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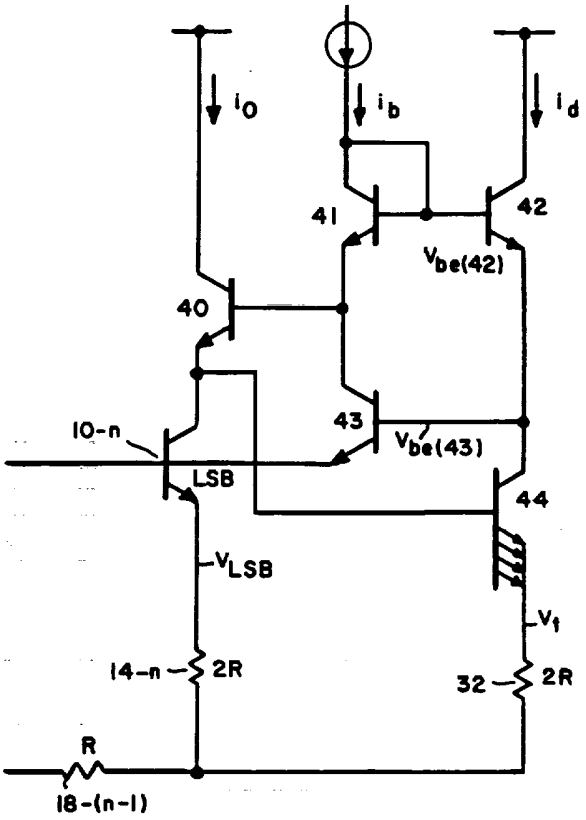
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(54) Title: TERMINATION CIRCUIT FOR AN R-2R LADDER THAT COMPENSATES FOR TEMPERATURE DRIFT

(57) Abstract

A termination circuit for an R-2R ladder network for producing weighted currents, the 2R terminating resistor of the ladder being connected to an excitation source voltage which is 2(kT/q)ln2 closer to the supply voltage than the emitter of the current source in the last (i.e., least significant) leg of the ladder. The excitation source is fabricated with just one type of bipolar transistor and does not require an amplifier or frequency compensation capacitor(s). The excitation source is a simple circuit requiring only five transistors, at least one of which has an emitter area which is a multiple of the emitter areas of the current source transistors. The base-emitter voltages of the transistors in the excitation source are connected in a voltage loop that goes from a voltage V_{LSB} at the emitter of the current source transistor connected to the least significant ladder network shunt resistor to a voltage, Vt, which would be equal to V_{LSB}, if all six transistors in the loop had the same emitter area, but which deviates therefrom by 2(kT/q)ln2 due to the differences in the emitter areas.



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INTERNATIONAL SEARCH REPORT

International Application No PCT/US 90/06790

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [6]

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC[5]: H 03 M 1/06, //H 03 M 1/78

II. FIELDS SEARCHED

Minimum Documentation Searched [7]

Classification System	Classification Symbols
IPC[5]	H 03 M

Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched [8]

III. DOCUMENTS CONSIDERED TO BE RELEVANT [9]

Category [10]	Citation of Document, [11] with indication, where appropriate, of the relevant passages [12]	Relevant to Claim No. [13]
A	GB, A, 2081040 (ANALOG DEVICES, INC.) 10 February 1982 see the whole document & US, A, 4349811 cited in the application	1,7

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IV. CERTIFICATION

Date of the Actual Completion of the International Search	Date of Mailing of this International Search Report
21st March 1991	22. 05. 91
International Searching Authority	**Signature of Authorized Officer**
EUROPEAN PATENT OFFICE	M. PEIS M. Peis

ANNEX TO THE INTERNATIONAL SEARCH REPORT ON INTERNATIONAL PATENT APPLICATION NO. US 9006790 SA 42578

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report.
The members are as contained in the European Patent Office EDP file on 29/04/91
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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		JP-A- 57107630	05-07-82
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