



Electronics for the Future

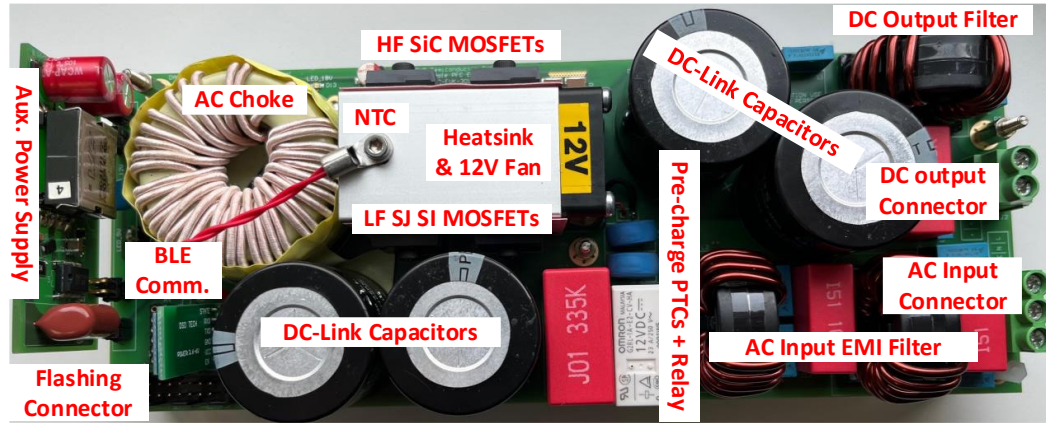
APPLICATION EVK Brief

3.6kW Totem Pole PFC with 4th Gen. SiC MOSFET

- Design Name : APEVK66001
- Board No. : TPPFCSIC-EVK-301(PCB3051/PCB3052)

3.6kW Totem Pole PFC with 4th Gen. SiC MOSFET

TPPFCSIC-EVK-301 Board Overview

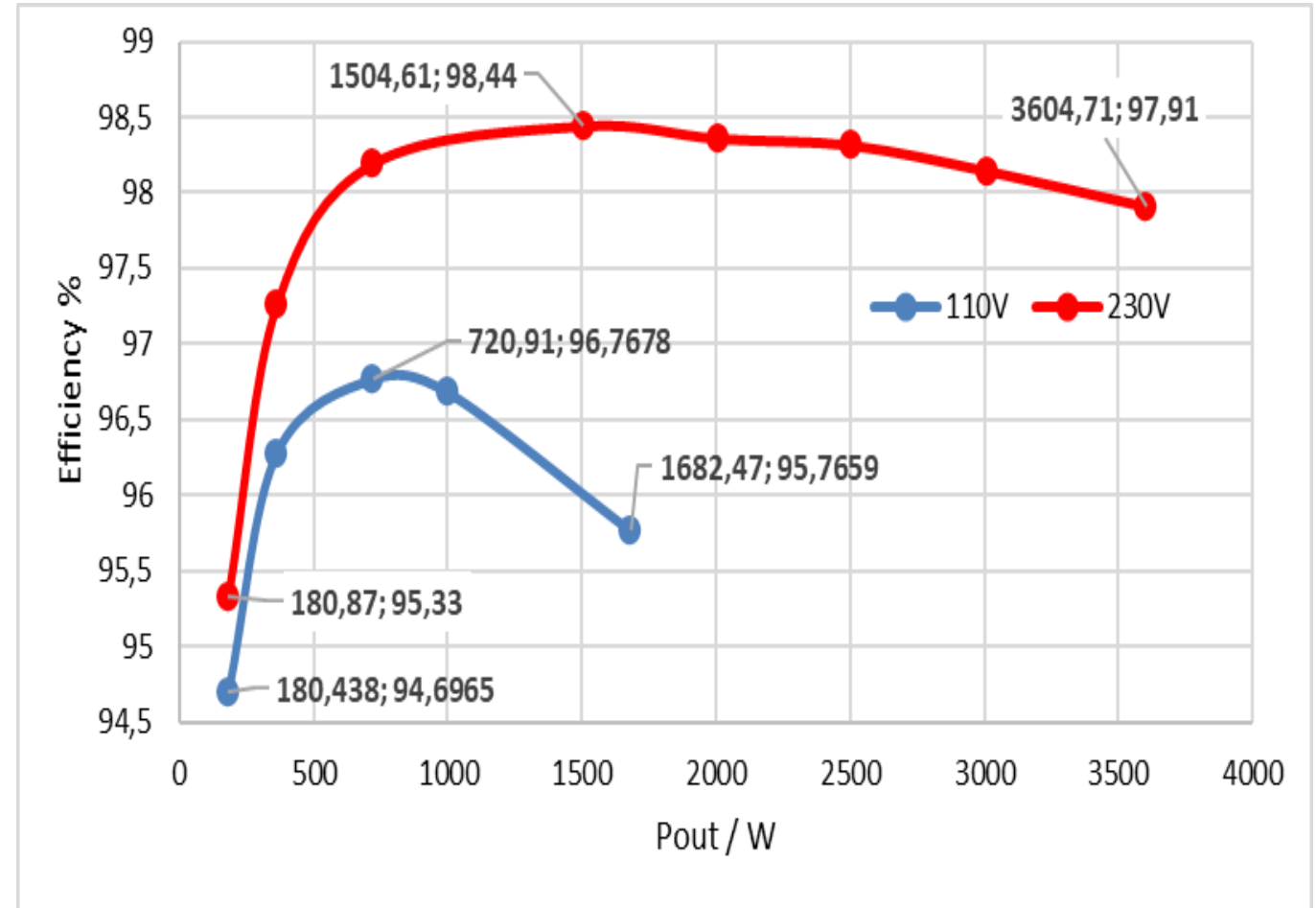


TPPFCSIC-EVK-301 Specification

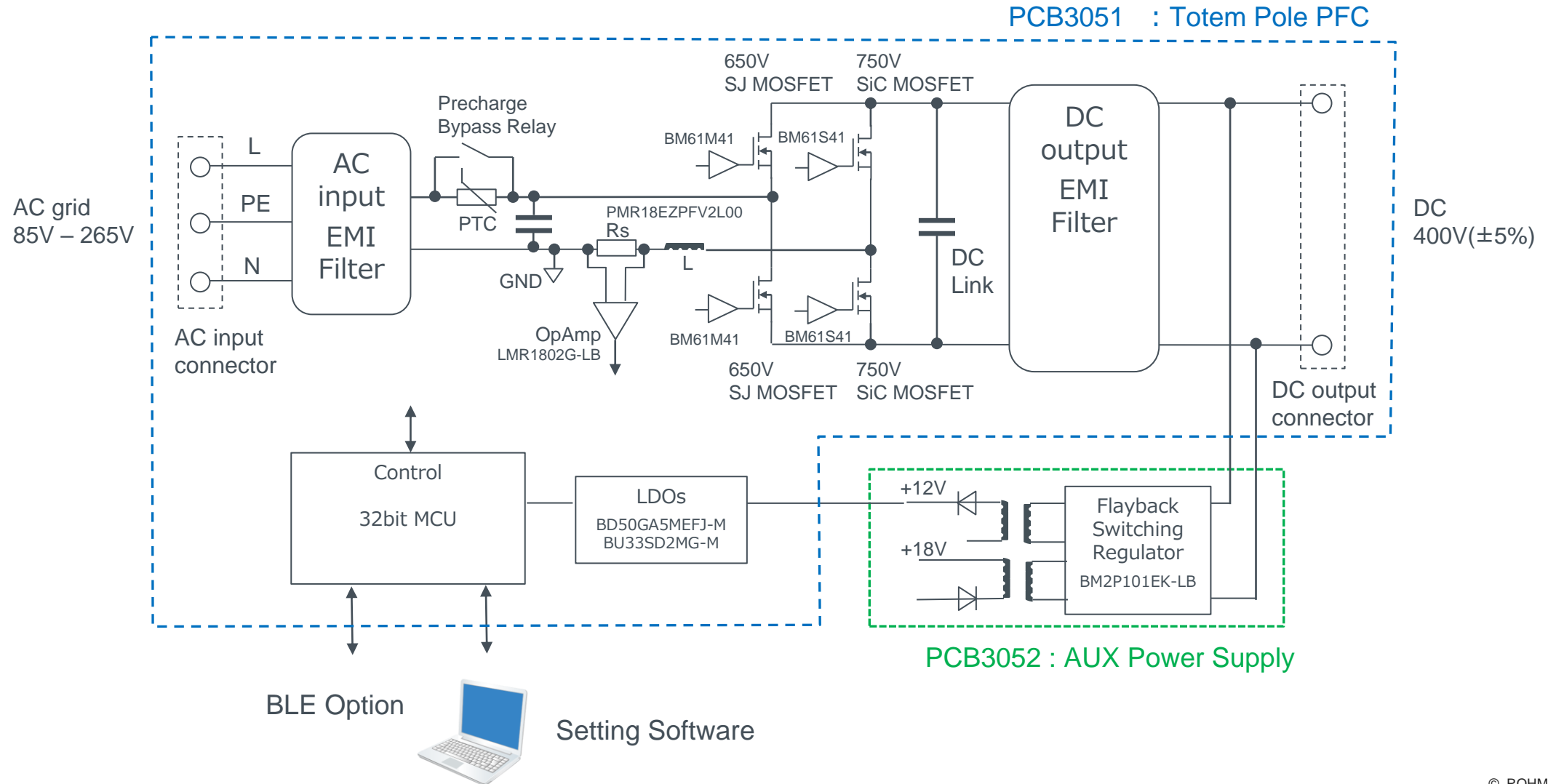
Parameter	Specification
Input voltage (freq.)	85 – 265 V _{AC} (50±3 Hz or 60±3 Hz)
Output voltage	400V (+/- 5% ripple voltage)
Output power	3.6 kW @ 230V _{AC}
Switching frequency	100 kHz
Efficiency	98.5% at half load & 230Vac
Cooling	Forced air, small fan
Topology	Totem Pole
Form factor	233 x 89 x ca.40/45 mm

TPPFCSIC-EVK-301 Efficiency Curve

It reaches up to 98.5% efficiency at 230Vac.



Circuit Diagram



Major ROHM Products

Sub blocks	Board No.	feature	Product No.	Specification
Totem Pole PFC	PCB3051	HF Switch of Power Stage	SCT4045DR	750V, 45mΩ SiC MOSFET, TO-247-4L
		LF Switch of Power Stage	R6076ENZ4	650V, 76A Si SJ-MOSFET, TO-247
		Gate Driver for SiC	BM61S41RFV-C	3750Vrms, Isolated Gate Driver
		Gate Driver for SJ-MOSFET	BM61M41RFV-C	3750Vrms, Isolated Gate Driver
		Current Sense Shunt Resistor	PMR18EZPFV2L00	3216, 1W at 75°C, 2mΩ, ±1%
		OpAmp for Current Sense	LMR1802G-LB	Low offset OpAmp
		Super Fast Recovery Diode	RFN2LAM6STR	600V, 1.5A, SOD-128
		5V LDO	BD50GA5MEFJ-M	Vin 4.5V to14V, 5V output, 500mA, ±1%
		3.3V LDO	BU33SD2MG-M	Vin 1.7V to 6V, 3.3V output, 200mA
AUX. Power Supply	PCB3052	Flyback Switching Regulator	BM2P101FK-LB	PWM DC/DC Converter integrated MOSFET
		First Recovery Diode	RF101LAM4STR	400V, 1A, SOD-128
		First Recovery Diode	RFN1LAM7STFTR	700V, 0.8A, SOD-128
		First Recovery Diode	RF05VAM2STR	200V, 0.5A, SOD-323HE
		First Recovery Diode	RF201LAM2STR	200V, 2A, SOD-128



Electronics for the Future

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