

LP2953: Adjustable Micropower Low-Dropout Voltage Regulators

Product Feature Sheet

Features

- Output voltage adjusts from 1.23 V to 29 V
- Guaranteed 250 mA output current
- Extremely low quiescent current
- Low dropout voltage
- Extremely tight line and load regulation
- Very low temperature coefficient
- Current and thermal limiting
- Reverse battery protection
- 50 mA (typical) output pulldown crowbar
- 5 V and 3.3 V versions available

LP2953 VERSIONS ONLY

- Auxiliary comparator included with CMOS/TTL compatible output levels. Can be used for fault detection, low input line detection, etc.

Device Overview

The LP2952 and LP2953 are micropower voltage regulators with very low quiescent current (130 μ A typical at 1 mA load) and very low dropout voltage (typ. 60 mV at light load and 470 mV at 250 mA load current). They are ideally suited for battery-powered systems. Furthermore, the quiescent current increases only slightly at dropout, which prolongs battery life.

The LP2952 and LP2953 retain all the desirable characteristics of the LP2951, but offer increased output current, additional features, and an improved shutdown function.

The internal crowbar pulls the output down quickly when the shutdown is activated. The error flag goes low if the output voltage drops out of regulation.

Reverse battery protection is provided.

The internal voltage reference is made available for external use, providing a low-T.C. reference with very good line and load regulation.

The parts are available in DIP and surface mount packages.

Absolute Maximum Ratings:

Storage Temperature Range	$-65^{\circ}\text{C} \leq \text{TA} \leq +150^{\circ}\text{C}$
Operating Temperature Range LP2952I, LP2953I, LP2952AI, LP2953AI, LP2952I-3.3, LP2953I-3.3, LP2952AI-3.3, LP2953AI-3.3	$-40^{\circ}\text{C} \leq \text{TJ} \leq +125^{\circ}\text{C}$
LP2953AM	$-55^{\circ}\text{C} \leq \text{TA} \leq +125^{\circ}\text{C}$
Lead Temp. (Soldering, 5 seconds)	260°C
Power Dissipation (2)	Internally Limited
Maximum Junction Temperature LP2952I, LP2953I, LP2952AI, LP2953AI, LP2952I-3.3, LP2953I-3.3, LP2952AI-3.3, LP2953AI-3.3	+125°C
LP2953AM	+150°C
Input Supply Voltage	-20V to +30V
Feedback Input Voltage (3)	-0.3V to +5V
Comparator Input Voltage (4)	-0.3V to +30V
Shutdown Input Voltage (4)	-0.3V to +30V
Comparator Output Voltage (4)	-0.3V to +30V
ESD Rating (5)	2 kV

Typical Applications

- High-efficiency linear regulator
- Regulator with under-voltage shutdown
- Low dropout battery-powered regulator
- Snap-ON/Snap-OFF regulator

Functional Block Diagram

