GENERAL DESCRIPTION

The TCS4335B is synchronous converters with an input-voltage range of 6V to 30V. It has an integrated low-side switching FET that eliminates the need for an external diode which reduces component count. Efficiency is maximized through the integrated 90-mΩ and 65-mΩ MOSFETs, low I_Q and pulse skipping at light loads. Using the enable pin, the shutdown supply current is reduced to 6 μA. This step-down (buck) converter provides accurate regulation for a variety of loads with a well regulated voltage reference that is 1.5% over temperature.

Cycle-by-cycle current limiting on the high-side MOSFET protects the TCS4335B in overload situations and is enhanced by a low-side sourcing current limit which prevents current runaway. A low-side sinking current-limit turns off the low-side MOSFET to prevent excessive reverse current.

Hiccup protection is triggered if the overcurrent condition continues for longer than the preset time. Thermal shutdown disables the device when the die temperature exceeds the threshold and enables the device again after the built-in thermal hiccup time.

FEATURES

- Wide Input Voltage Range: 6V ~ 30V
- Low $R_{DS(ON)}$ for Internal Switches (Top/Bottom): 90mΩ/65 mΩ
- 3A output current capability
- 500kHz Switching Frequency Minimize the External Components
- Internal 1.5-ms Soft-Start
- 0.925 V Voltage Reference with ±0.8% Accuracy
- Current Mode Control
- Pulse Skipping for Light-Load Efficiency
- Hic-cup Mode Output Short Circuit Protection
- Compact Package: ESOP8
- Protection
  Under Voltage Protection (UVP)
  Over Voltage Protection (OVP)
  Over Current Protection (OCP)
  Short Circuit Protection (SCP)
  Over Thermal Protection (OTP)

APPLICATION

- Automotive Systems
- Network Terminal Equipment
- Security Monitoring Camera
- Printer Systems
- Industrial Power Systems
- Distributed Power Systems

TYPICAL APPLICATIONS