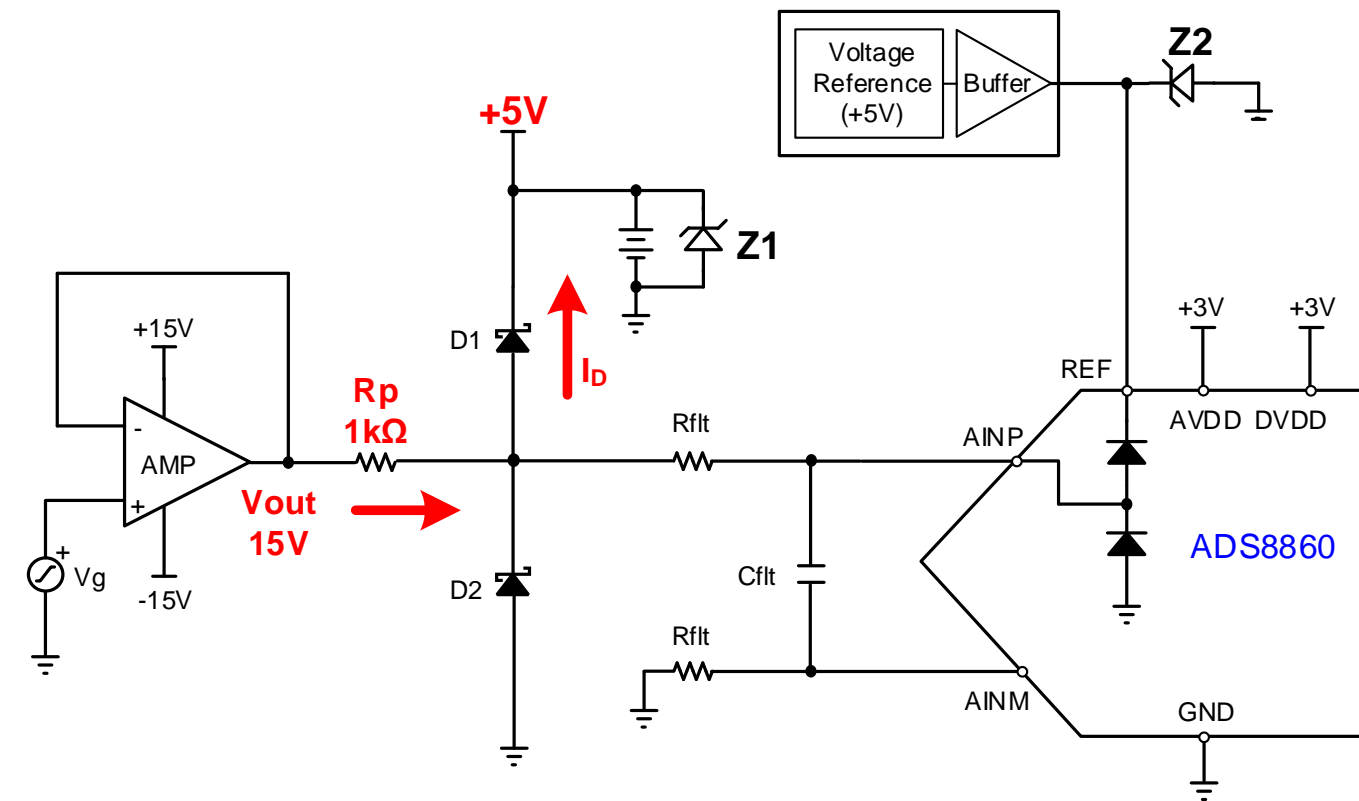
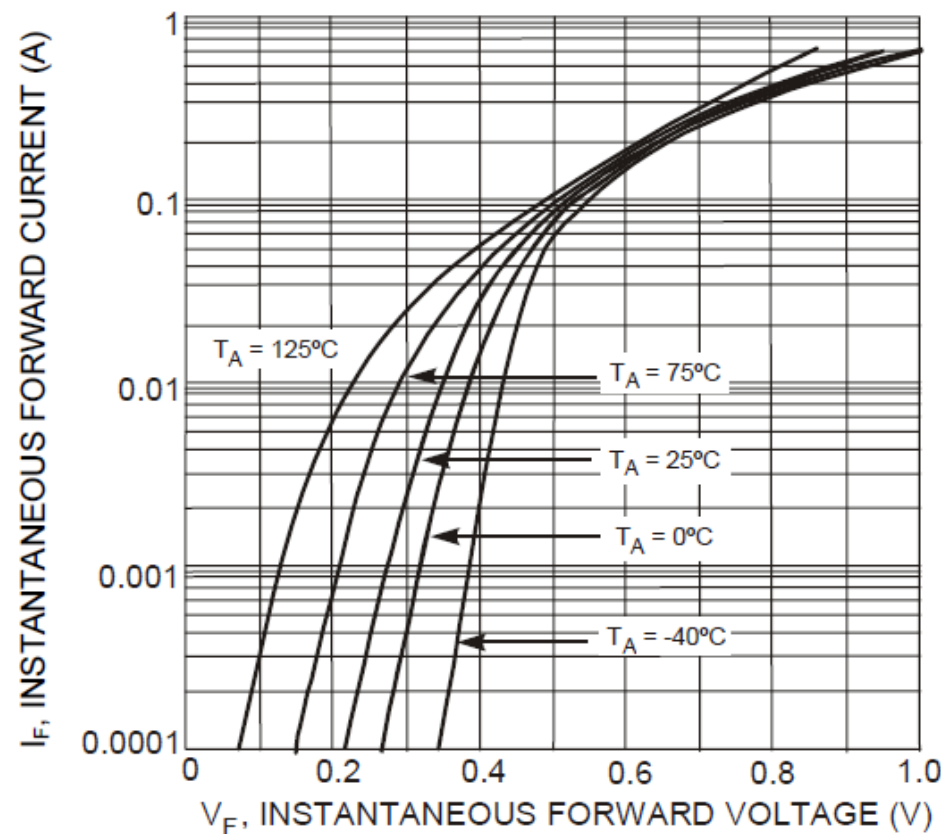
- a. 1mA.
- b. 1.5mA.
- c. 10mA.
- d. 15mA.
- e. 50mA.



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6. Continuing with the circuit from the previous slide, what is the forward voltage drop across D1 at 25C?

- a. 0.2V.
- b. 0.25V.
- c. 0.3V.
- d. 0.35V.**
- e. 0.4V



Questions: Protecting ADC with TVS Diode - Improved

7. Assuming the protection circuit is causing distortion. How can the distortion be reduced?
 - a. Increase the series resistance
 - b. Increase the sampling rate.
 - c. Decrease the sampling rate
 - d. Increase the power rating of the TVS diode