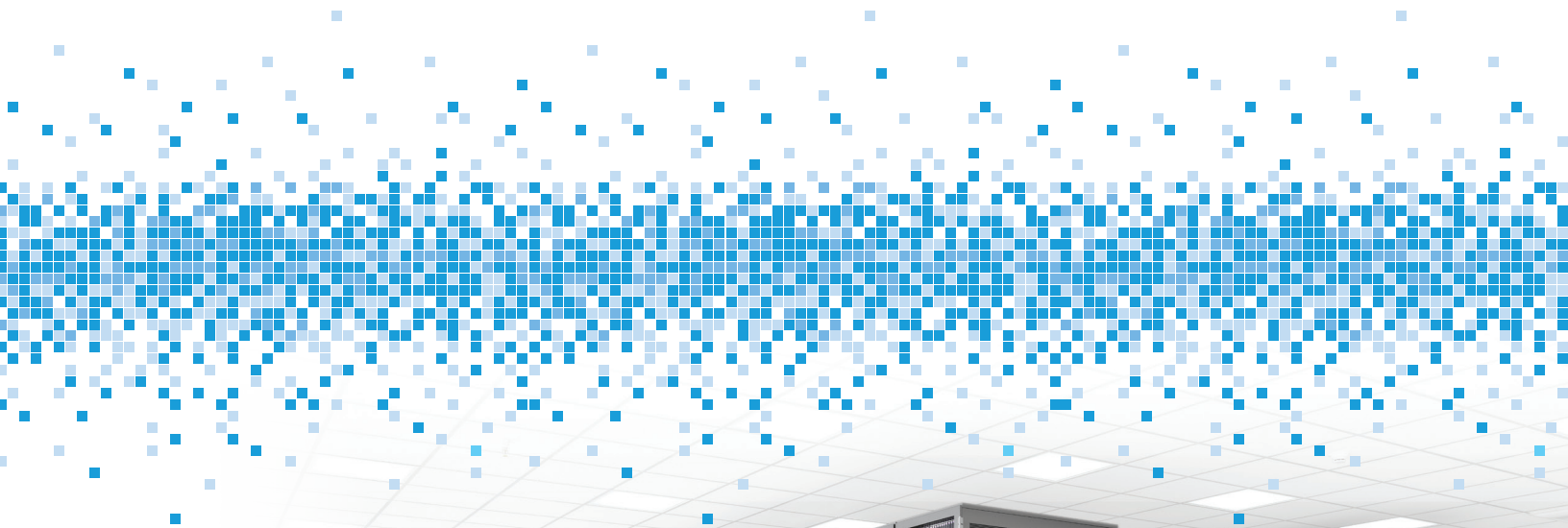


High-Performance, Integrated Enterprise Power Loss Protection (PLP) ICs

Advanced protection for SSID and RAID systems



Qorvo
all around you

Protect Complex Computing Environments

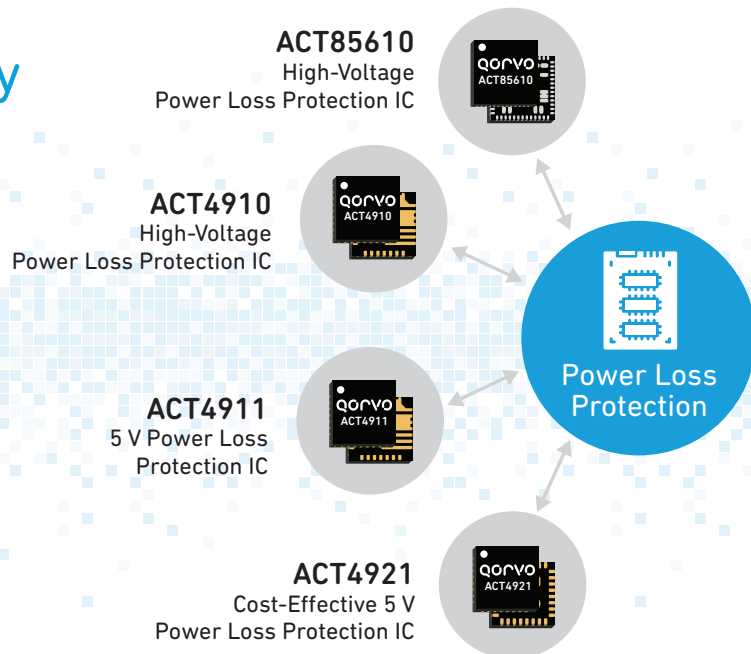
Power loss in enterprise systems can result in the destruction or corruption of critical data, often leading to staggering financial and productivity impacts, and permanent damage to a company's reputation.

To avoid power loss emergencies, industry leaders are turning to Qorvo's ActiveCips™ family of advanced PLP products. These PLP ICs are designed for use in solid-state drives (SSDs) and other applications where detecting imminent power loss and supplying back-up power quickly is critical to uninterrupted operation of the system. Qorvo's PLP products ensure that there is enough time following a power loss for the storage or computing system to back up mission-critical data.

Qorvo's industry-leading integration and its ability to customize circuits, to make it easy for designers to solve challenges unique to enterprise storage and computing applications such as:

- Solid-state drives
- Industrial environments
- Backup power
- Hot plug devices
- Enterprise and data center equipment
- Networking and storage
- Computing

The ACT Power Loss Protection Family



With a wide range of input voltages, Qorvo's ACT family of PLP ICs offers highly integrated power loss protection solutions by incorporating high-voltage capacitors to store energy and generate a readily available back-up power source. These PLP solutions include a hot swap compatible e-Fuse that limits inrush current during hot swap and supports a smooth and reliable power up sequence. When the host power supply or main input power supply is lost, the back-up energy stored on high-voltage capacitors is tapped to provide uninterrupted power to the system.

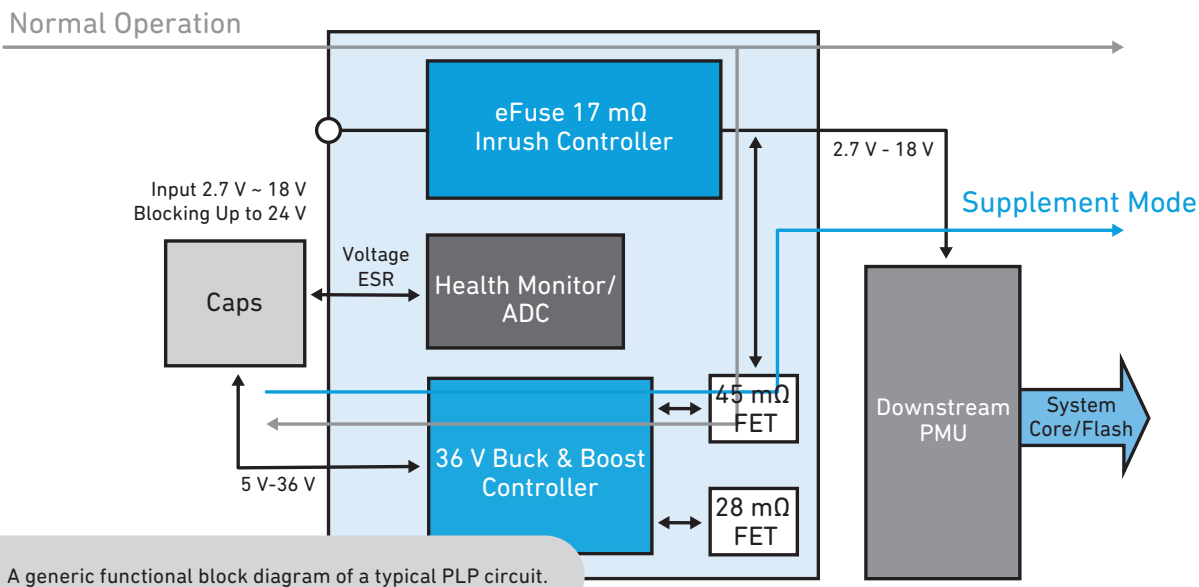
CiPS solutions from Qorvo® offer:

- A high degree of configurability in setting power loss detection thresholds
- Health monitoring that ensures adequate back up power is available
- Storage capacitor health check and aging checks
- Current and voltage measurements for telemetry

This flexibility aids system designers in optimizing size, cost and performance metrics, and allows customizable solutions for a multitude of applications and need-based optimization.

A built-in boost converter provides high-voltage energy storage to minimize storage capacitor size requirements. The same power stage is operated in boost mode to boost the input voltage to a higher voltage and the energy is stored to output storage capacitors. Upon loss of input power, the same power stage and regulator is operated in "buck", or step-down, mode to draw power from the storage capacitors and discharge them to provide power to the system. The built-in buck converter regulates the storage voltage to a fixed output voltage that can be used by the system to continue operating even after the input power is lost. The boost/buck regulator contains internal, back-to-back FETs to provide bi-directional input to output isolation. The IC also provides hot swap and inrush current control.

Power Loss Protection (PLP) Functionality



Industry's Highest Degree of Customization and Performance

The ACT family of PLP ICs is highly flexible and can be easily configured using the I2C interface and configured to use suitable external components. Each IC features programmable storage capacitor voltage to optimize the storage capacitor sizing and the required back-up system run time that the PLP must support. The flexibility allows the user to minimize the use of external storage capacitors to reduce cost and size. Adjustable health check parameters can be used to configure thresholds to supply the status of available back-up power to the system. Configurable output regulation voltage to the system in supplement mode offers the flexibility to use back-up power without waste to minimize the storage capacitor value needed and to extract maximum back-up run time for the system.

The ability to reuse existing parts that are proven and reliable to fit customer design requirements means that products can get to market faster. Qorvo's ICs are compact, highly integrated, customizable, and configured exactly to the customers specifications.

Performance Parameters

Parameter	ACT4921	ACT4911	ACT4910	ACT85610
Operating Input Range	2.7 V ~ 7 V	2.7 V ~ 8 V	2.7 V ~ 18 V	2.7 V ~ 14 V
Bus Voltage	2.7 V ~ 6 V	2.7 V ~ 8 V	2.7 V ~ 18 V	–
eFuse Abs Max Voltage	8 V	10 V	24 V	20 V
eFuse FET Rds(on)	20 mΩ	17 mΩ	17 mΩ	17 mΩ
Storage Boost Voltage	5 V ~ 28 V	5 V ~ 36 V	5 V ~ 36 V	31 V
Maximum Input Current	6A	10A	10A	10A
Buck FET RDS(on) (HS & LS)	80 mΩ & 60 mΩ	45 mΩ & 28 mΩ	45 mΩ & 28 mΩ	60 mΩ & 35 mΩ
Buck Current	6A	9A	9A	8A
Blocking FET	30 mΩ	No	No	30 mΩ
I ² C Interface	Yes	Yes	Yes	Yes
Autonomous Health Monitoring	Yes	Yes	Yes	Yes
ADC	No	Yes	Yes	12 bit, 8 channels
Buck Operation Frequency	500 kHz ~ 1.5 MHz	330 kHz ~ 1.13 MHz	330 kHz ~ 1.13 MHz	562 kHz, 1.125 MHz, 1.5 MHz, 2.25 MHz
Package	4x4 mm QFN24	5x5 mm QFN28	5x5 mm QFN28	6x6 mm QFN52L

Power Designed with a Purpose

Qorvo's turnkey solutions deliver energy-saving power conversion architectures that minimize energy usage, reduce design time and qualification time, and compress system development time to market by as much as 50%. Our scalable core platforms are used for charging AND powering embedded digital control systems for end applications in the industrial, commercial and consumer equipment markets.

For more information about our integrated PLPs, visit www.qorvo.com/products/power-management/power-loss-protection-devices