

# LTC1516

- 2V to 5V input range
- Output current: 20mA ( $V_{IN} > 2V$ ), 50mA ( $V_{IN} > 3V$ )
- Regulated 5V  $\pm 4\%$  output
- Ultra low power: typical operating  $I_{CC} = 12\mu A$
- Short circuit/thermal protection
- No inductors
- $I_{CC}$  in shutdown:  $< 1\mu A$
- Shutdown disconnects load from  $V_{IN}$
- Internal oscillator: 600KHz
- Ultra-small application circuit (0.1 square inches)

The LTC1516 is a micropower charge pump DC/DC converter that delivers a regulated 5V  $\pm 4\%$  from supply voltages ranging from 2V to 5V. With extremely low supply current of 12 $\mu A$  typical under no load and shutdown current of just 1 $\mu A$ , the LTC1516 is ideal for battery-operated applications which need a voltage generator for 5V-powered flash memory. The LTC1516 can provide 50mA when  $V_{IN}$  is greater than 3V and 20mA output current for  $V_{IN}$  between 3V and 2V. Typical efficiency ( $V_{IN} = 3V$ ) exceeds 70% with load currents as low as 50 $\mu A$ .

A 600KHz switching frequency minimizes the size of the four external capacitors and reduces interference in communications systems which utilize a 455KHz IF frequency. Two 0.22 $\mu F$  capacitors and two 10 $\mu F$  capacitors are all that are required for operation. The total solution covers just 0.1 square inches of board area. The LTC1516 provides compact voltage conversion for all Intel Flash memory devices that are powered from 5V.

During shutdown, the LTC1516 disconnects the load from  $V_{IN}$ , eliminating current drain. Important protection features of the LTC1516 include continuous output short circuit protection and thermal overload protection. The LTC1516 is ideal for powering 5V logic in PCMCIA applications where only a 3.3V supply is available. Other applica-

tions include two-cell to 5V conversion, Lithium-Ion battery backup supplies and local 3.3V to 5V conversion for Intel Flash memory and logic supplies. For applications requiring 5V to 12V inductorless DC/DC conversion for  $V_{PP}$  programming at 12V, contact Linear Technology for information on the LTC1262.

## INTEL FLASH MEMORY SUPPORTED:

28F010, 28F001BX, 28F020, 28F002BC, 28F002BL, 28F002BV, 28F002BX, 28F200BL, 28F200BV, 28F200BX, 28F200CV, 28F004BE, 28F004BL, 28F004BV, 28F004BX, 28F004SC, 28F400BL, 28F400BV, 28F400BX, 28F400CE, 28F400CV, 28F008BE, 28F008BV, 28F008SA, 28F008SC, 28F800BV, 28F800CE, 28F800CV, 28F016SA, 28F016SC, 28F016SV, 28F016XD, 28F016XS, 28F032SA, Series 2 Cards, Series 2+ Cards, Value Series 100 Cards, Series 100 Miniature Cards

## AVAILABILITY:

Now

## CONTACT:

Linear Technology Corporation  
Product Marketing  
1630 McCarthy Boulevard  
Milpitas, CA 95035  
Phone: (408) 432-1900  
FAX: (408) 434-6441

### Efficiency vs Output Current

