

POWER SUPPLY SEQUENCING

For proper operation DV_{DD} should be applied first and AV_{DD} simultaneously or within 10ms of DV_{DD}. This ensures that the power on reset circuitry sets the registers to their default values and keep the analog outputs at 0 V until a valid write operation takes place. When AV_{DD} cannot be applied within 10ms of DV_{DD} a hardware reset should be issued. This will trigger the power on reset circuitry and load the default register values. For cases where the power supply applied first has the same or lower voltage than the second supply a schottky diode can be used to supply power until the second power supply turns on. Table 18 lists power supply sequences and the recommended diode connection. Alternatively, a load switch such as the ADP196 can be used to delay the first power supply until the second power supply turns on. Figure 32 shows a typical configuration using the ADP196. In this case the AV_{DD} is applied first. This voltage does not appear at the AV_{DD} pin of the AD5380 until the DV_{DD} is applied and brings the the EN pin high. The result is that the AV_{DD} and DV_{DD} are both applied to the AD5380 at the same time.

Table 18. Power Supply Sequencing

First Power Supply	Second Power Supply	Recommended Operation
AV _{DD} = 3 V	DV _{DD} ≥ 3 V	See Figure 30.
DV _{DD} = 3 V	AV _{DD} ≥ 3 V	See Figure 31.
AV _{DD} = DV _{DD}	DV _{DD} = AV _{DD}	See See Figure 30; assumes separate analog and digital supplies.
DV _{DD} = AV _{DD}	AV _{DD} = DV _{DD}	See Figure 31; assumes separate analog and digital supplies
AV _{DD} = 5 V	DV _{DD} = 3 V	See Figure 32
DV _{DD} = 5 V	AV _{DD} = 3 V	Hardware reset or see Figure 33

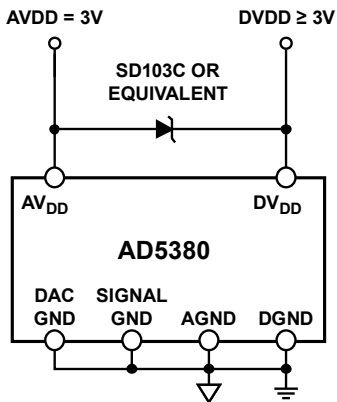


Figure 30. AV_{DD} first followed by DV_{DD}

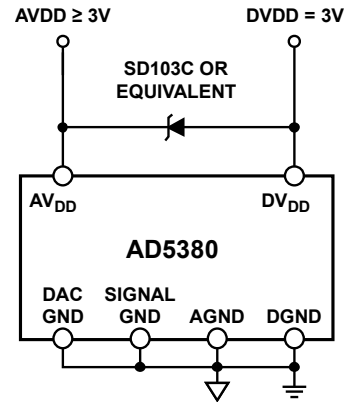


Figure 31. DV_{DD} first followed by AV_{DD}

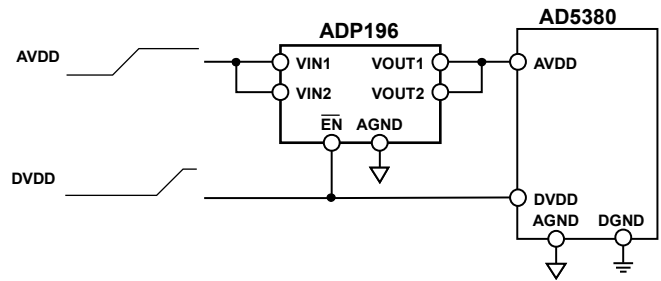


Figure 32. AV_{DD} Power supply controlled by a load switch

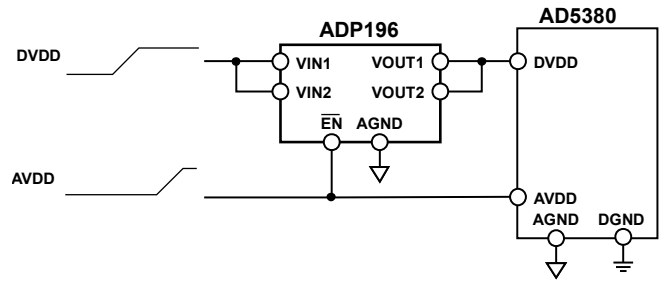


Figure 33. DV_{DD} Power supply controlled by a load switch

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