

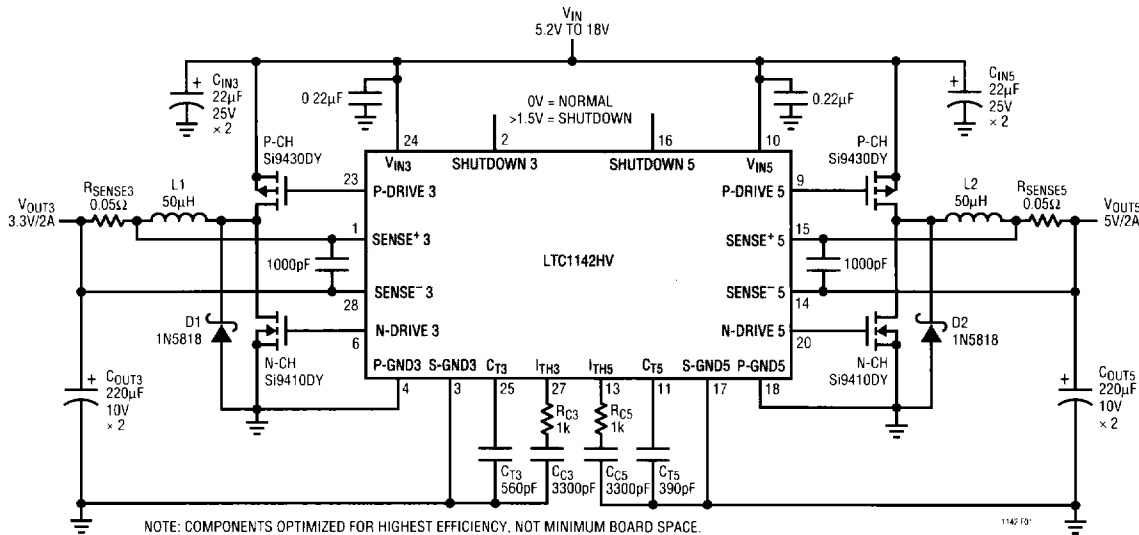
Dual 95% Efficient 3.3V and 5V Step-Down Switching Regulator

Portable computer and equipment applications which require from 6 to 10 rechargeable battery cells demand power conversion to 5V and 3.3V with the highest possible efficiency. DC/DC converters for these applications must also take up very little board space and consume negligible load current when the computer is inactive. This circuit uses the LTC1142HV dual synchronous switching regulator controller part to generate both 3.3V and 5V regulated supplies from a battery input. The dual power supply controller is housed in a single 28-lead shrink small outline package. The two power supply controllers operate without interaction and can be shut down independently. Efficiency for the 3.3V and 5V converters exceeds 92% over three decades of

load current by using synchronously switched external MOSFETs for low loss at high currents, and by using Burst Mode™ operation at low currents.

Current mode control provides excellent line and load regulation. Constant off-time architecture maintains constant ripple current in the inductor, easing the design of wide input range applications. At very low battery voltages, the 5V regulator section will enter 100% duty cycle which passes current directly to the output with DC losses in the MOSFET, inductor and sense resistor being the only factors limiting the output voltage.

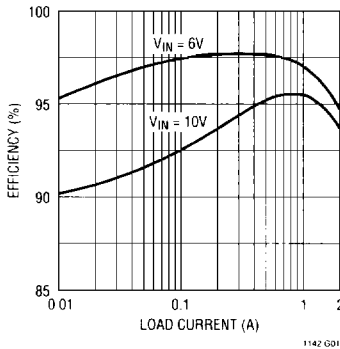
The LTC1142HV handles input voltages up to 20V. For other high efficiency step-down circuits, consult Application Note 54 from Linear Technology.



NOTE: COMPONENTS OPTIMIZED FOR HIGHEST EFFICIENCY. NOT MINIMUM BOARD SPACE.

R_S: KRL SL-1R050J
 L1, L2: COILTRONICS CTX50-2-MP
 PINS 5, 7, 8, 19, 21, 22: NC

5V Output Efficiency



3.3V Output Efficiency

