

AS1357

Programmable Triple LDO

Product Brief

1 General Description

The AS1357 is a high-performance triple CMOS low-dropout voltage regulator in a single 4x4 package. The efficient set of programmable power supplies is optimized to deliver the best compromise between quiescent current and regulator performance for mobile phones, PDAs, MP3 players, and other battery powered devices.

The one-time-programmable (OTP) function provides greater design flexibility by allowing for independent programming of the output voltage for each regulator on-site. The OTP function allows for fast prototyping as well as full-production in the field. Factory trimmed versions are also available.

Stability is guaranteed with ceramic output capacitors of only 1 μ F ($\pm 20\%$ – X5R) up to 4.7 μ F ($\pm 20\%$ – X5R). The low equivalent series resistance (ESR) of these capacitors ensures low output impedance at high frequencies.

Regulation performance is excellent even under low dropout conditions, when the power transistor has to operate in linear mode.

The low-noise performance allows direct connection of noise sensitive circuits without additional filtering networks.

The AS1357 is available in a 12-pin QFN 4x4 package or in a wafer bumping package.

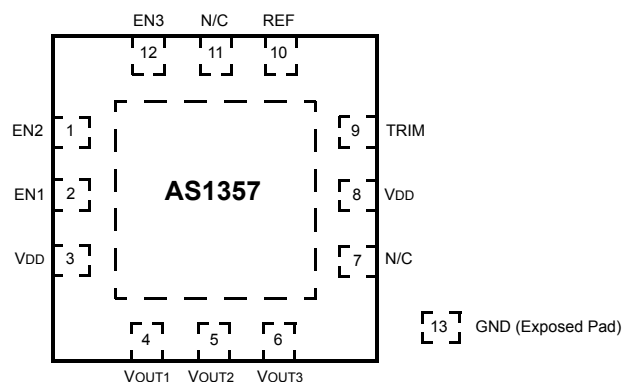
2 Key Features

- 3 Independent Voltage Regulators with Shutdown
- Output Current: 200mA each LDO
- One Time Programmable Output Voltage (User- or Factory-Trimmed)
- Programmable Output Voltage Range: 1.8 to 3.3V in 0.1V Steps
- Accuracy: $\pm 1.5\%$
- PSRR: 70dB at 1kHz, 40dB at 100kHz
- Line Regulation: $\pm 2\text{mV}$
- Load Regulation: $\pm 0.6\text{mV}$
- Supply Range: 3 to 5.5V
- 0.2V Dropout Voltage @ I = 200mA
- Shutdown Current: $\leq 1\mu\text{A}$
- Supply Current Without Load: 175 μA (typ)
- Softstart for Low Inrush Current
- Stable with low ESR Ceramic Capacitors from 1 to 4.7 μF
- Low Noise – 40 μV rms @10Hz to 100kHz Bandwidth
- Thermal Protection
- Over-Current Protection
- Temperature Range: -40 to +85°C
- Wafer Bumping
- QFN12 4x4, Pitch 0.8mm Package

3 Applications

The AS1357 is ideal for cordless and mobile phones, MP3 players, CD and DVD players, PDAs, handheld computers, digital cameras, and any other hand-held battery-powered device.

Figure 1. Pinout Assignments (Top View)



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