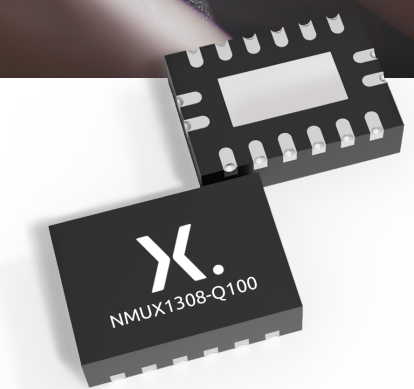


1.8 V General purpose SP8T-Z and 2x SP4T-Z analog switches with injection current control

Nexperia's NMUX130X 1.8 V general purpose analog switch provides improved measurement precision with injection current control with minimal coupling (<1 mV/mA). Other features include lower system power dissipation and complete powered off protection by eliminating backward powering supply rail via both biased I/Os and biased control pins to enable independent supply rail sequencing.



Key technical features

- › Wide operating range: 1.5 V to 5.5 V
- › Control signal pins maintain 1.8V logic compatibility at higher V_{CC}
- › Rail-to-Rail operation of analog signal pins
- › Powered-Down protection: No ESD path from I/O pins to V_{CC}
- › Injection current control: Coupling typically under 1 mV/mA
- › Fail-Safe logic on control signal pins
- › Pin compatible with existing legacy 405x, 485x analog switch products
- › ESD Protection: 2000 V HBM and 750 V CDM
- › -40 °C to 125 °C Operation
- › TSSOP-16 SOT403-1 package
- › DHVQFN16 SOT763-1 package
- › SP8T-Z (NMUX1308) and 2x SP4T-Z (NMUX1309) configurations
- › AEC-Q100 Grade 1 Qualification with zero delamination
- › DHVQFN package with Side-Wettable Flanks enabling Automotive Optical Inspection (AOI) of solder joints

Key benefits

- › Control logic thresholds compatible with low voltage processor and MCUs
- › Maintains Hi-Z isolation between control pins, I/O pins, and VCC during power down.
- › Minimizes ADC measurement error with injection current control

Key applications

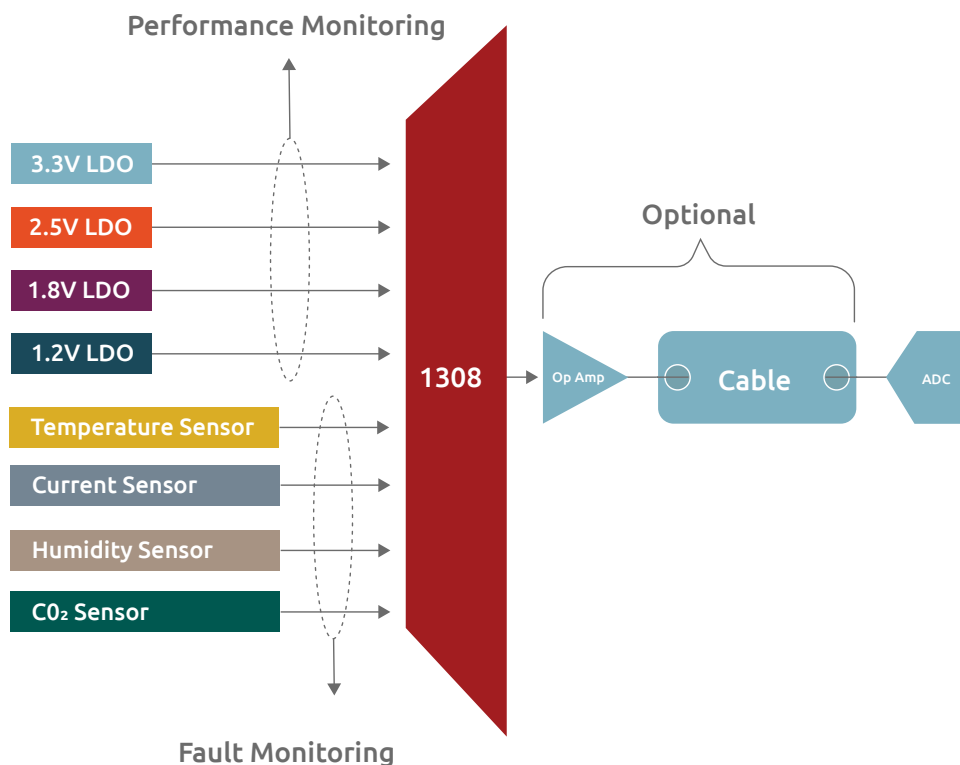
- › ADAS
- › Battery Management Systems
- › Electronic Control Module
- › Telematics Control Unit
- › Automotive Head Unit
- › Appliances
- › Communication systems
- › HVAC
- › Sensor monitoring
- › Rack Server
- › Test and measurement

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Typical Application

The NMUX130X enables more analog monitoring with limited ADCs in sensor monitoring and tuning applications.



Parametrics

Product	V _{CC} Range	R _{ON}	f _(-3 dB)	I _{CC}	I _{S/D}	ΔV _O	Temperature Range
NMUX1308BQ	1.5 V – 5.5 V	60 Ω	328 MHz	1 nA	+/- 1 nA	30 μV/mA	-40°C to +125°C
NMUX1309BQ							
NMUX1308PW	1.5 V – 5.5 V	60 Ω	328 MHz	1 nA	+/- 1 nA	30 μV/mA	-40°C to +125°C
NMUX1309PW							
MUX1308BQ-Q100	1.5 V – 5.5 V	60 Ω	328 MHz	1 nA	+/- 1 nA	30 μV/mA	-40°C to +125°C
MUX1309BQ-Q100							
NMUX1308PW-Q100	1.5 V – 5.5 V	60 Ω	328 MHz	1 nA	+/- 1 nA	30 μV/mA	-40°C to +125°C
NMUX1309PW-Q100							

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