

TN00064

Analog switch application clarification

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Technical note

Document information

Information	Content
Keywords	analog switch reverse leakage current flow
Abstract	This technical note gives a system design recommendation to prevent reverse leakage current flow from logic input pin back to VCC in NXP's analog switch product family



1 Scope

When the system drives the logic input pins higher than VCC (power supply rail), the system sees a reverse leakage current flowing into the logic input pin leaking back to the VCC power rail of the system.

2 Clarification

The leakage is caused by the top side body diode of the logic input pin I/O structure to VCC. This is not a recommended operating condition for analog switch product family, unless the datasheet explicitly states otherwise.

3 System design recommendation

To avoid this leakage, make sure system drives the input logic pin no higher than VCC voltage at all times. For example:

- When VCC is powered off, make sure the input logic pin is not driven by the system.

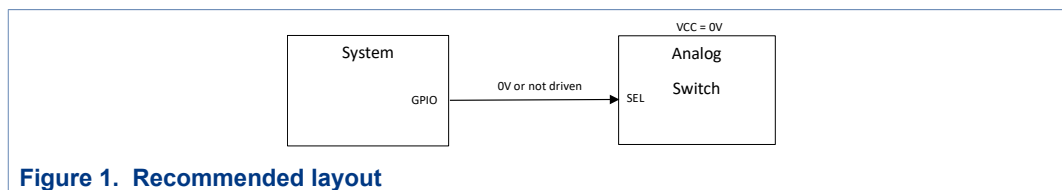


Figure 1. Recommended layout

- For resistor strapping configuration, make sure the pull up resistor is tied to the same VCC power rail as the IC

4 Legal information

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