Highly-Integrated, Four-Channel Low Dropout Regulator Enhances Power Management IC Portfolio

*TC1307 integrates four 150mA LDOs and a microprocessor monitor into one package - save space & cost*

Enhancing its efforts in designing highly integrated devices, Microchip introduced a quad, CMOS low dropout regulator (LDO) with Select Mode™ technology, shutdown and independent reset functions, saving significant board-space and costs.

The new TC1307 offers excellent performance and fast response time from shutdown (10µsec), responding better to input and output transient conditions than similar solutions, making it ideal for a wide array of applications including battery-powered, computing and portable, which demand the longest possible battery life. The integrated Select Mod feature allows output voltage selection, virtually eliminating the need for designers to qualify multiple LDOs, which, in turn, reduces manufacturing costs and increases design flexibility.

Available in a space-saving 16-pin QSOP package, the new device offers a maximum operating current of only 80 microamps (µA) per channel. All four outputs of the TC1307 typically consume a total of 220µA supply current, hold the output voltage to a tolerance of 0.5% and require 200 millivolts (mV) of headroom for regulation at the maximum output current of 150 milliamps (mA). In addition to the four, high-performance LDOs, the TC1307 also includes a voltage detector with a delayed RESET output that can be configured as a low battery detector or a microcontroller reset generator.

With the announcement of the TC1307, Microchip reaffirms its commitment to advancing integrated technology in the analog marketplace. This highly-integrated quad LDO saves designers cost, space and design complexity while increasing flexibility and overall system efficiency.

Each of the four integrated LDOs has independent shutdown input, further reducing power consumption and extending battery life in portable applications. The tri-state Select Mode input pin allows the designer to select the output voltages from four different values (1.8V, 2.5V, 2.8V or 3.0V), which makes the TC1307 adaptable for a wide range of multiple output applications.

For stability, the TC1307 requires only one 1µF output capacitor per LDO that can be ceramic, tantalum or aluminum, over the entire input voltage operating range and 0mA to 150mA rated load range. The product also features low output noise and excellent response when faced with sudden line and load changes. Additional integrated features include overcurrent and over-temperature protection providing full protection from external load faults.

Small size, low dropout voltage, and minimal supply current make the TC1307 ideal for use in battery-
Microchip has integrated analog technology, peripherals and features to meet today’s demanding design requirements. Our broad spectrum of 250 stand-alone analog devices address thermal management, power management, mixed-signal, linear and interface solutions. Combined with Intelligent Analog microcontrollers, Microchip offers an extensive analog portfolio for thousands of high-performance design applications in the automotive, communications (wireless), consumer, computing and industrial control markets.

The device comes in a space-saving 16-pin QSOP package. Pricing for the TC1307 is $1.84 each in 1,000 unit quantities. Samples and volume production are available today.

Datasheets for the devices can be found at www.microchip.com/tc1307.

For additional information or pricing on these devices, contact any Microchip sales representative or authorized worldwide distributor or visit www.microchip.com.

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