BIPOLAR CURRENT PULSE AMPLIFIER IN HYBRID BRIDGE WITH SYMMETRICAL CONTROL

Patent Number(s): RO128681-A2 ; RO128681-B1

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Derwent Primary Accession Number: 2013-M23557

Abstract: NOVELTY - The invention relates to a bipolar current pulse amplifier in hybrid bridge with symmetrical control. According to the invention, the amplifier has a bridge structure consisting of four switch elements (Q1, Q2, Q5, Q6) and some circuits related thereto and it is meant to supply current pulses on an inductive load (L), two of the bridge sides, comprising switch elements (Q1 and Q5), are replaced with some linear current sources made by some high speed operational amplifiers (X1 and X2), some resistors (R5 and R12) being used for detecting the current of those sources and providing the current reaction, and some resistors (R6 and R13) providing the factor for amplifying in current, a voltage comparator made by some transistors (Q3 and Q4) and some additional elements (R15, R16 and R17) provide the control of the switch elements (Q2 and Q6) in the bridge, some elements (R3, R4, C2 and R11, R10, C4, respectively) are used for controlling the power switches (Q2 and Q6, respectively), in the bridge, and some diodes (D1, D2, D3 and D4) are used for suppressing the energy appearing during the switching process, the sense of the current in a load (L1) being set out by the transistors (Q3 and Q4) which are used for comparing the voltages at the output of the amplifiers (X1 and X2) and decide the activation of one of the two switches (Q2 or Q6).

International Patent Classification: H03F-003/20; H03F-003/34

Derwent Class Code(s): U24 (Amplifiers and Low Power Supplies)

Derwent Manual Code(s): U24-G01B

Patent Details:

Patent Number	Publ. Date	Main IPC	Week	Page Count	Language
RO128681-A2	30 Jul 2013	H03F-003/20	201355		Romanian
RO128681-B1	30 Jan 2018	H03F-003/34	201809		English

Application Details:

RO128681-A2	RO000683	30 Jul 2010
RO128681-B1	RO000683	30 Jul 2010

Priority Application Information and Date:

RO000683	30 Jul 2010

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