

# High Voltage DC-DC Converter

L.P. Dimitrov, B.B. Kounov, I.D. Vankov

*INRNE, Bulgaria*

## **Abstract**

A relatively powerful (4 W) high voltage DC-DC converter will be described. Its output voltage could be regulated between 0 and 4000 V with an output current from 0 to 1 mA (typical values needed for the muon chambers in the ME1/1 endcap station of CMS). A special feedback circuit provide a self regulation of the form of the generated low frequency voltage: with the increasing of the output power (resp. of the output voltage, output current or both) the initial sinusoidal form proceed slowly to rectangular thus increasing the efficiency of the converter. In this manner on the typical working conditions (outputs power of about 3,6 W) the efficiency is 80%.

Other improved parameters of this converter are: high temperature stability - 100 ppm/0C and low ripple - 10 mVp-p. Typical wave forms and other results from the experimental investigation of the converter will be also included.