Abstract: An integrated variable voltage diode capacitor topology applied to a circuit providing a variable voltage load for controlling variable capacitance. The topology includes a first pair of anti-series varactor diodes (10, 12, 14, 16), wherein the diode power-law exponent n for the first pair of anti-series varactor diodes in the circuit is equal or greater than 0.5, and the first pair of anti-series varactor diodes have an unequal size ratio that is set to control third-order distortion. The topology also includes a center tap between the first pair anti-series varactor diodes for application of the variable voltage load. In preferred embodiments, a second pair of anti-series varactor diodes is arranged anti-parallel to the first pair of anti-series varactor diodes so the combination of the first pair of anti-series varactor diodes and the second pair of anti-series varactor diodes control second-order distortion as well.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC: H03M 3/16 (2007.01), 3/18, 2007.01); H03B 5/06 (2007.01), 5/12 (2007.01)

USPC: 334/15, 1333/175, 307/109, 331/177v; 361/281
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)
U.S.: 334/15; 1333/175; 307/109; 331/177v; 361/281

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Please See Continuation Sheet

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</td>
<td>US 2003/0093447 A1 (Loesch et al) 15 May 2003 (15.05.2003), Figure 1, paragraphs [0027] and [0028].</td>
<td>1-3</td>
</tr>
</tbody>
</table>

Further documents are listed in the continuation of Box C. See patent family annex.

Date of the actual completion of the international search
22 November 2006 (22.11.2006)

Date of mailing of the international search report
03 JAN 2007

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Form PCT/ISA/210 (second sheet) (April 2005)
Continuation of B. FIELDS SEARCHED Item 3:
USPAT, US-PGPUB, EPO, JPO, DERWENT, IBM_TDB
variable capacitor, diode capacitor, varactor, third order distortion