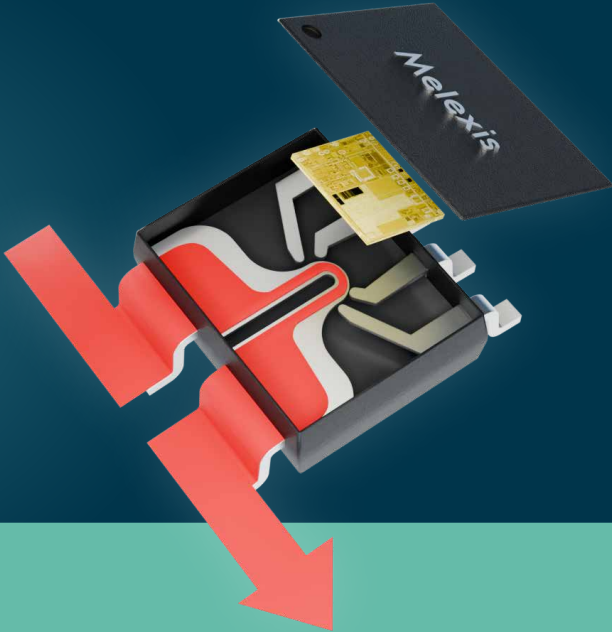


INTEGRATED PRIMARY CURRENT SENSORS (Coreless integrated)

Melexis coreless integrated current sensors combine differential Hall-effect sensing elements, signal conditioning, and high-voltage isolation within a low-loss SOIC package.

Unlike discrete shunt and amplifier solutions that rely on higher resistance to generate a measurable voltage, current flows directly through a low-impedance integrated conductor optimized to minimize thermal losses while maximizing surge and overload robustness.



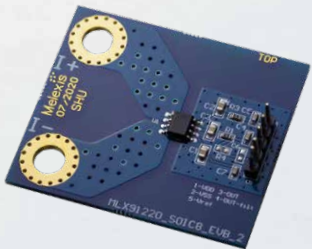
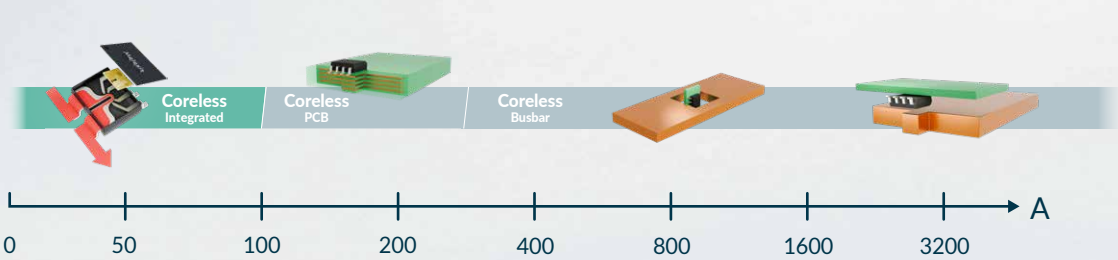
Key features

- ✓ **Integrated current sensors:** multiple packages options featuring integrated conductors with low-ohmic losses
- ✓ **High rated voltage isolation:** up to 3.55 kV_{RMS} for narrow body packages and 5.4 kV_{RMS} for wide body packages
- ✓ **Coreless:** hysteresis-free differential measurement for robust stray-field immunity
- ✓ **High-speed performance:** up to 400 kHz analog output (fixed or ratiometric, bipolar or unipolar)
- ✓ **Diagnostics & safety:** overcurrent detection (internal and/or external) output and ASIL B compliance



Comparison

Supply voltage 5V / 3.3V	Package	RMS	Surge current	Primary resistance
MLX91220 / MLX91221 QM	DC (FC-SOIC-8 NB) DF (FC SOIC-16 WB)	35 A _{RMS} 40 A _{RMS}	< 4 kA < 5 kA	1.1 mΩ 0.9 mΩ
MLX91224 / MLX91225 ASIL B	DE (fused leads SOIC-6 NB) DG (SOIC-16 WB) DH (fused leads SOIC-12 WB)	40 A _{RMS} 40 A _{RMS} 100 A _{RMS}	< 9 kA < 20 kA < 29 kA	0.6 mΩ 0.7 mΩ 0.2 mΩ



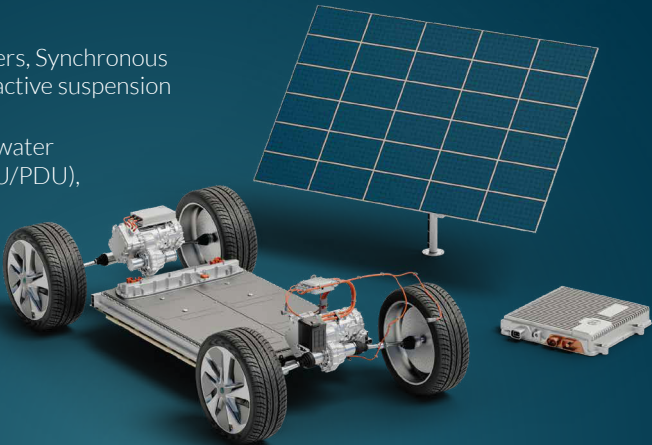
Development kit available

Applications

Automotive: On-Board Chargers (OBC), DC/DC converters, Synchronous motor rotor exciters, HVAC E-compressors, PTC heaters, active suspension

Industrial & electrification: Solar grid-tie inverters, solar water pumps, datacenter Power Supply & Distribution Units (PSU/PDU), power conversion systems (PCS)

Motion & appliances: Variable frequency drives (VFD), HVAC/refrigeration compressors, pumps, industrial automation, and home appliances



www.melexis.com/coreless-integrated