



## **45V 500mA LDO Offers Low $25\mu\text{V}_{\text{RMS}}$ Noise, 60dB PSRR at 1MHz & Active Output Discharge for Load Protection**

MILPITAS, CA – January 12, 2016 – Linear Technology Corporation announces the [LT3066](#), a high voltage, low noise, low dropout voltage linear regulator offering precision, programmable current limit, active discharge, a power good flag and improved power supply rejection ratio (PSRR) capability. The device delivers up to 500mA output current with a 300mV dropout voltage at full load. The LT3066 includes an internal NMOS pull-down that discharges the output voltage if either the SHDN pin is driven low or the input voltage is turned off. This rapid active output discharge helps protect the load in applications requiring power conditioning on both start-up and shutdown, such as high-end imaging sensors.

The LT3066 features a wide 1.8V to 45V input voltage range and output voltage is adjustable from 0.6V to 19V. A single REF/BYP pin capacitor provides low noise operation of only  $25\mu\text{V}_{\text{RMS}}$  across a 10Hz to 100kHz bandwidth, and also reference soft-start functionality, preventing output voltage overshoot at turn-on. Output voltage tolerance is highly accurate at  $\pm 2\%$  over line, load and temperature. An additional single INFILT pin capacitor improves PSRR by 15dB to 20dB for frequencies from 20kHz to 1MHz, with 1MHz PSRR reaching 60dB.

The LT3066 operates with a very small, low cost, 3.3 $\mu\text{F}$  ceramic output capacitor, optimizing stability and transient response. The device's PWRGD flag indicates output regulation. One resistor programs the external precision current limit ( $\pm 10\%$  over temperature). Moreover, the device's internal protection circuitry includes reverse-battery protection, reverse-current protection, current limit with foldback, and thermal limiting. The device's wide input and output voltage ranges, fast transient response, low quiescent current of 64 $\mu\text{A}$  (operating) and <2 $\mu\text{A}$  (in shutdown) make it an excellent choice for industrial power supplies, avionic power supplies, automotive power supplies, battery-powered systems and instruments requiring optimum run time, and high reliability power supplies requiring more extensive protection.

The LT3066 is available in thermally enhanced 12-lead 3mm x 4mm DFN and 12-lead MSOP packages, both with a compact footprint. The E- and I-grade versions are available from

stock with an operating junction temperature of  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$ . 1,000 piece pricing starts at \$2.00 each for the E-grade. For more information, visit [www.linear.com/product/LT3066](http://www.linear.com/product/LT3066).

**Photo Caption:**  $45\text{V}_{\text{IN}}$ ,  $0.6\text{V}_{\text{OUT}}$  500mA Low Noise LDO with Active Discharge


### Summary of Features: LT3066

- Output Current: 500mA
- Dropout Voltage: 300mV
- Input Voltage Range: 1.8V to 45V
- Programmable Precision Current Limit:  $\pm 10\%$
- Active Discharge
- Power Good Flag
- Single INFILT Capacitor Enhances High Frequency PSRR by 15dB to 20dB
- Low Noise:  $25\mu\text{V}_{\text{RMS}}$  (10Hz to 100kHz)
- Adjustable Output Voltage: 0.6V to 19V
- Single Capacitor Soft-Starts Reference & Lowers Output Noise
- Output Tolerance:  $\pm 2\%$  Over Line, Load & Temperature
- Stable with Low ESR, Ceramic Output Capacitors (3.3 $\mu\text{F}$  minimum)
- Current Limit Foldback Protection
- Shutdown Current:  $< 2\mu\text{A}$
- Reverse Battery & Thermal Limit Protection
- 12-Lead 3mm  $\times$  4mm DFN & 12-Lead MSOP Packages

The USA list pricing shown is for budgetary use only. International prices may differ due to local duties, taxes, fees and exchange rates.

## About Linear Technology

Linear Technology Corporation, a member of the S&P 500, has been designing, manufacturing and marketing a broad line of high performance analog integrated circuits for major companies worldwide for over three decades. The Company's products provide an essential bridge between our analog world and the digital electronics in communications, networking, industrial, automotive, computer, medical, instrumentation, consumer, and military and aerospace systems. Linear Technology produces power management, data conversion, signal conditioning, RF and interface ICs,  $\mu$ Module<sup>®</sup> subsystems, and wireless sensor network products. For more information, visit [www.linear.com](http://www.linear.com)

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