

MIC5209

500mA Low-Noise LDO Regulator

General Description

The MIC5209 is an efficient linear voltage regulator with very low dropout voltage, typically 10mV at light loads and less than 500mV at full load, with better than 1% output voltage accuracy.

Designed especially for hand-held, battery-powered devices, the MIC5209 features low ground current to help prolong battery life. An enable/shutdown pin on SO-8 and TO-263-5 versions can further improve battery life with near-zero shutdown current.

Key features include reversed-battery protection, current limiting, overtemperature shutdown, ultra-low-noise capability (SO-8 and TO-263-5 versions), and availability in thermally efficient packaging. The MIC5209 is available in adjustable or fixed output voltages.

For space-critical applications where peak currents do not exceed 500mA, see the MIC5219.

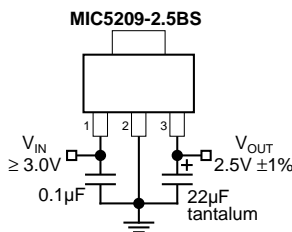
Features

- Meets Intel® Slot 1 and Slot 2 requirements
- Guaranteed 500mA output over the full operating temperature range
- Low 500mV maximum dropout voltage at full load
- Extremely tight load and line regulation
- Thermally-efficient surface-mount package
- Low temperature coefficient
- Current and thermal limiting
- Reversed-battery protection
- No-load stability
- 1% output accuracy
- Ultra-low-noise capability in SO-8 and TO-263-5

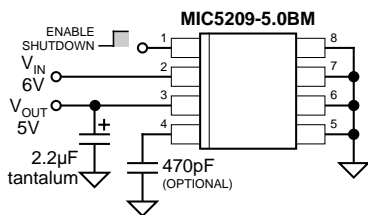
Applications

- Pentium II Slot 1 and Slot 2 support circuits
- Laptop, notebook, and palmtop computers
- Cellular telephones
- Consumer and personal electronics
- SMPS post-regulator/dc-to-dc modules
- High-efficiency linear power supplies

Typical Applications



3.3V Nominal-Input Slot-1 Power Supply

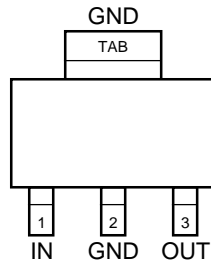


Ultra-Low-Noise 5V Regulator

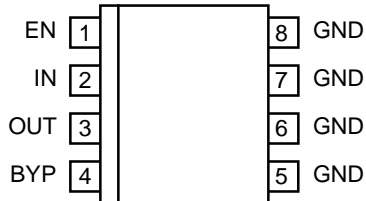
Ordering Information

Part Number	Voltage	Junct. Temp. Range	Package
MIC5209-2.5BS	2.5V	-40°C to +125°C	SOT-223
MIC5209-3.0BS	3.0V	-40°C to +125°C	SOT-223
MIC5209-3.3BS	3.3V	-40°C to +125°C	SOT-223
MIC5209-3.6BS	3.6V	-40°C to +125°C	SOT-223
MIC5209-4.2BS	4.2V	-40°C to +125°C	SOT-223
MIC5209-5.0BS	5.0V	-40°C to +125°C	SOT-223
MIC5209-1.8BM	1.8V	0°C to +125°C	SO-8
MIC5209-2.5BM	2.5V	-40°C to +125°C	SO-8
MIC5209-3.0BM	3.0V	-40°C to +125°C	SO-8
MIC5209-3.3BM	3.3V	-40°C to +125°C	SO-8
MIC5209-3.6BM	3.6V	-40°C to +125°C	SO-8
MIC5209-5.0BM	5.0V	-40°C to +125°C	SO-8
MIC5209BM	Adj.	-40°C to +125°C	SO-8
MIC5209-2.5BU	2.5V	-40°C to +125°C	TO-263-5
MIC5209-3.0BU	3.0V	-40°C to +125°C	TO-263-5
MIC5209-3.3BU	3.3V	-40°C to +125°C	TO-263-5
MIC5209-3.6BU	3.6V	-40°C to +125°C	TO-263-5
MIC5209-5.0BU	5.0V	-40°C to +125°C	TO-263-5
MIC5209BU	Adj.	-40°C to +125°C	TO-263-5

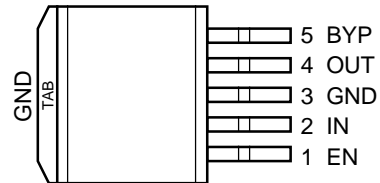
Pin Configuration



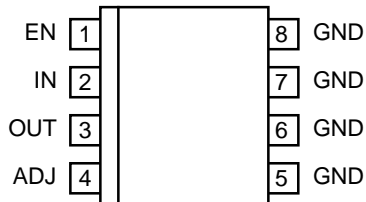
MIC5209-x.xBS
SOT-223
Fixed Voltages



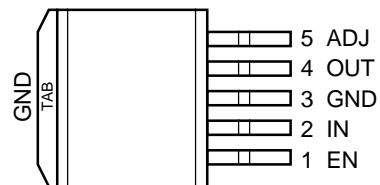
MIC5209-x.xBM
SO-8
Fixed Voltages



MIC5209-x.xBU
TO-263-5
Fixed Voltages



MIC5209BM
SO-8
Adjustable Voltage



MIC5209BU
TO-263-5
Adjustable Voltage

Pin Description

Pin No. SOT-223	Pin No. SO-8	Pin No. TO-263-5	Pin Name	Pin Function
1	2	2	IN	Supply Input
2, TAB	5–8	3	GND	Ground: SOT-223 pin 2 and TAB are internally connected. SO-8 pins 5 through 8 are internally connected.
3	3	4	OUT	Regulator Output
	1	1	EN	Enable (Input): CMOS compatible control input. Logic high = enable; logic low or open = shutdown.
	4 (fixed)	5 (fixed)	BYP	Reference Bypass: Connect external 470pF capacitor to GND to reduce output noise. May be left open. For 1.8V or 2.5V operation, see “Applications Information.”
	4 (adj.)	5 (adj.)	ADJ	Adjust (Input): Feedback input. Connect to resistive voltage-divider network.