Melexis
INSPIRED ENGINEERING

MLX91220 & MLX91221

HIGH-SPEED ISOLATED INTEGRATED HALL 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.

FACTORY-TRIMMED 300 kHz ISOLATED INTEGRATED CURRENT SENSOR

MLX91220/21

The MLX91220 series defines Melexis' next-generation high-speed isolated integrated current sensor. The Hall-effect based current sensors are qualified for use in a wide range of automotive and industrial applications, such as on-board chargers (OBC), DC/DC converters, power supplies, and small electric drives.
By combining sensing elements, signal conditioning and voltage isolation into a small footprint surface mount package, it is de facto the easiest all-in-one integrated current sensor. Two package variants are offered, with different creepage and clearance and rated isolation voltages.
With 300 kHz bandwidth, the MLX91220 and MLX91221 suit a variety of power conversion applications supporting current measurements lower than 50 A. The sensor is robust against shorter transients beyond 50 A.

The MLX91220 and MLX91221 differ only in the supply voltage at which they operate:
MLX91220: operates on 5 V supply
MLX91221: operates on 3.3 V supply

KEY FEATURES

- Factory trimmed AC and DC current sensor
- Analog ratiometric or fixed output voltage
- Combining sensing element, signal conditioning & isolation in a miniature surface mount package
- No application programming required
- High speed sensing
  - DC to 300kHz bandwidth
  - 2µs response time
- Robust against external magnetic fields
- No magnetic hysteresis
- Double overcurrent detection (SOIC-16)
- Low ohmic losses of integrated conductor
  - 0.9mΩ SOIC-8
  - 0.75mΩ SOIC-16
- RoHS compliant packages
  - SOIC-8 narrow body
  - SOIC-16 wide
- Lead free component, suitable for lead free soldering profile up to 260°C, MSL3
- Rated voltage isolation as per IEC/UL 62368-1:2014
  - 2.4 kV RMS for SOIC-8
  - 4.8 kV RMS for SOIC-16
- AEC-Q100 automotive qualified

V1/03-12-20

FOR MORE INFORMATION: WWW.MELEXIS.COM/MLX91220
WWW.MELEXIS.COM/MLX91221

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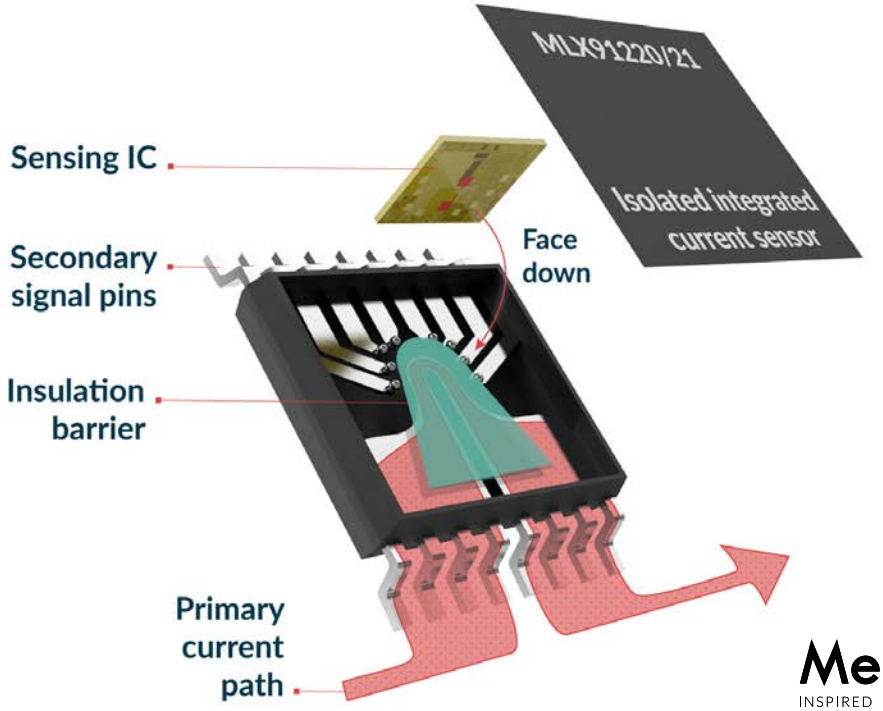
ISOLATED INTEGRATED CURRENT SENSOR IC

FOR AC & DC CURRENT MESUREMENT UP TO 50A



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APPLICATIONS

Automotive

- OBC (On Board Charger)
- DCDC converter high side
- PTC heater
- E-compressor
- EESM (Electrically Excited Synchronous Motor) low rotor current

Industrial

- Small electric drives and HVAC compressor
- Power supplies (Uninterrupted or Switch mode)
- Solar (Input current and Maximum Power Point Tracking)
- White goods and demand/load control
- EVSE (Electric Vehicle Supply Equipment) such as emmergency charging cables, AC chargers, DC fast chargers