

Electric vehicles (EVs) have rekindled interest in their efficiency and environmental friendliness. The designed heatsink allows us to maintain the thermal distribution in IGBT at 36.2 degrees and 42.5 degrees for ASBC and SBC, respectively for 5A load current, which has been proved via simulation. This paper also analyses the performance between 1 kW Asynchronous Buck Converter (ASBC) and Synchronous Buck Converter (SBC) for Electric vehicle's battery charging, and all the data has been taken from our previous hardware experimental work.