

Infineon's semiconductor solutions for CAV applications



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가상부스에 오신 걸 환영합니다!



Market trends – Electrification in Commercial, construction and agricultural vehicles (CAV)

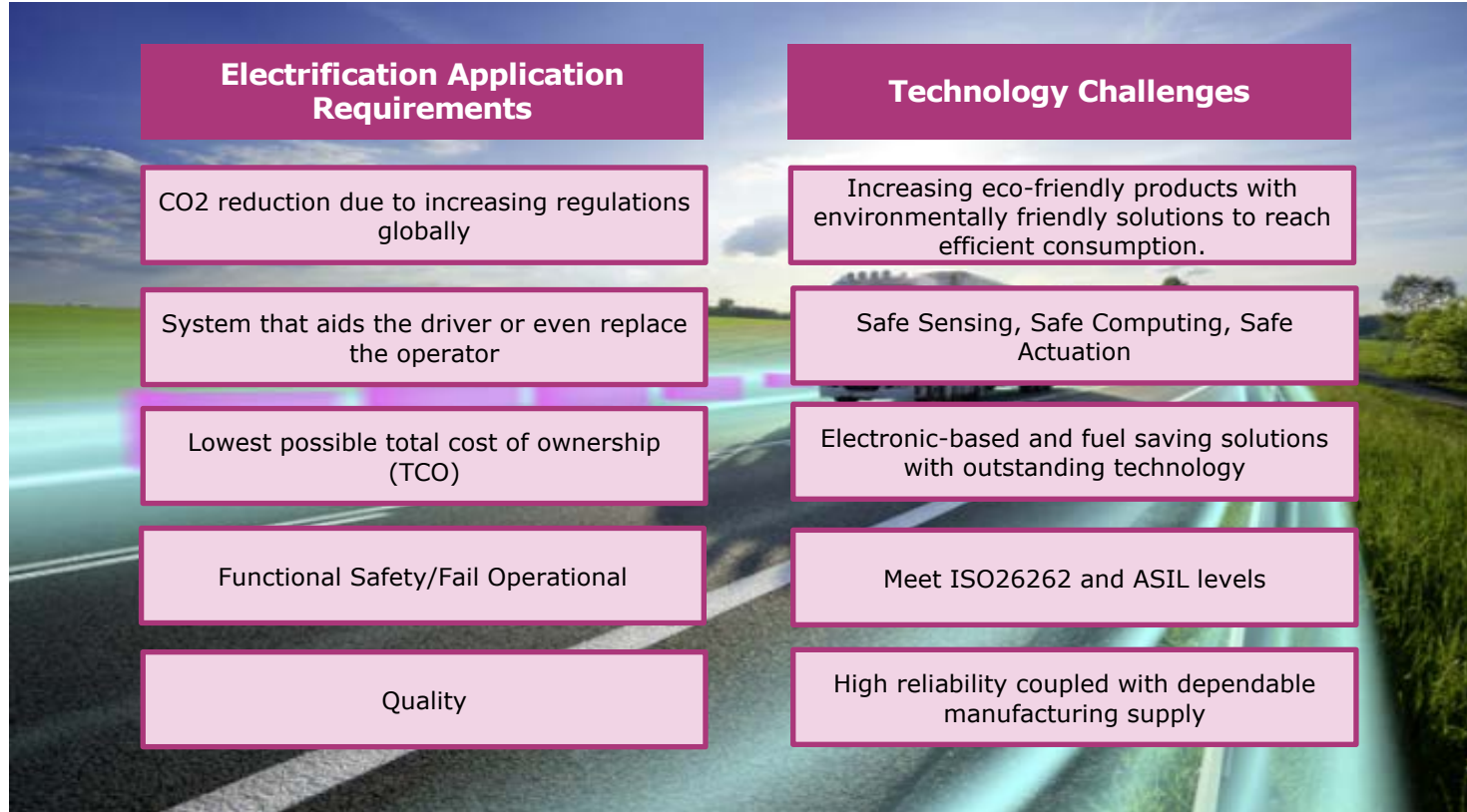


CO₂ reduction regulations

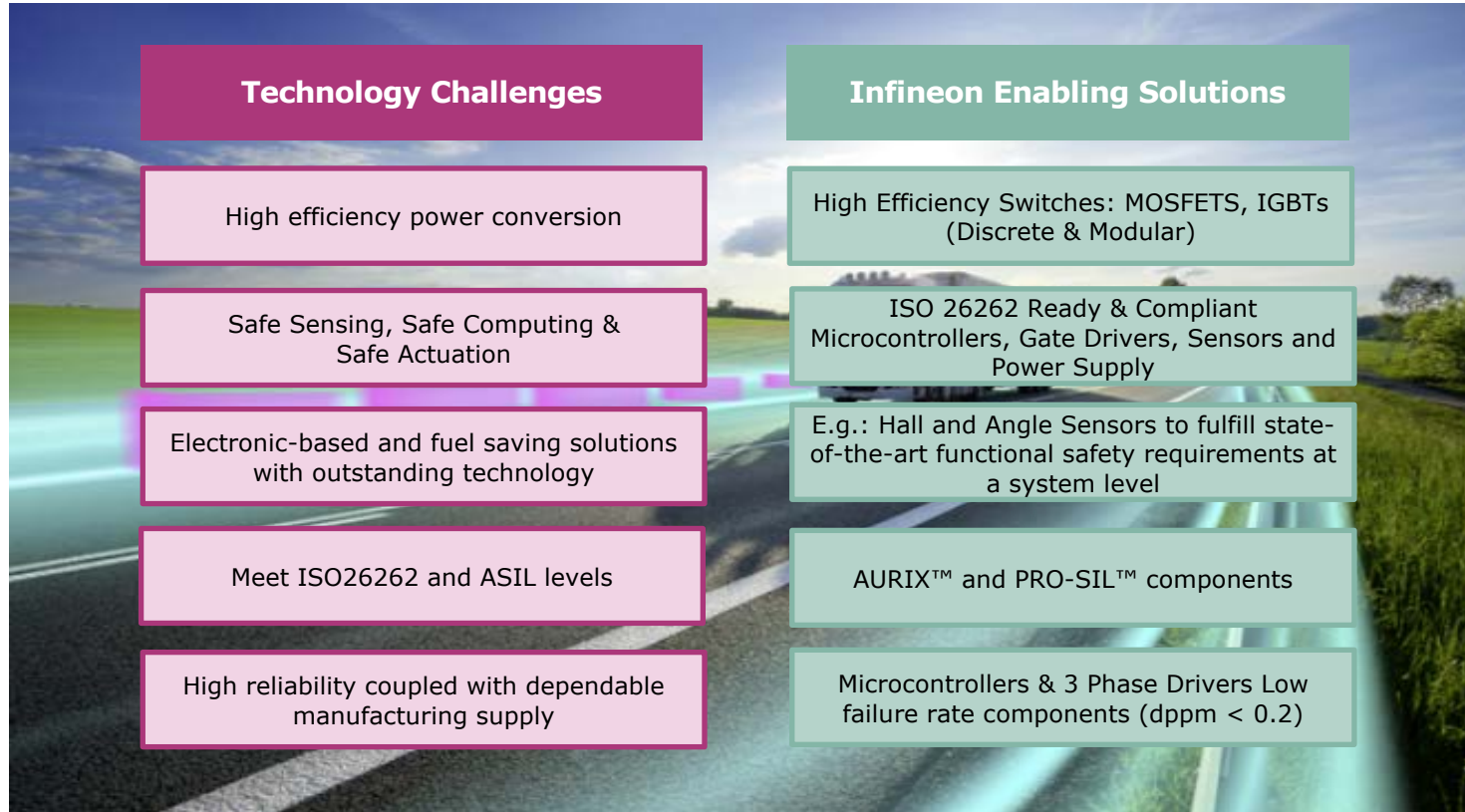
Safety regulations

High reliability and secured manufacturing supply

Technology/Market Challenges Today: Electrification in CAV

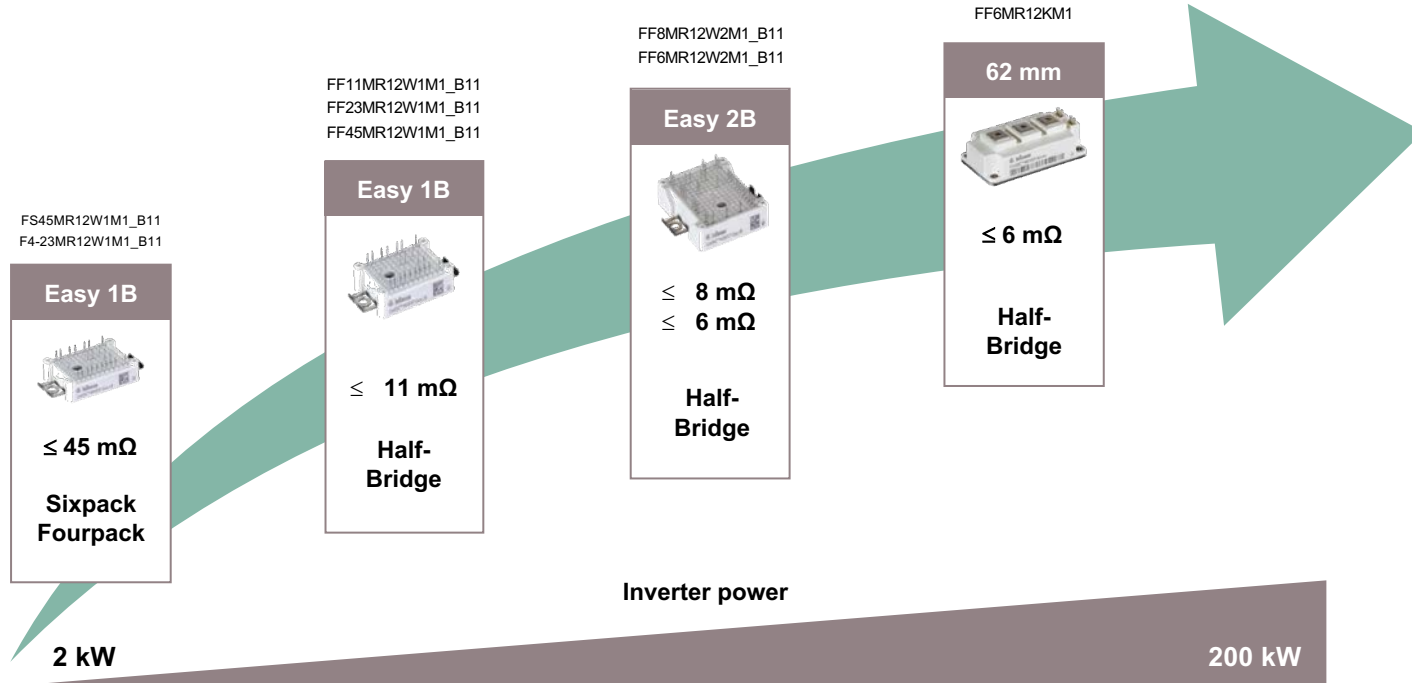


Technology/Market Solutions: Electrification in CAV

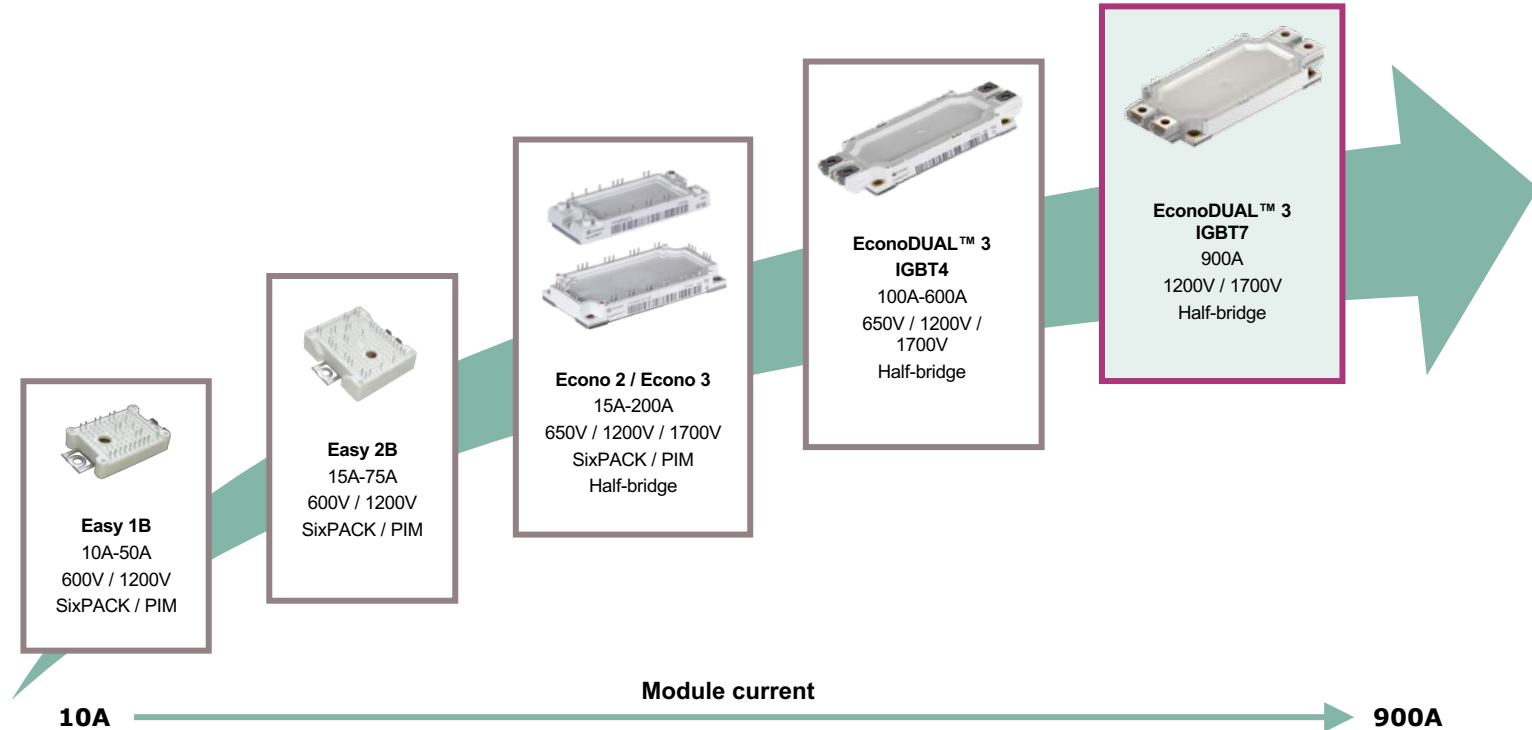


CoolSiC™ MOSFETs

Power modules for auxiliary drives

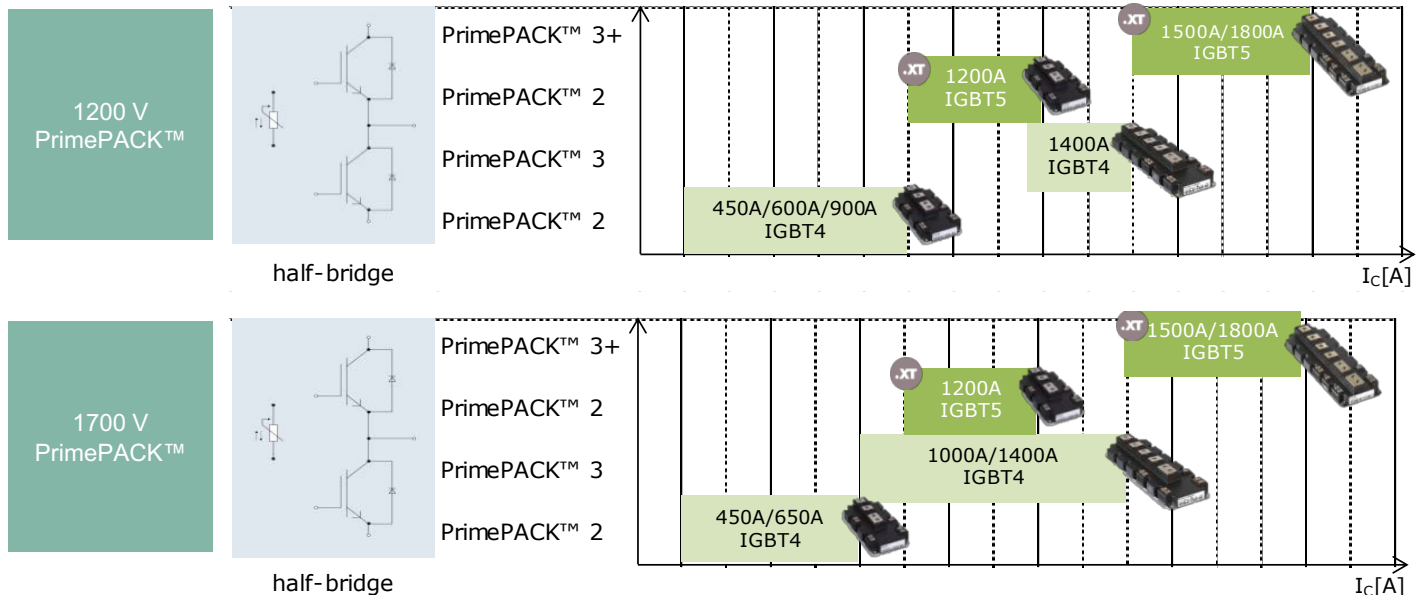


Power modules for CAV

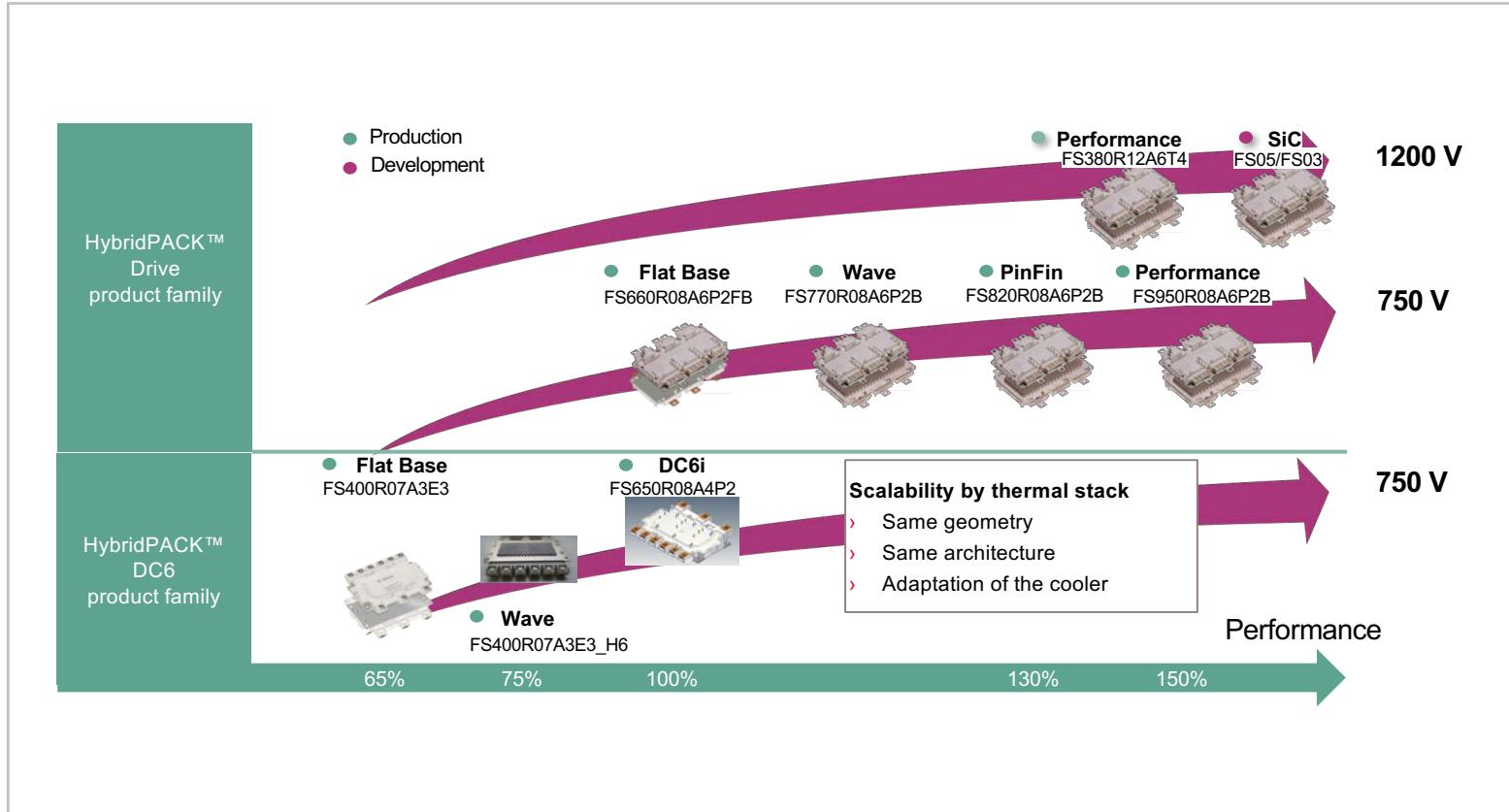


PrimePACK™ IGBT5 portfolio

Extending power range and lifetime



Fully automotive qualified power modules from 80 kW to >200 kW inverters: HybridPACK™ Drive and HybridPACK™ DC6



Evaluation Tools HybridPACK™ Drive - enabling customer designs



Evaluation Gate Driver Board

Gate Driver Board compatible to all HybridPACK™ Drive EDT2 750V modules and 1200V modules

- › 6 channel driver PCB
- › With latest Infineon EiceDRIVER™ Sense & Boost



Inverter Evaluation Kit for “HybridPACK™ Drive”

Inverter Evaluation Kit HYBRID KIT DRIVE

- › Main inverter evaluation Kit including HybridPACK™ Drive FS820R08A6P2B
- › With gate driver board, DC link capacitor, reference aluminum cooler and logic board



Inverter Evaluation Kit for “HybridPACK™ Drive”

Inverter Evaluation Kit HYBRID KIT DRIVE SENSE

- › Main inverter evaluation Kit including HybridPACK™ Drive FS820R08A6P2LB
- › With gate driver board, DC link capacitor, reference aluminum cooler, logic board and LEM current sensor



HybridPACK™ Drive Thermal Test PCB

Rigid-flex PCB for IR-Thermal Measurements

- › Creepage distance designed for up to 800V working voltage
- › Easy to Use: Electric isolation due to optical measurement
- › Total overview vs. single points thermo-element measurement

AURIX™ addresses CAV requirements and challenges

Performance



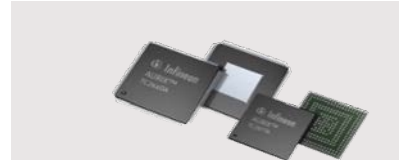
- › **Multi-core technology**
- › HW accelerators
- › Floating-point unit

Functional safety & security



- › Platform safety concept: ISO26262
- › **IEC 61508 documentation**
- › 32-bit programmable security hardware

Scalability



- › Pinout compatibility
- › **Scalable HW:**
- › 1 – 6 TriCore™ cores
- › 133 – 300 MHz
- › 512 kB – 16 MB Flash
- › 48 kB – 7 MB RAM

Perfect match with
OPTIREG™ PMIC

Enablement









- › Expert tools
- › Free tool chain
- › Technical experts
- › Reference designs
- › **Preferred design house support**

Long-term supply
availability and supply
security

Automotive quality
standards

The growing Infineon angle sensor portfolio

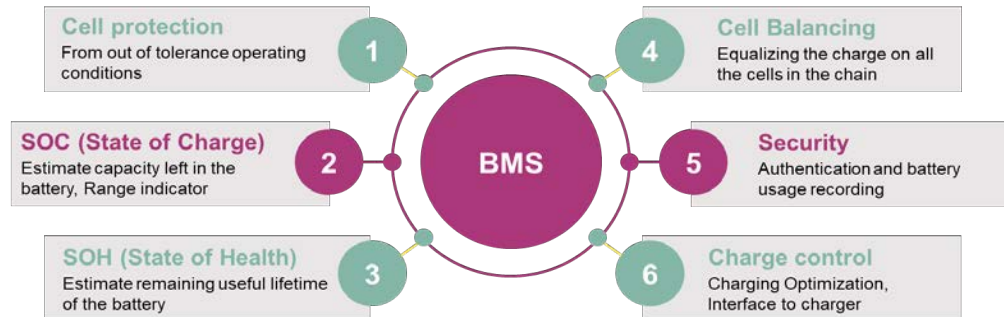
	iAMR	iGMR	iTMR
 <p>Digital angle</p>  <p>0110100</p>		TLI5012B TLE5012B(D) TLE5014S16(D) TLE5014P16(D) TLE5014C16(D) TLE5014SP(D) NEW	
 <p>Digital sin/cos</p>  <p>0110100 1101010</p>		TLE5011	
 <p>Analog sin/cos</p> 	TLE5109A16(D)	TLE5009 TLE5009A16(D) TLE5309D	TLE5501

(D) = Single and dual die
 D = Dual die only

Battery management system in CAV

Functional safety at Infineon

Every Li-Ion battery needs a
“Battery management system”



Automotive



Capacity:

- ~1kWh HEV
- ~10kWh PHEV
- ~100kWh BEV

Usually 400V to 800V
NCA and NMC are mainstream



CAV



Capacity:

- ~200kWh Light duty truck
- > 600kWh Bus/Truck

Usual Voltage >800V
Usually LFP chemistry



Energy Storage



Capacity:

- ~10kWh Home Storage
- > 1000kWh industrial Energy storage

Voltage 48V... 800V
Different chemistries: LFP



BAP Sensors for Battery Management Systems (BMS)



Battery Management



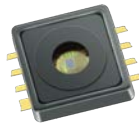
- › Battery Management System (BMS): Thermal Runaway

Products

- › Analogue interface: KP236N6165
- › Digital interface: KP256, KP253



KP25x - Barometric Air Pressure Sensor With Digital Interface



Features

- › 10-bit & 12bit* SPI interface for μC
- › High accuracy absolute pressure sensing
- › Integrated temperature sensor
- › Operating temperature up to 140°C
- › Customer specific transfer functions
- › Self diagnosis capability
- › Automotive qualified (AEC-Q100)

Get your share with Infineon's system solution excellence:

In a nutshell...



- › **CAV** includes truck, buses, forklift, agriculture and construction vehicles
- › Infineon is responding to the megatrend **Electrification (CO2 regulations)** with our system solution excellence (TCO)



- › Long term **growth drivers**: electrification and autonomous driving; a truck remains a truck
- › Growing production of CAV with **growing electronic content**



- › **Innovation, safety and reliability**
- › Long-term **availability** of products & long-term **business**
- › Infineon has the largest portfolio for the CAV market: **Sense – Control – Actuate & Enablement**





Part of your life. Part of tomorrow.