Because the CPU is kept on in an emulated System OFF mode, it is recommended to add an infinite loop directly after entering System OFF. This prevents the CPU from executing code that normally should not be executed. For more information, see Debug and trace on page 815.

5.3 Power supply supervisors

The power supply supervisors monitor the connected power supply and provide the following functionality.

- Power-on reset — signals the circuit when a supply is connected
- Fixed brownout reset detector — holds the system in reset when the voltage is too low for safe operation
- Optional power-fail comparator (POF) — signals the application when the supply voltage drops below a configured threshold

The power supply supervisors are illustrated in the following figure.

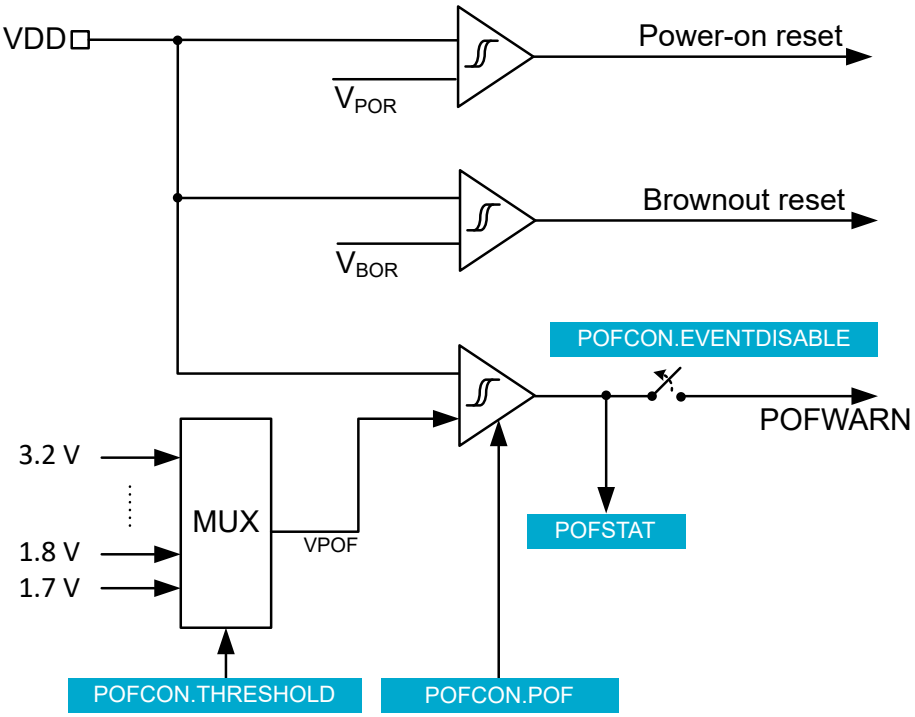

Figure 10: Power supply supervisors

5.3.1 Power-fail comparator

Using the power-fail comparator (POF) is optional. When enabled, it notifies the CPU of a potential power supply failure.

The POF can measure the voltage on **VDD** . To enable and configure the POF, see register POFCON (Retained) on page 99.

When the supply voltage falls below the defined threshold, the POF generates an event POFWARN that can be used by an application to prepare for power failure. This event is also generated when the supply voltage is already below the threshold at the time the POF is enabled, or if the threshold is reconfigured to a level above the supply voltage. POFWARN is disabled using the EVENTDISABLE field of REGULATORS.POFCON. In addition to the event, the result of the POF is found using POFSTAT on page 100.

POFWARN prevents RRAMC from performing write operations to the non-volatile memory. See RRAMC — Resistive random access memory controller on page 47 for more information about non-volatile memory.