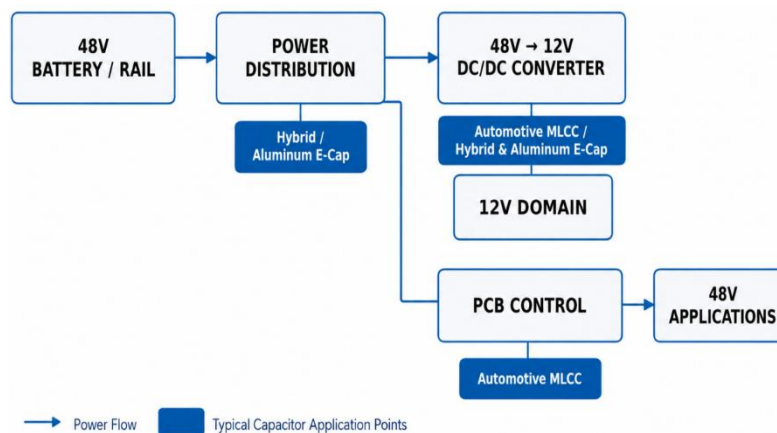


48V Automotive Systems: Samwha Capacitor Solutions

Automotive electrical architectures are increasingly integrating 48V systems alongside traditional 12V networks as vehicle electrification and electrical loads continue to grow. Using a higher voltage allows the same power to be delivered with lower current, helping improve power distribution efficiency and reduce cable size and weight for higher power auxiliary functions. This trend also creates new design considerations for capacitors used in power conversion, filtering and electronic control circuits.

48V Typical Capacitor Application Points



* Component selection depends on circuit conditions, rated voltage, DC bias (MLCC), temperature, ripple current and qualification requirements.

SAMWHA Solutions for 48V Automotive

AUTOMOTIVE MLCC	HYBRID & ALUMINUM E-CAP
 Automotive MLCC (Samwha CQ Series)	 Hybrid Polymer / Aluminum Electrolytic Capacitors
Primary role: Decoupling, bypass, DC line noise filtering	Primary role: Power smoothing, energy buffering
Typical application points: PCB control circuits, DC/DC converters and motor control PCBs	Typical application points: Power distribution and DC/DC converters
Design value: Compact size, effective noise filtering on DC power lines	Design value: Ripple current handling, voltage stabilization
Samwha Product scope: DC rated Automotive MLCC (CQ Series) 0402 – 2220 / C0G, X7R, X8R / 25V – 630V / 1pF – 47µF	Samwha Product scope: Hybrid & Aluminum Electrolytic Capacitors Temp. 105 – 150°C / 1000h – 10000h / 25V – 100V / 10µF – 820µF
Selection focus: Rated voltage, DC bias, temperature, AEC-Q200	Selection focus: Ripple current, ESR, temperature, endurance, AEC-Q200

From DC line decoupling and filtering to power smoothing and energy buffering, SAMWHA provides capacitor solutions for evolving 48V automotive architectures.

• For more Information : Please contact SAMWHA Europe (europe@samwha.com)