

Title (en)

Voltage regulator having a precision thermal current source.

Title (de)

Spannungsregler mit Präzisionsthermostromquelle.

Title (fr)

Régulateur de tension avec source de courant thermique de précision.

Publication

EP 0264563 A1 19880427 (EN)

Application

EP 87111725 A 19870813

Priority

- US 91548186 A 19861006
- US 91548386 A 19861006

Abstract (en)

A voltage supply circuit for supplying a regulated output voltage the magnitude and temperature coefficient of which can be independently controlled. A pair of transistors and associated circuitry develop a voltage proportional to the V_{BE} of the two transistors which are operated at different current densities and sets a first current through the collector of a third transistor which is proportional to V_{BE} having a positive temperature coefficient (TC). A second current proportional to the negative temperature coefficient base-to-emitter voltage of the third transistor is generated and combined with the first current to produce a third current having a net negative, zero or positive TC. The third current is used to develop a voltage which is combined with the base-to-emitter voltage of the third transistor to produce the output voltage.

IPC 1-7

G05F 3/30

IPC 8 full level

H01L 35/00 (2006.01); **G05F 3/30** (2006.01); **H01L 35/28** (2006.01)

CPC (source: EP KR)

G05F 1/56 (2013.01 - KR); **G05F 3/30** (2013.01 - EP)

Citation (search report)

- [A] US 4590419 A 19860520 - MORIARTY JR JOHN K [US]
- [A] US 4308496 A 19811229 - NAGANO KATSUMI
- [A] US 4157493 A 19790605 - MONTICELLI DENNIS M [US]
- [A] US 3887863 A 19750603 - BROKAW ADRIAN PAUL
- [A] WO 8201105 A1 19820401 - WESTERN ELECTRIC CO [US]

Cited by

AT403532B; CN103116380A; GB2332760A; EP0465094A3; GB2263794A; US5440224A; GB2263794B; FR2670915A1; CN114815950A; US9367077B2; US9891647B2; US10209731B2

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

EP 0264563 A1 19880427; **EP 0264563 B1 19931103**; DE 3788033 D1 19931209; DE 3788033 T2 19940303; JP H0760352 B2 19950628; JP S6398159 A 19880428; KR 880005501 A 19880629; KR 950010131 B1 19950907

DOCDB simple family (application)

EP 87111725 A 19870813; DE 3788033 T 19870813; JP 24286287 A 19870929; KR 870011089 A 19871005