

C215496 : MAJOR ELECTRICAL ENGINEERING

KEY WORD: SWITCHING POWER SUPPLY / PLASMA CUTTING

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CUTTING MACHINE : THESIS ADVISOR : ASST.PROF.YOUTHANA
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A switching power supply of a plasma cutting machine was designed to be a prototype. It comprised of a rectifier, a full-bridge converter using power MOSFETS as active switches, a high frequency transformer, a full-wave output rectifier, a high voltage generating circuit, a sequential control circuit, over voltage and over current protection circuits. The plasma cutting machine also included a plasma cutting torch and an air compressor unit. The power supply operated at a high frequency of 40 kHz and delivered 4 kilowatt output power. This machine could cut metal sheet up to 10 mm thick. The performance test of this prototype yielded satisfactory results in accordance with the specifications. The cutting by the machine provided a clear-cut edge.