



General Description

The MxL745951P is a single-channel current-limited switch that integrates a MOSFET and a controller. It features a low $R_{DS(ON)}$ of 0.79m Ω , and a single device can support continuous currents of up to 60A. It also supports parallel operation for applications requiring higher currents. In parallel applications, all devices can achieve state synchronization and load current balance during start-up and steady-state operation.

The MxL745951P supports output soft-start control and load current limiting during start-up to minimize inrush current when inserting backplanes. It integrates an on-chip temperature sense and a high-precision load current monitor. The device also features robust protection capabilities, including input voltage under-voltage protection (UVP) and over-voltage protection (OVP), output current over-current protection (OCP), short-circuit protection (SCP), over-temperature protection (OTP), and MOSFET fault diagnosis protection.

The MxL745951P integrates a PMBus™ interface and provides telemetry for input voltage (V_{IN}), input current (I_{IN}), input energy (E_{IN}), output voltage (V_{OUT}), output current (I_{OUT}), input power (P_{IN}), and output power (P_{OUT}). It can also monitor and report fault statuses via the PMBus interface, as well as modify configurations such as warning/fault thresholds and timers.

The MxL745951P is available in a compact 5mm × 4.5mm VQFN-26L package.

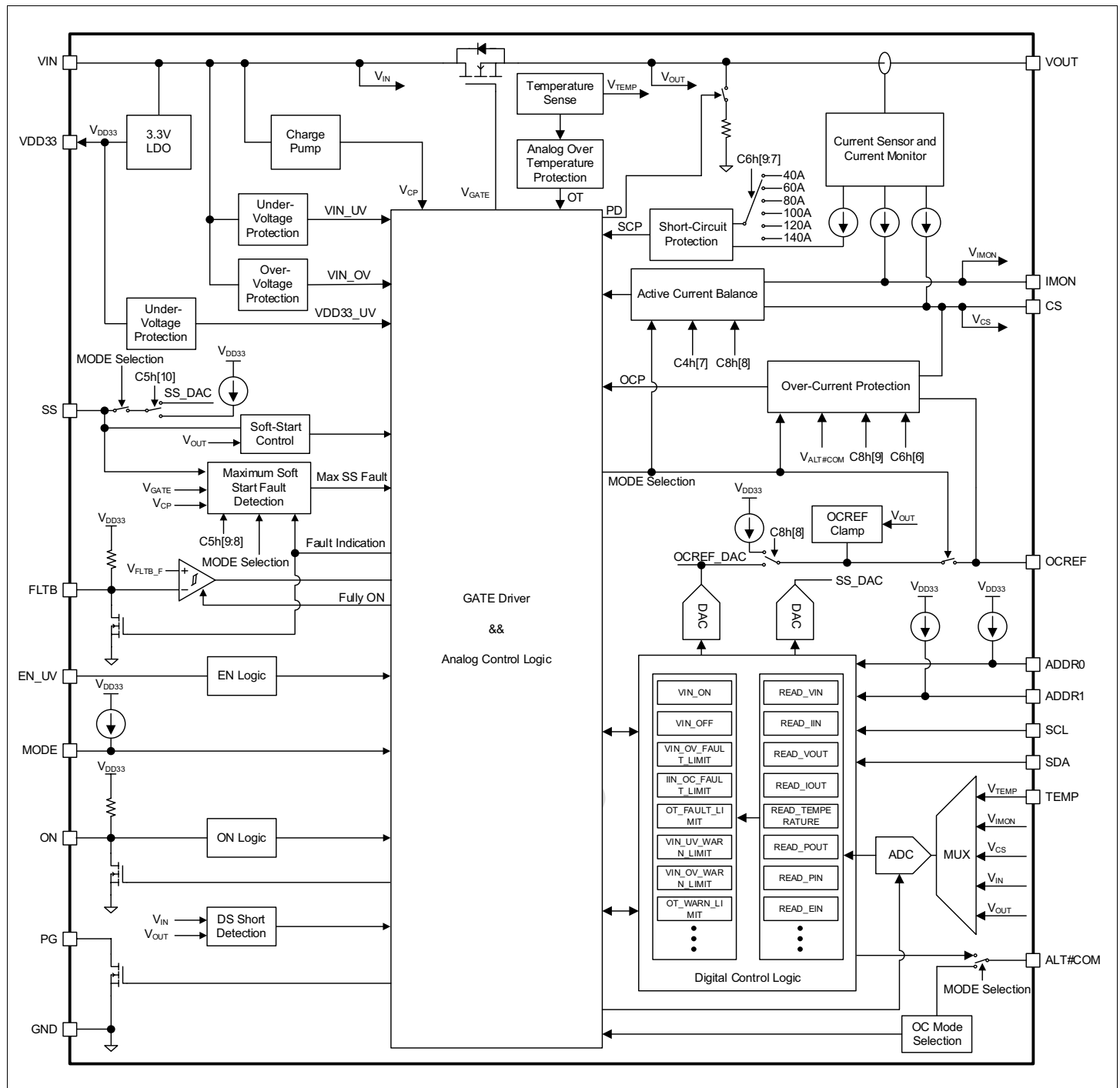
Applications

- Server and high-performance computing
- Data center switches and routers
- Networking
- Plug-in modules
- Fan trays

Features

- 2.9V to 16V operating input range
- Up to 60A output current (I_{OUT})
- 0.79m Ω on-resistance
- PMBus/I²C 1.3 compatible
- $\pm 1\%$ I_{MON} reporting accuracy
- Configurable over-current limit
- Configurable short-circuit current limit
- Supports parallel operation for high-current application
- Configurable soft-start time via SS pin or register
- Built-in fuse health reporting
- Fault signal output (FLT_B)
- Power-Good (PG) indication
- Configurable output discharge
- Configurable master/slave pin (MODE)
- Faults auto-record to the non-volatile memory (NVM)
- V_{IN} OVP, SCP, OCP, and OTP with options for No Action, Latch, Retry, or Hiccup modes
- Intelli-Fuse junction temperature monitoring
- Built-in NVM to store custom configurations
- High precision E_{IN} , P_{IN} , P_{OUT} , I_{IN} , and I_{OUT} reporting
- Configurable T_{ON_DELAY} and T_{OFF_DELAY}
- Black box information recording
- NVM write protection
- Available in a 5mm × 4.5mm VQFN-26L package

Block Diagram



Ordering Information

Ordering Part Number	Operating Temperature Range	Lead Free	Package	Packaging Method
MXL745951P-AQF-R	–40°C to 125°C	Yes	VQFN-26L	Tape and Reel



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