

Title (en)
SOLID-STATE HIGH VOLTAGE SWITCH AND SWITCHING POWER SUPPLY

Title (de)
HOCHSPANNUNGS-HALBLEITERSCHALTER UND SCHALTNETZTEIL

Title (fr)
COMMUTATEUR HAUTE TENSION A SEMI-CONDUCTEUR ET ALIMENTATION A DECOUPAGE

Publication
EP 0927463 A4 20051019 (EN)

Application
EP 96933091 A 19960923

Priority
US 9615214 W 19960923

Abstract (en)
[origin: WO9812817A1] A switching circuit (50) comprising cascaded transistor stages (52a, 52b, ...52n and 54), connected between a high voltage terminal (62) and a sense resistor (RS) coupled to a low voltage terminal (64). The transistor stage (54) closest to the sense resistor (RS) is referred to as a current gain stage (54), and all the other transistor stages (52a, 52b, ...52n) are referred to as component stages (52a, 52b, ...52n). Blocking diodes (DD) are connected across all stages (52a, 52b, ...52n and 54), forming a continuous path between the high voltage terminal (62) and the low voltage terminal (64). When an enable signal is provided to the current gain stage (54), the transistor stages (52a, 52b, ...52n and 54) sequentially enter conduction, beginning with the current gain stage (54) and proceeding through the component stages (52a, 52b, ...52n). As each transistor stage (52a, 52b, ...52n) enters conduction, the resulting voltage drop will cause each corresponding blocking diode (DD) to avalanche, allowing current to flow. Eventually, all of the component stages (52a, 52b, ...52n) are turned on, creating a conductive path through the stages (52a, 52b, ...52n) and completing the switching of the switching circuit (50).

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IPC 8 full level
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CPC (source: EP)
H02M 1/088 (2013.01); **H03K 17/102** (2013.01); **H03K 17/166** (2013.01)

Citation (search report)

- [X] EP 0666647 A1 19950809 - ASEA BROWN BOVERI [CH]
- [X] DE 19515279 C1 19960523 - SCHWERIONENFORSCH GMBH [DE]
- [X] US 5148064 A 19920915 - KEVORKIAN ANTOINE [FR], et al
- [X] US 5388139 A 19950207 - BELAND ROBERT [CA]
- [X] US 3603892 A 19710907 - GUISSINGER JOHN E, et al
- [X] US 4751408 A 19880614 - RAMBERT BERNARD [FR]
- [XA] "HOCHSPANNUNGS-IMPULSVERSTAERKER MIT LEISTUNGS-MOSFETS", RADIO FERNSEHEN ELEKTRONIK, VERLAG TECHNIK, BERLIN, DE, vol. 37, no. 3, 1988, pages 196, XP001014653, ISSN: 0033-7900
- [X] PATENT ABSTRACTS OF JAPAN vol. 1995, no. 05 30 June 1995 (1995-06-30)
- [A] REYNOLDS S: "A HIGH-VOLTAGE, HIGH-FREQUENCY LINEAR AMPLIFIER/DRIVER FOR CAPACITIVE LOADS", MEASUREMENT SCIENCE AND TECHNOLOGY, IOP PUBLISHING, BRISTOL, GB, vol. 3, no. 3, 1 March 1992 (1992-03-01), pages 283 - 288, XP000294616, ISSN: 0957-0233
- [A] PATENT ABSTRACTS OF JAPAN vol. 014, no. 041 (E - 0879) 25 January 1990 (1990-01-25)
- See references of WO 9812817A1

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