An increased attention has been detected to develop smaller and lighter high voltage power converters in the range of 50 V to 400 V domains. The applications for these converters are mainly focused for Power over Ethernet (PoE), LED lighting and AC adapters. Design for high power density is one of the targets for next generation power converters. This paper presents an 80 V input capable multi-chip module integration of enhancement mode gallium nitride (GaN) field effect transistors (FETs) based power stage. The module design is presented and validated through experimental results. The power stage is integrated on a high glass transition temperature 0.4 mm thick FR4 substrate configured as a 70 pin ball grid array package. The power stage is tested up to switching frequency of 12 MHz. The power stage achieved 88.5 % peak efficiency when configured as a soft switching buck converter operating at 7 MHz. The converter is tested up to 12 W of output power at 13 V ± 1.5 V output voltage. The converter achieved a volume power density of 20 W/cm³ and area power density of 9.4 W/cm².