TS3300 Product Brief

0.6-3V_{IN}, 1.8-3.6V_{OUT}, 3.5µA, High-Efficiency Boost + Output Load Switch

FEATURES

- Combines Low-power Boost + Output Load Switch
- Boost Regulator
  - Input Voltage: 0.6V- 3V
  - Output Voltage: 1.8V- 3.6V
  - Efficiency: Up to 84%
  - No-load Input Current: 3.5µA
  - Delivers >100mA at 1.8V_{BO} from 1.2V_{BI}
  - Boost Shutdown Control
  - No External Schottky Diode Required
- Anti-Crush Capability
  - Prevents Input Voltage Collapse when powered with Weak/High Impedance Power Sources
- Single-Inductor, Discontinuous Conduction Mode Scheme with Automatic Peak Current Adjustment
- 16-Pin, Low-Profile, Thermally-Enhanced 3mm x 3mm TQFN Package

APPLICATIONS

Coin Cell-Powered Portable Equipment
Single Cell Li-ion or Alkaline Powered Equipment
Solar or Mechanical Energy Harvesting
Wireless Microphones
Wireless Remote Sensors
RFID Tags
Blood Glucose Meters
Personal Health-Monitoring Devices

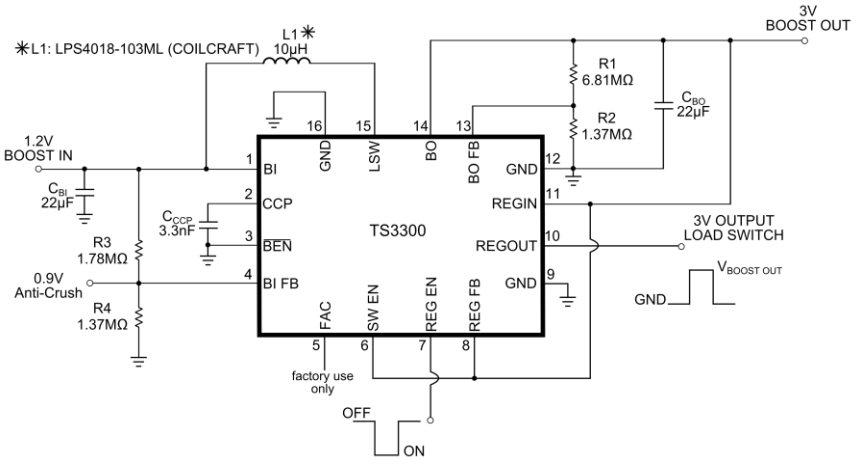
DESCRIPTION

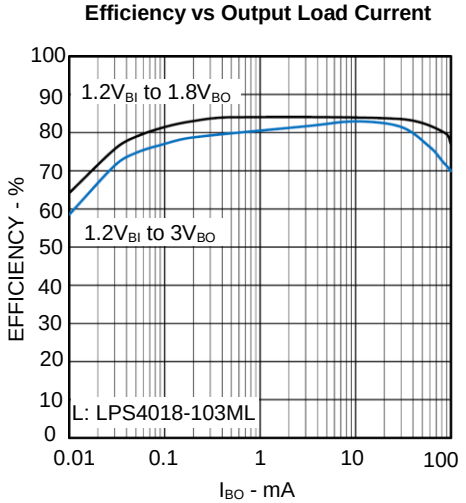
The TS3300 is a 1st-generation Touchstone Semi power management product that combines a high-efficiency boost regulator and an output load switch in one package. The boost regulator operates from a supply voltage as low as 0.6V and can deliver at least 75mA at 1.2V_{BI} to 3V_{BO}, an industry first.

The TS3300 includes an *anti-crush*^{TM} feature to prevent the collapse of the input voltage to the boost regulator when the input is a weak (high impedance) source. If the input voltage drops below a determined voltage threshold (settable by a resistor divider), the boost regulator switching cycles are paused, effectively limiting the minimum input voltage. *Anti-crush*^{TM} is useful in applications where a buffer capacitor at the boost's output can service burst loads, and the input source exhibits substantial source impedance (such as an old battery, or at cold temperatures).

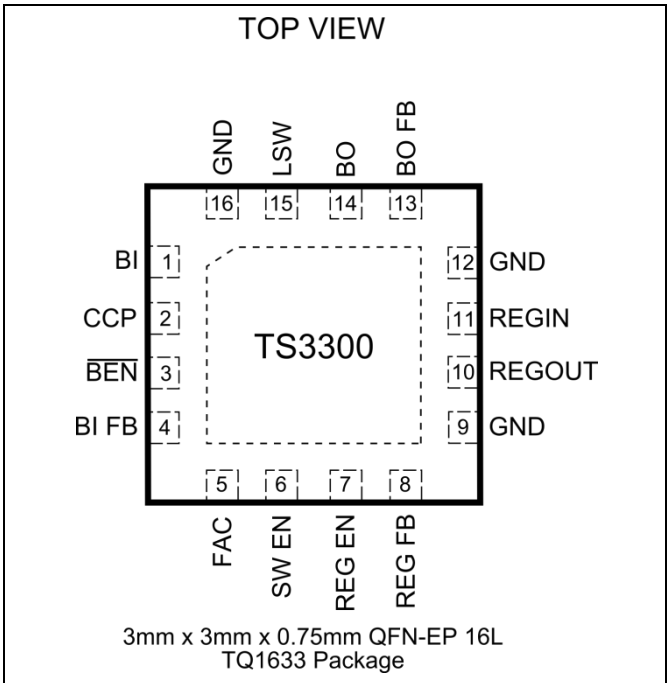
The TS3300 is fully specified over the -40°C to +85°C temperature range and is available in a low-profile, thermally-enhanced 16-pin 3x3mm TQFN package with an exposed back-side paddle. For best performance, solder the exposed back-side paddle to PCB ground.

TYPICAL APPLICATION CIRCUIT





PACKAGE/ORDERING INFORMATION



3mm x 3mm x 0.75mm QFN-EP 16L
TQ1633 Package

ORDER NUMBER	PART MARKING	CARRIER	QUANTITY
TS3300ITQ1633TP	3300I	Tape & Reel	-----
TS3300ITQ1633T		Tape & Reel	3000

Lead-free Program: Touchstone Semiconductor supplies only lead-free packaging.

Consult Touchstone Semiconductor for products specified with wider operating temperature ranges.