BMA7118 and BMA7418:

ASIL D Battery Cell Controllers with high sync, dedicated ADC per channel and EIS

BMA7118 and BMA7418 are Automotive Li-ion battery cell controller ICs with a dedicated, high accuracy ADC per voltage measurement channel with high synchronization capability. BMA7418 integrates a DFT required for EIS (Electrochemical Impedance Spectroscopy). Introducing a product family approach where products are pin compatible and use the same software, you can upgrade to EIS at low cost. BMA7118 and BMA7418 offer low 4mA current consumption due to its integrated DC-to-DC converter. A fully redundant and independent internal architecture achieves ASIL D Functional SafetyTarget applications

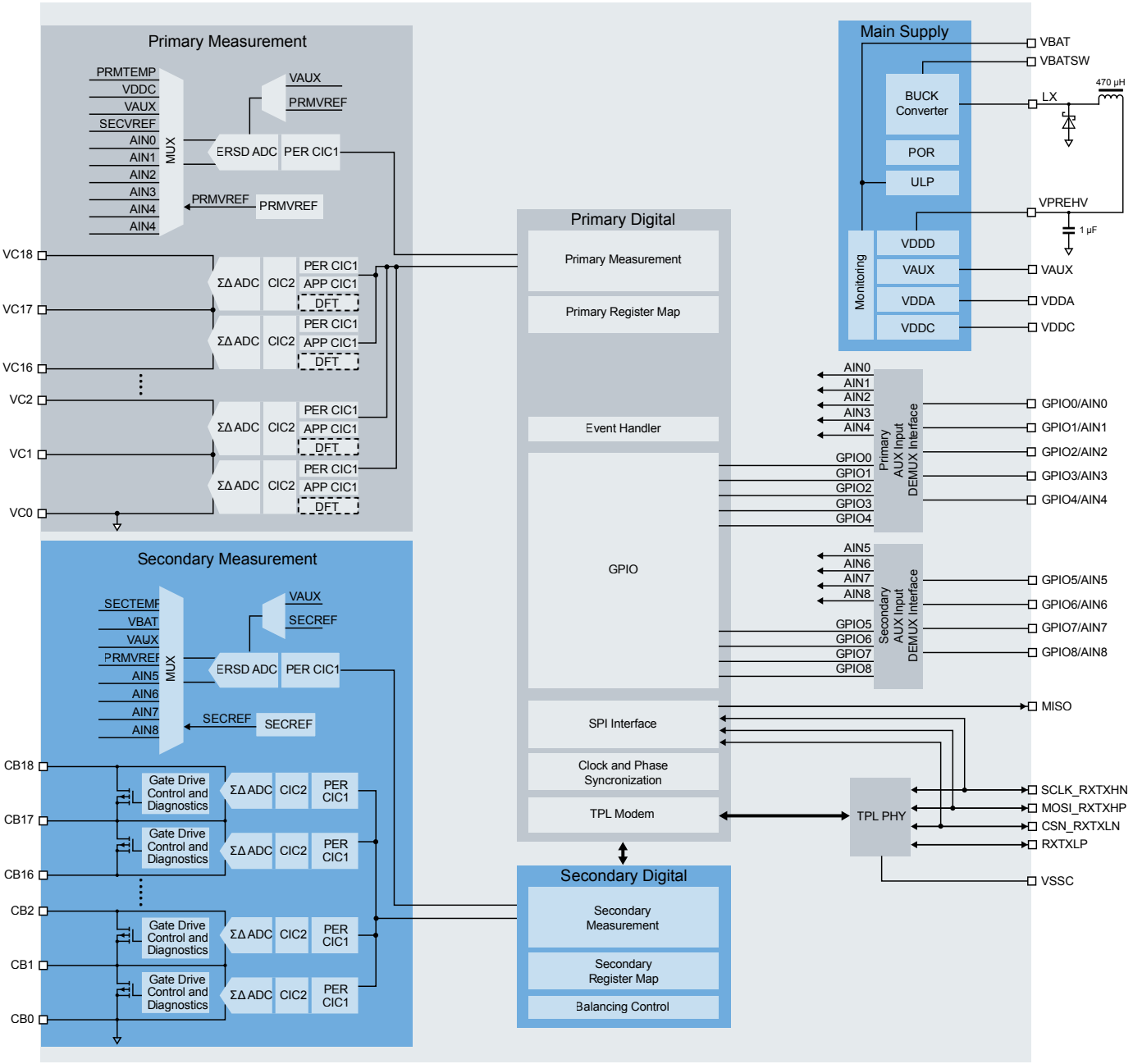
Key features

- From 8 to 18 cells per device
- Dedicated, high accuracy ADC per voltage measurement channel with high synchronization capability required for EIS
- Integrated DFT (BMA7418 only)
- Typical ±0.8 mV measurement error with ultra low long-term drift
- ISO 26262 ASIL D support for cell voltage and temperature measurements
- Passive cell balancing with Timer/ Voltage/ PWM/ Temperature controlling methods
- External temperature and auxiliary voltage measurements
- Isolated daisy chain up to 62 nodes or SPI communication
- Diagnostics, functional safety and robustness
- Low external BOM cost

Target applications

- **Automotive:**
  - Electric vehicle high voltage battery management
  - Electric vehicle 48V battery management
- **Industrial:**
  - Utility ESS
  - Commercial ESS
  - Residential ESS
  - Micromobility
  - eBike/eScooter

Main application block diagram



Orderable samples

Part Number	Temp Range	Other features	Other Features	Package
MBMA7118TA1AE	-40°C~125°C	TPL	9 GPIO	QLFP 64 Pin
MBMA7118SA1AE	-40°C~125°C	SPI	9 GPIO	QLFP 64 Pin
MBMA7418TA1AE	-40°C~125°C	TPL	9 GPIO	QLFP 64 Pin
MBMA7418SA1AE	-40°C~125°C	SPI	9 GPIO	QLFP 64 Pin

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