450mA Low Dropout Positive Voltage Regulator

General Description

The BM9162 is a positive low dropout regulator designed for applications requiring low dropout performance at full rated current. The device is available in fixed output voltages of 3.3V , 1.8V and 2.5V. It provides excellent regulation over line, load, and temperature variations.

The other features include low dropout performance at a maximum of 0.3V at 300mA, fast transient response, internal current limiting, and thermal shutdown protection of the output devices. The BM9162 is a three-terminal regulator compatible with industrial 78XX series and available in surface mount SOT-89 packages.

Ordering Information

BM9162-□□

Output Voltage
33 : 3.3V
18 : 1.8V
25 : 2.5V

Marking Information

For marking information, contact our sales representative directly or through a Bookly distributor located in your area, otherwise visit our website for detail.

Features

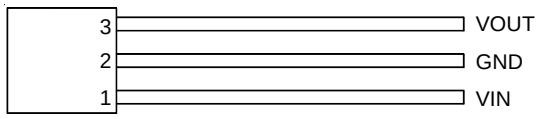
- **Low Dropout, Maximum 0.3V at 300mA**
- **Fast Transient Response**
- **±1% Total Output Regulation**
- **Support high voltage input to +9V**
- **0.4% Load Regulation**
- **SOT-89 and TO-92 Packages**

Applications

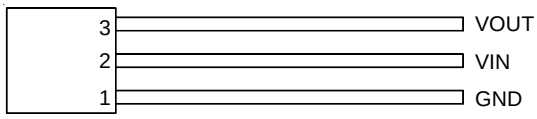
- 5V to 3.3V Linear Regulator
- Low Voltage Microcontroller, DSF, ... etc. Power Supply , replace RT9162 / CM2830 / G910
- Linear Regulator for LAN Card and CD-ROM

Pin Configurations

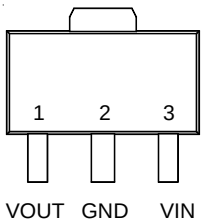
(TOP VIEW)



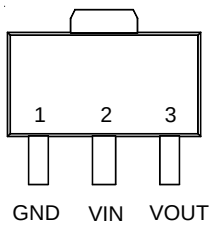
BM9162-3.3
BM9162-3.0
TO-92



BM9162B-3.3
BM9162B-3.0
TO-92

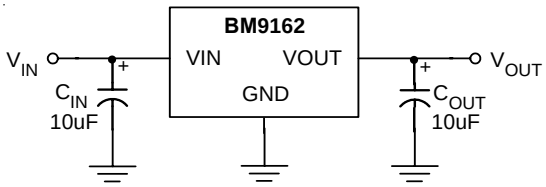


BM9162-3.3
BM9162-1.8
SOT-89



BM9162B-3.3
BM9162B-2.5
SOT-89

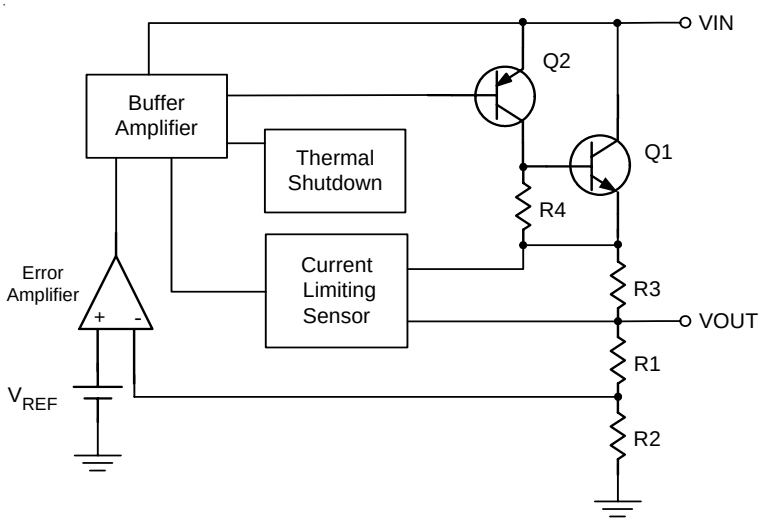
Typical Application Circuit



Function Block Diagram

Pin Name	Pin Function
VOUT	Output Voltage
GND	Ground
VIN	Power Input

Functional Pin Description



Absolute Maximum Ratings

- Input Voltage ----------9V
- Power Dissipation, P_D @ T_A = 25°C
  TO-92 ---------- 0.6W
  SOT-89 ---------- 0.5W
- Package Thermal Resistance ----------
  TO-92, θ_{JC} ---------- 160°C/W
  SOT-89, θ_{JC} ---------- 100°C/W
  SOT-89, θ_{JA} ---------- 300°C/W
- Operating Junction Temperature Range ---------- –40°C to 125°C
- Storage Temperature Range ---------- –65°C to 150°C

Electrical Characteristics

(V_{IN} = 5.0V, T_A = 25°C, unless otherwise specified)

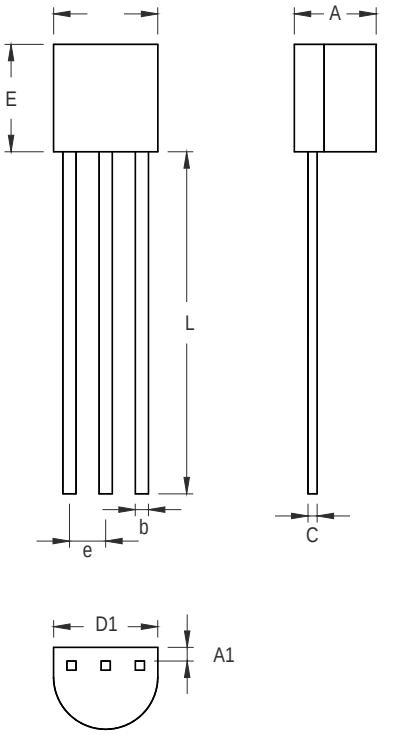
Parameter		Symbol	Test Conditions	Min	Typ	Max	Units
Output Voltage (1)	BM9162-33	V_{OUT}		3.235	3.300	3.365	V
	BM9162-30			2.950	3.000	3.060	
Line Regulation (1)		ΔV_{LINE}	V_{IN} = 5V–15V	--	0.1	0.4	%
Load Regulation (1)		ΔV_{LOAD}	I_L = 0 - 300mA	--	0.2	0.4	%
Dropout Voltage (2)		V_{DROP}	ΔV_{OUT} = 1%	--	0.2		V
Current Limit		I_{LIMIT}		700	--	--	mA
Quiescent Current		I_Q		-	25		uA
Temperature Coefficient		T_C		--	0.005	--	%/°C
Temperature Stability		T_S		--	0.5	--	%
RMS Output Noise (3)				--	0.003	--	%/V_{OUT}

Notes:

(1) Low duty cycle pulse testing with Kelvin connections required.

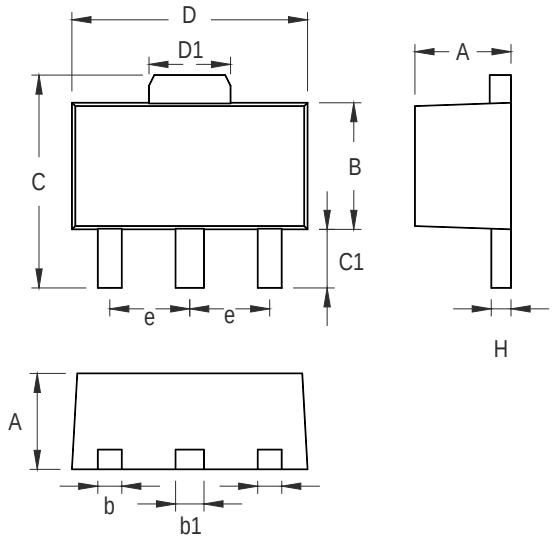
(2) Dropout voltage is defined as the input to output differential at which the output voltage drops 1% below the value measured with a 2V differential.

(3) Bandwidth of 10 Hz to 10 kHz.



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.175	4.191	0.125	0.165
A1	1.143	1.372	0.045	0.054
b	0.406	0.533	0.016	0.021
C	0.406	0.533	0.016	0.021
D	4.445	5.207	0.175	0.205
D1	3.429	--	0.135	--
E	4.318	5.334	0.170	0.210
e	1.143	1.397	0.045	0.055
L	12.700	--	0.500	--

3-Lead TO-92 Plastic Package



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.397	1.600	0.055	0.063
b	0.356	0.483	0.014	0.019
B	2.388	2.591	0.094	0.102
b1	0.406	0.533	0.016	0.021
C	--	4.242	--	0.167
C1	0.787	1.194	0.031	0.047
D	4.394	4.597	0.173	0.181
D1	1.397	1.753	0.055	0.069
e	1.448	1.549	0.057	0.061
H	0.355	0.432	0.014	0.017

3-Lead SOT-89 Surface Mount Package