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IC

ROHM SEMICONDUCTOR

Achieves dramatic miniaturization, reliability, and energy savings in 400VAC industrial equipment

The Industry's First AC/DC Converter ICs with Built-in 1,700V SiC MOSFET

BM2SCQ12xT-LBZ

*ROHM September 2019 study

Greater miniaturization

Achieves breakthrough miniaturization by replacing 12 components and heat sink with a single package

Higher reliability

Reduces design/mounting man-hours and risk while multiple built-in protection functions provide superior reliability

Improved efficiency with lower loss

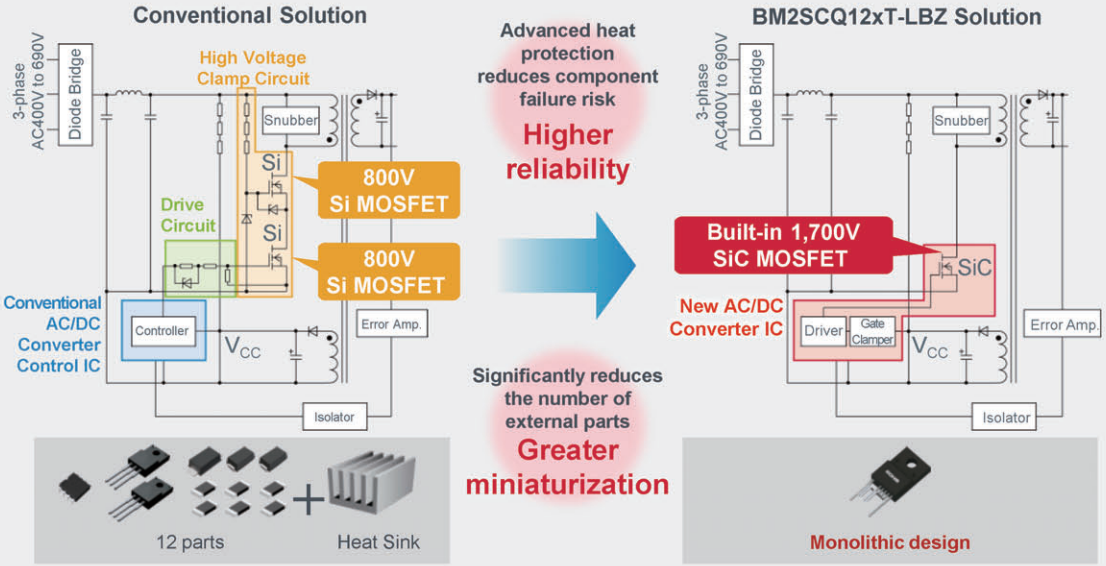
Maximizes SiC MOSFET performance to achieve dramatically improved power savings

BM2SCQ12xT-LB
TO220-6M Package
10.0 × 4.5 × 25.6mm

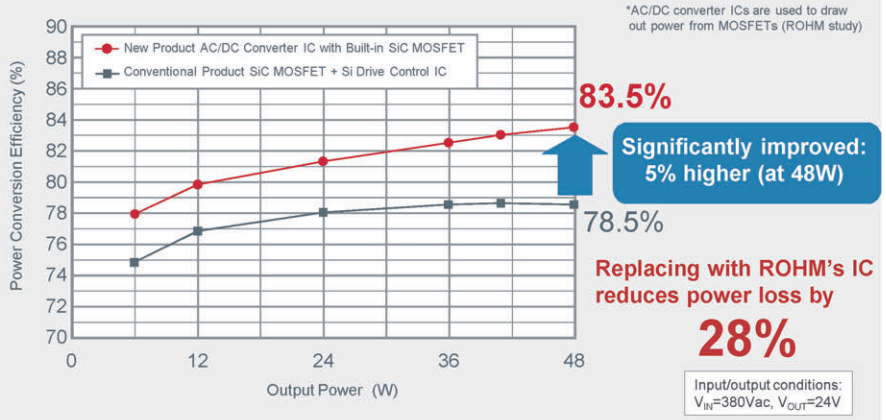
Evaluation Board Available (For Purchase)

BM2SCQ123T-EVK-001

Application Circuit and Adoption Results



AC Converter Efficiency Comparison: Si vs SiC



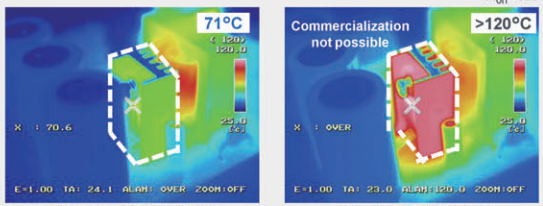
The optimized gate drive circuit maximizes SiC MOSFET performance, improving efficiency by up to 5%

Temperature Comparison: Si-MOSFET vs SiC

V_{IN} = 400Vac, Ta = 25℃

Si-MOSFET + Heat Sink

R_{on}=6Ω

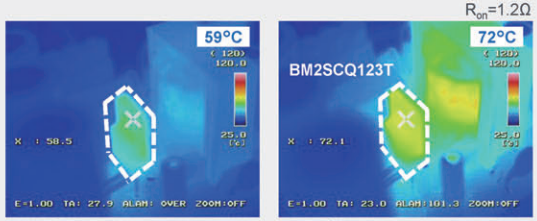


Output Power: 12W　　Output Power: **48W**

Output limited to 12W due to thermal issues (48W output not possible)

BM2SCQ12xT-LB (Built-in SiC MOSFET)*No heat sink

R_{on}=1.2Ω

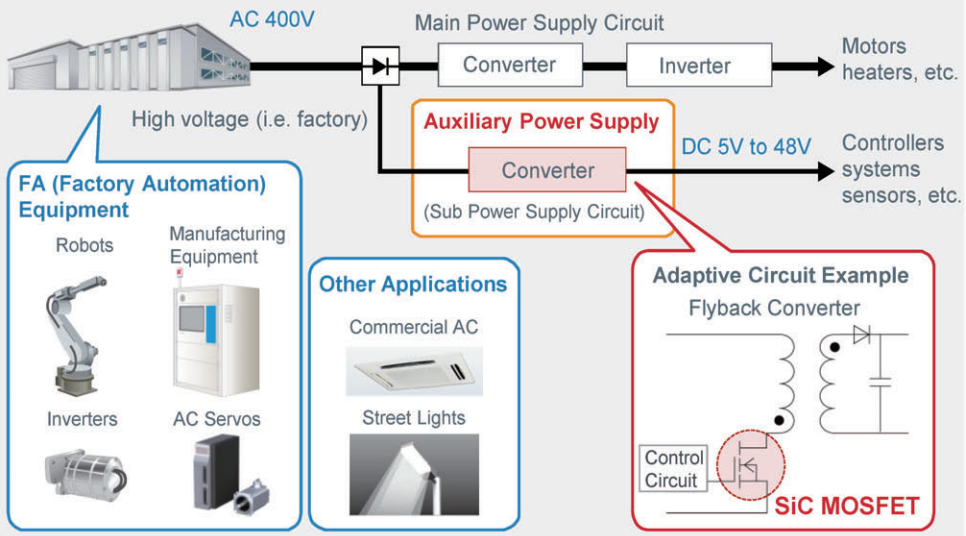


Output Power: 12W　　Output Power: **48W**

48W output possible without a heat sink

Application Diagram

Optimized for auxiliary power supply circuits in 400VAC industrial equipment:
・General-purpose inverters ・AC servos ・PLCs (Programmable Logic Controllers)
・Manufacturing equipment ・Robots ・Industrial AC ・Industrial lighting (i.e. street lamps)

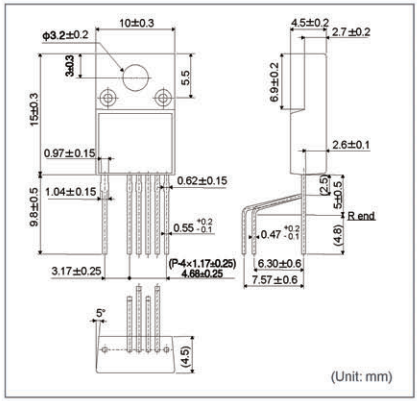


AC/DC Converter IC with Built-in SiC MOSFET Lineup

Part No.	Supply Voltage	Normal Operating Current Typ (μA)	Burst Operating Current Typ (μA)	Max Operating Frequency Typ (kHz)	FB OLP	VCC OVP	Operating Temp. (°C)	Package
New BM2SCQ121T-LBZ	VCC: 15.0 to 27.5V DRAIN: 1,700V(Max)	2,000	500	120	Auto Restart	Latch	-40 to +105	TO220-6M
New BM2SCQ122T-LBZ					Latch	Latch		
New BM2SCQ123T-LBZ*					Auto Restart	Auto Restart		
New BM2SCQ124T-LBZ					Latch	Auto Restart		

*An evaluation board compatible with universal AC input is available. For more information, please visit ROHM's website.

External Dimensions



The content specified in this document is correct as of September 1st, 2019.

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