

Apéndice E. Hojas de Especificaciones Reguladores Positivos a 5V L7805 y MCP1700-5002.



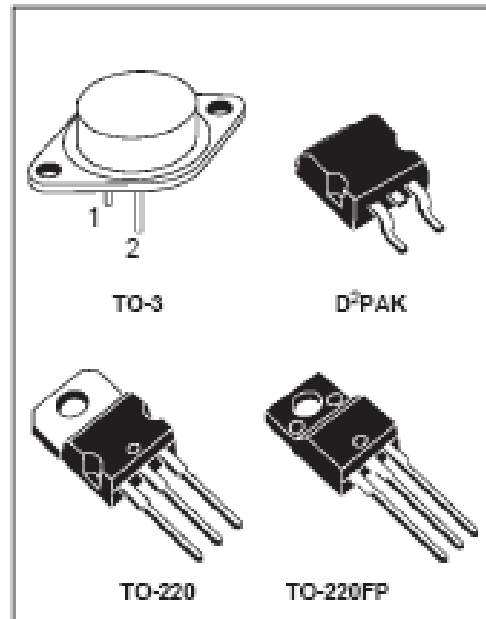
L7800
SERIES

POSITIVE VOLTAGE REGULATORS

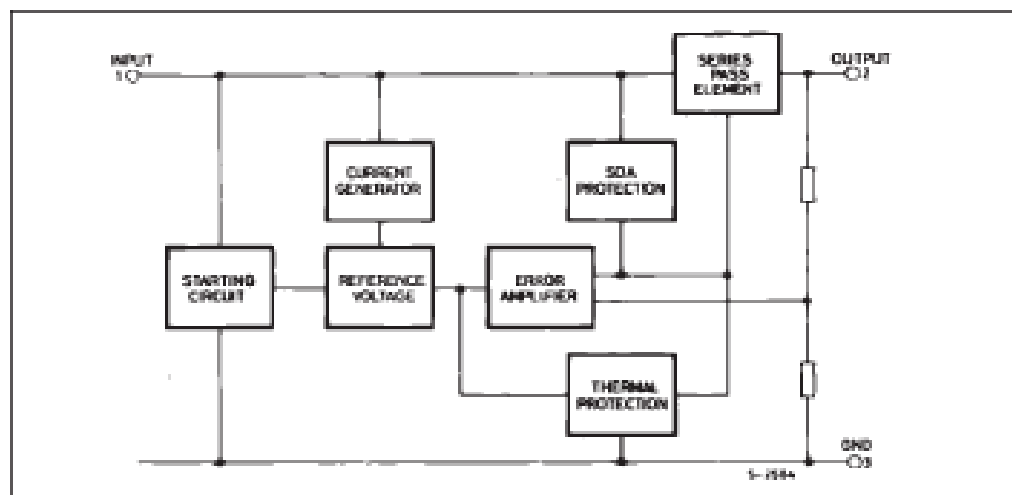
- OUTPUT CURRENT UP TO 1.5 A
- OUTPUT VOLTAGES OF 5; 5.2; 6; 6.5; 9; 12; 15; 18; 24V
- THERMAL OVERLOAD PROTECTION
- SHORT CIRCUIT PROTECTION
- OUTPUT TRANSITION SOA PROTECTION

DESCRIPTION

The L7800 series of three-terminal positive regulators is available in TO-220, TO-220FP, TO-3 and D²PAK packages and several fixed output voltages, making it useful in a wide range of applications. These regulators can provide local on-card regulation, eliminating the distribution problems associated with single point regulation. Each type employs internal current limiting, thermal shut-down and safe area protection, making it essentially indestructible. If adequate heat sinking is provided, they can deliver over 1A output current. Although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain adjustable voltages and currents.



BLOCK DIAGRAM





MCP1700

Low Quiescent Current LDO

Features

- 1.6 μA Typical Quiescent Current
- Input Operating Voltage Range: 2.3V to 6.0V
- Output Voltage Range: 1.2V to 5.0V
- 250 mA Output Current for output voltages $\geq 2.5\text{V}$
- 200 mA Output Current for output voltages $< 2.5\text{V}$
- Low Dropout (LDO) voltage
 - 178 mV typical @ 250 mA for $V_{\text{OUT}} = 2.8\text{V}$
- 0.4% Typical Output Voltage Tolerance
- Standard Output Voltage Options:
 - 1.2V, 1.8V, 2.5V, 3.0V, 3.3V, 5.0V
- Stable with 1.0 μF Ceramic Output capacitor
- Short Circuit Protection
- Overtemperature Protection

Applications

- Battery-powered Devices
- Battery-powered Alarm Circuits
- Smoke Detectors
- CO^2 Detectors
- Pagers and Cellular Phones
- Smart Battery Packs
- Low Quiescent Current Voltage Reference
- PDAs
- Digital Cameras
- Microcontroller Power

Related Literature

- AN765, "Using Microchip's Micropower LDOs", DS00765, Microchip Technology Inc., 2002
- AN766, "Pin-Compatible CMOS Upgrades to BiPolar LDOs", DS00766, Microchip Technology Inc., 2002
- AN792, "A Method to Determine How Much Power a SOT23 Can Dissipate in an Application", DS00792, Microchip Technology Inc., 2001

General Description

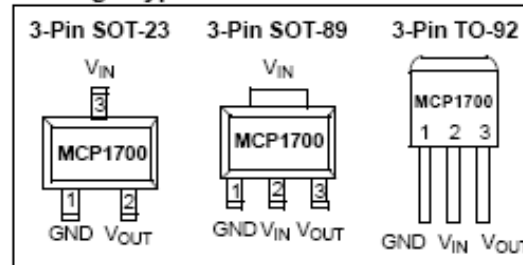
The MCP1700 is a family of CMOS low dropout (LDO) voltage regulators that can deliver up to 250 mA of current while consuming only 1.6 μA of quiescent current (typical). The input operating range is specified from 2.3V to 6.0V, making it an ideal choice for two and three primary cell battery-powered applications, as well as single cell Li-Ion-powered applications.

The MCP1700 is capable of delivering 250 mA with only 178 mV of input to output voltage differential ($V_{\text{OUT}} = 2.8\text{V}$). The output voltage tolerance of the MCP1700 is typically $\pm 0.4\%$ at $+25^\circ\text{C}$ and $\pm 3\%$ maximum over the operating junction temperature range of -40°C to $+125^\circ\text{C}$.

Output voltages available for the MCP1700 range from 1.2V to 5.0V. The LDO output is stable when using only 1 μF output capacitance. Ceramic, tantalum or aluminum electrolytic capacitors can all be used for input and output. Overcurrent limit and overtemperature shutdown provide a robust solution for any application.

Package options include the SOT-23, SOT-89 and TO-92.

Package Types



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