Title: APPARATUS AND METHODS FOR IMPROVING THE TRANSIENT RESPONSE CAPABILITY OF A SWITCHING POWER SUPPLY

Abstract: The transient response of a switching power supply is improved by providing one or more supplemental power sources connected to the output terminal of the power supply. In one embodiment additional current is provided when a sudden increase in load current causes a corresponding decrease in output voltage. In one embodiment current is discharged when a sudden decrease in load current causes a corresponding increase in output voltage. The supplemental power sources provide a fixed current for a fixed duration. In some embodiments the supplemental current is provided for a time period approximating the time required for the switching power converter coil current to equal the new load current.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC(B) - H02M 3/335 (2008.04)
USPC - 363/21.01
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
USPC: 363/21.01

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
US: 363/13, 15, 19, 21.01, 65, 327/524, 531, 530, 288 (keyword limited - see terms below)

Electronic database consulted during the international search (name of database and, where practical, search terms used)
PubWEST (PGP, USPT, USOC, EPAB, JPAB); GOOGLE
Search Terms: switching power, power converter, constant current source, ((smooth$3 or filter) near2 capacitor), $3FET, FET near2 series, control$3 near2 FET, switching power converter, (IFET near2 (coil or inductor)) near2 series, load coil, current source

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X Y</td>
<td>US 2006/0279970 A1 (Kernahan) 14 December 2006 (14.12.2006), entire document, especially; abstract, para. [0003], [0010], [0013], [0149], [0155], [0438], Fig. 1</td>
<td>20 1 · 19</td>
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</tbody>
</table>

☐ Further documents are listed in the continuation of Box C.

* Special categories of cited documents:
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Date of the actual completion of the international search
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Date of mailing of the international search report
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