

ISSUE: December 2018

Buck/Boost Regulator Simplifies Power Backup Using Supercaps

<u>Maxim Integrated's</u> Continua family of backup power regulators charge a backup power source, such as a supercapacitor or capacitor bank in seconds to deliver power to critical system components when the main power source is turned off. The MAX38888 reversible buck/boost regulator, the first member of the Continua family, delivers what the company describes as an industry-leading 95% peak efficiency.

Operating over 2.5-V to 5-V input in buck mode, the MAX38888 charges an energy storage device at up to 500mA peak inductor current. On supply failure, the IC operates in a boost mode, providing 2.5-V to 5-V output at up to 2.5-A peak inductor current from an energy storage device, discharging all the way to 0.8 V (see the figure).

In portable electronics where the main power source is a battery, the MAX38888 doubles battery life by lowering quiescent current up to 15 times versus competitive solutions during idle mode, according to the vendor. The MAX38888 is available in a 38mm² solution size, which is said to be 33% smaller than the closest competitive solution.

The MAX38888 is available at Maxim's website for \$2.98 each in quantities of 1000. For more product details, see the MAX38888 product <u>page</u>. For more on the application of this part, see the article "Need Uninterrupted Power? Let A Supercapacitor Come To The Rescue" in the December 2018 issue of <u>How2Power Today</u>.

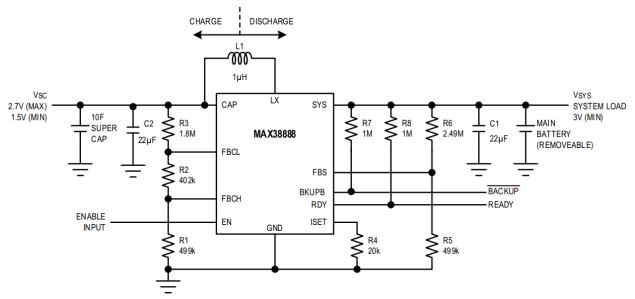


Figure. The first member of the Continua family of backup power regulators, the MAX38888 charges and discharges a backup supercapacitor or capacitor bank to deliver continuous power to critical systems when the main power is off. It operates with up to 95% efficiency during charge and discharge operations.