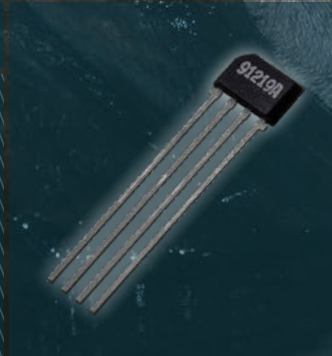


MLX91219

## CONVENTIONAL HALL HIGH-SPEED CURRENT SENSOR



The snout of the platypus is a sensory organ with electroreceptors in the skin of the bill, which allow him to detect the electrical field that gets generated when his prey contracts its muscles. With his 40,000 sensitive electronic sensors, this unique semi-aquatic egg-laying mammal represents our current sensors.

## DUAL OCD, LOW NOISE AND FLEXIBLE SUPPLY FOR INVERTER, AND BATTERY APPLICATIONS

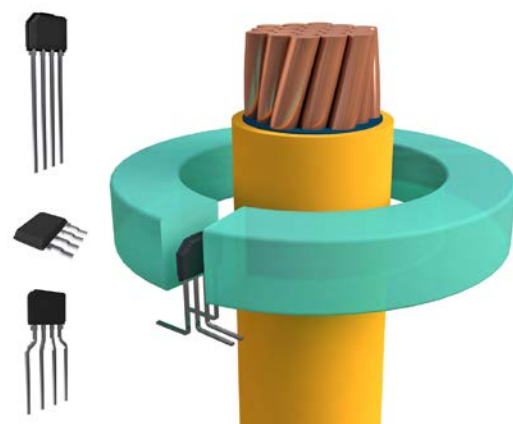
### MLX91219

The MLX91219 is a high-speed high-accuracy conventional hall current sensor simplifying module designs with a dual OverCurrent Detection (OCD) functionality, a flexible supply 3.3V/5V and an improved SNR. With the hall technology - using a ferromagnetic core - currents can be measured in the ranges of 200A to beyond 2000A.

The MLX91219 comes in 2 package variants: VA & SOIC8. The VA is a thin through hole package well suited for placement inside the core airgap, especially with the several Trim&Form options available. The thin package body combined with a high Signal-to-Noise Ratio (SNR) leads to unparalleled performance levels. Next to the classic VDD/OUT/GND pins, an OCD pin is offered which internalizes the sensor output's window comparator often required on automotive boards aiming to protect the power electronics from short circuits or overcurrents in general. This integrated feature saves board space and BoM cost, with a current level that can be programmed within or outside of the linear sensing range. The SOIC8 package offers the same electrical performance, with the difference of being a fully surface mount solution amended with additional package pins such as the VREF pin which enables either a non-ratiometric output mode or serves as an input pin defining the 0Amp level around which the sensor will build the output signal.

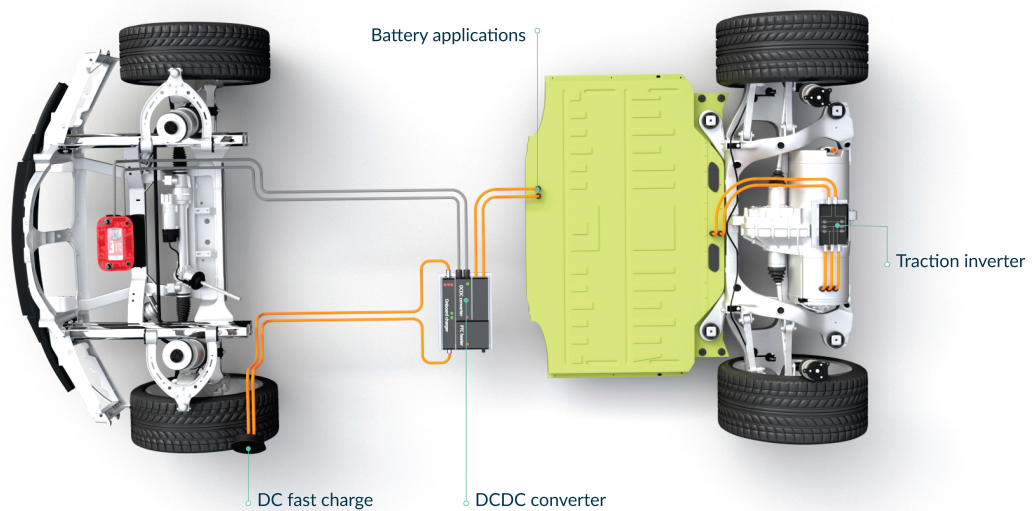
### APPLICATIONS

- ✓ Redundant monitoring of battery-management system (BMS)
- ✓ High Voltage Traction inverters (HV)
  - Phase current measurement
  - DC link current measurement
- ✓ 48V Boost-recuperation machines (48V)
  - Phase current measurement
  - DC link current measurement
- ✓ DCDC Converter
- ✓ Smart Battery Junction Boxes
- ✓ Smart Fuse Overcurrent Detection



## KEY FEATURES

- ✓ Dual overcurrent detection
  - Internal threshold
  - External threshold (SOIC8 package)
- ✓ Flexible Supply Voltage
  - 5V mode and 3.3V mode (factory selectable)
- ✓ Selectable analog output
  - Ratiometric or fixed ( $V_{REF}$ )
- ✓ High speed
  - DC to 400 kHz bandwidth
  - 2 $\mu$ s response time
- ✓ Measurement range
  - for current from 200 to beyond 2000 A
- ✓ Low noise
- ✓ End-of-line programmable sensor
- ✓ High linearity down to  $\pm 0.3\%$  full scale
- ✓ Very low thermal drift for wide temperature range
  - Offset drift ( $< 5\text{mV}$ )
  - Sensitivity drift ( $< 1\%$ )
- ✓ Package RoHS compliant
  - SOIC-8 (DC) package, MSL-3
  - SIP4-VA (VA) package, MSL-1
- ✓ AEC-Q100 – Grade 0 Automotive Qualified



## BLOCK DIAGRAM

