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ALDOv2, a multi-purpose linear regulator for the CMS Barrel Timing Layer detector

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The ALDOv2 ASIC is a multi-purpose adjustable low dropout linear regulator designed in I3T80 0.35 μm HV CMOS technology. It is specifically designed for the CMS Barrel Timing Layer (BTL) detector and its purpose is twofold: to provide the final voltage regulation for the BTL front-end chip (TOFHIR) and slow control chip (GBT-SCA), cascaded to a DCDC converter; to provide the high-side regulation for the bias voltage of SiPM photodetectors allowing also to measure of their dark current and to shutdown bias supply in case of failures. Design strategies, results from testbench and radiation hardness studies will be presented.

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