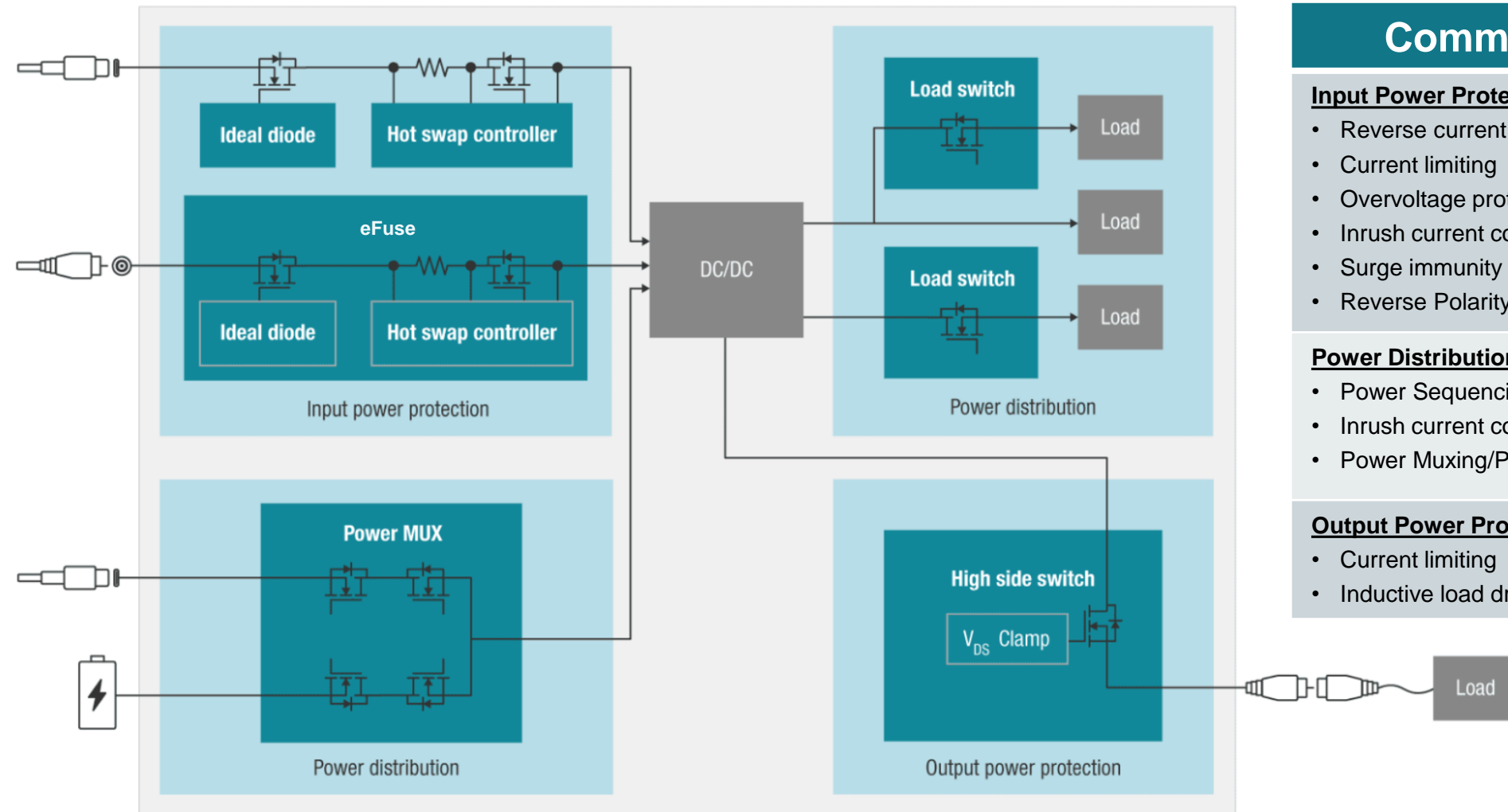


Power Switches Overview Video

A brief overview of Load Switches, Power MUXes, eFuses, Ideal Diodes, and High Side Switches and their applications

Power Switches | Use Cases



Common Design Challenges

Input Power Protection

- Reverse current blocking
- Current limiting
- Overvoltage protection
- Inrush current control
- Surge immunity
- Reverse Polarity Protection

Power Distribution

- Power Sequencing
- Inrush current control
- Power Muxing/Power Oring

Output Power Protection

- Current limiting
- Inductive load driving

Power Switches | End Equipment Overview

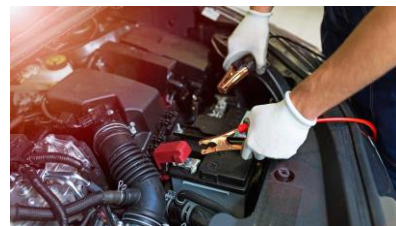
Personal Electronics



Industrial



Power Switches

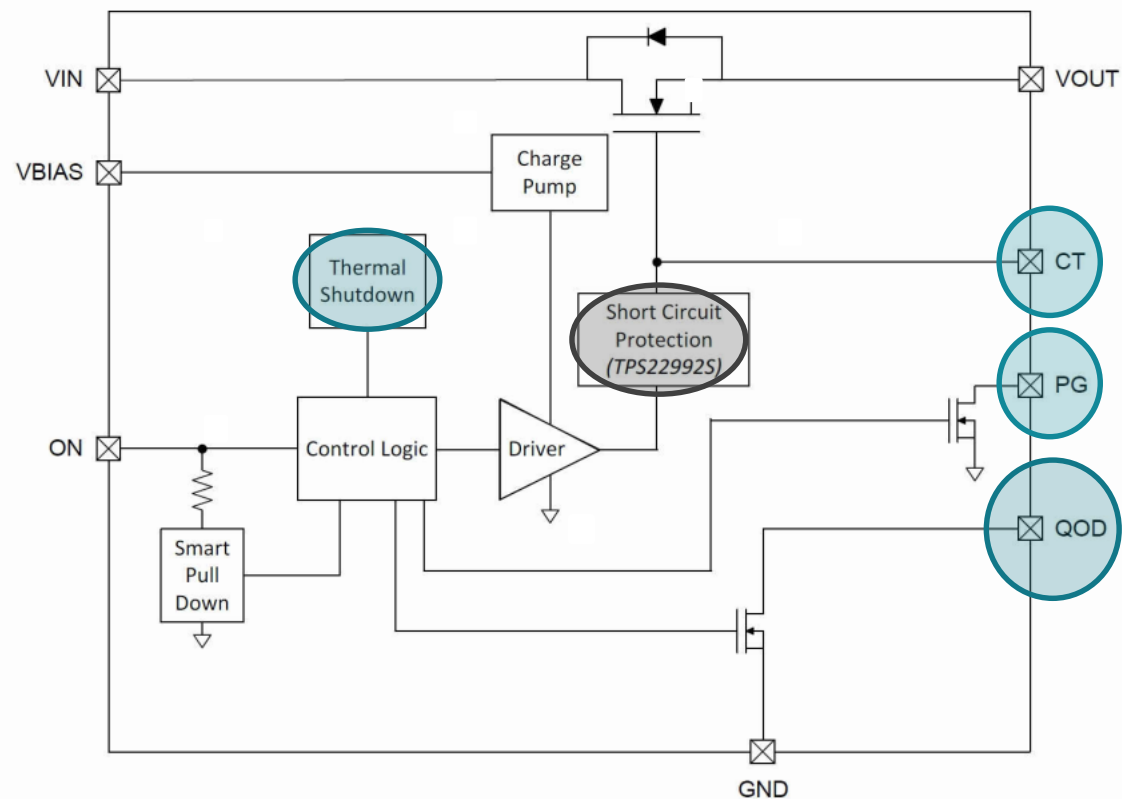


Automotive



Enterprise/Comms

Load Switch Overview



Load Switch Block Diagram

Inrush Current Control

Quick Output Discharge

Thermal Shutdown

Power Good Signal

Low Shutdown and Quiescent current allows for extended battery life

Small Size saves board space

Load Switch Applications



Computers

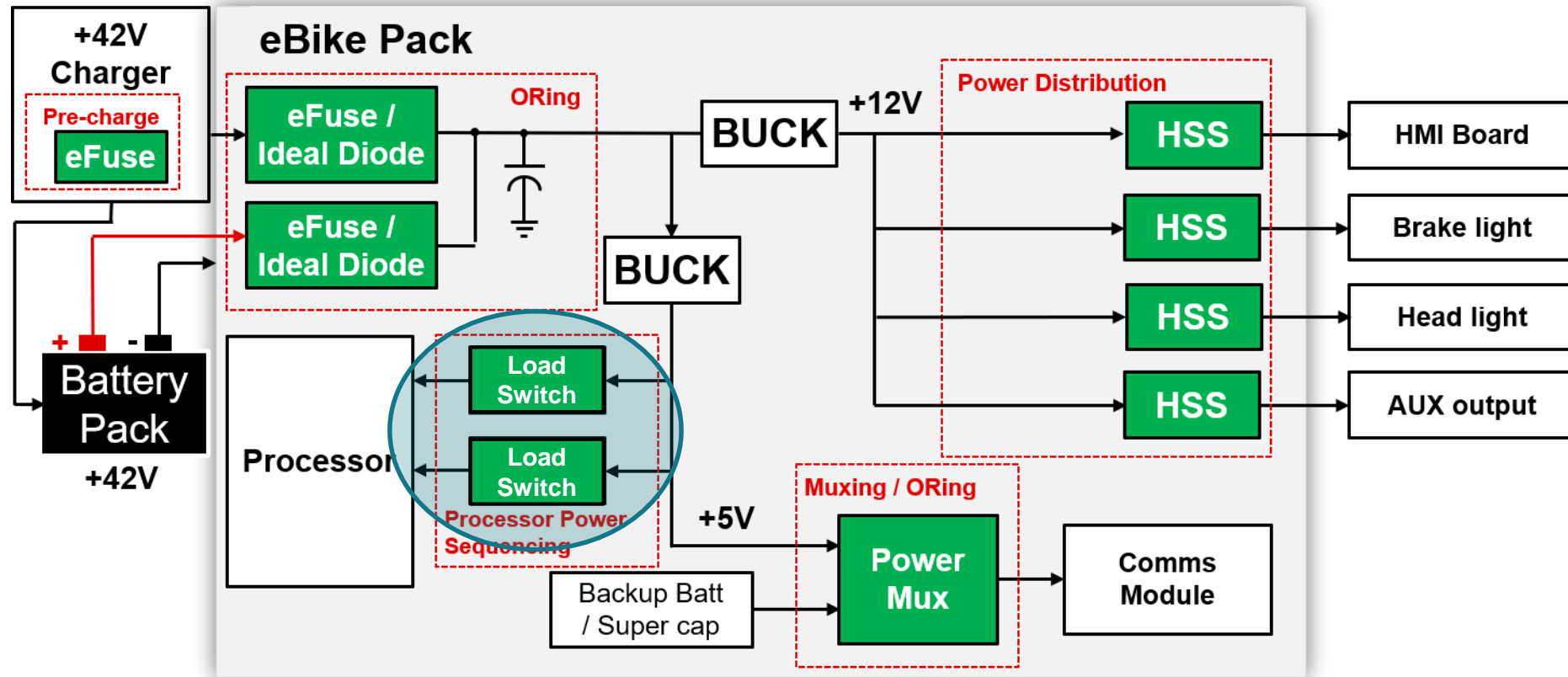


**Data
Storage**



eBike

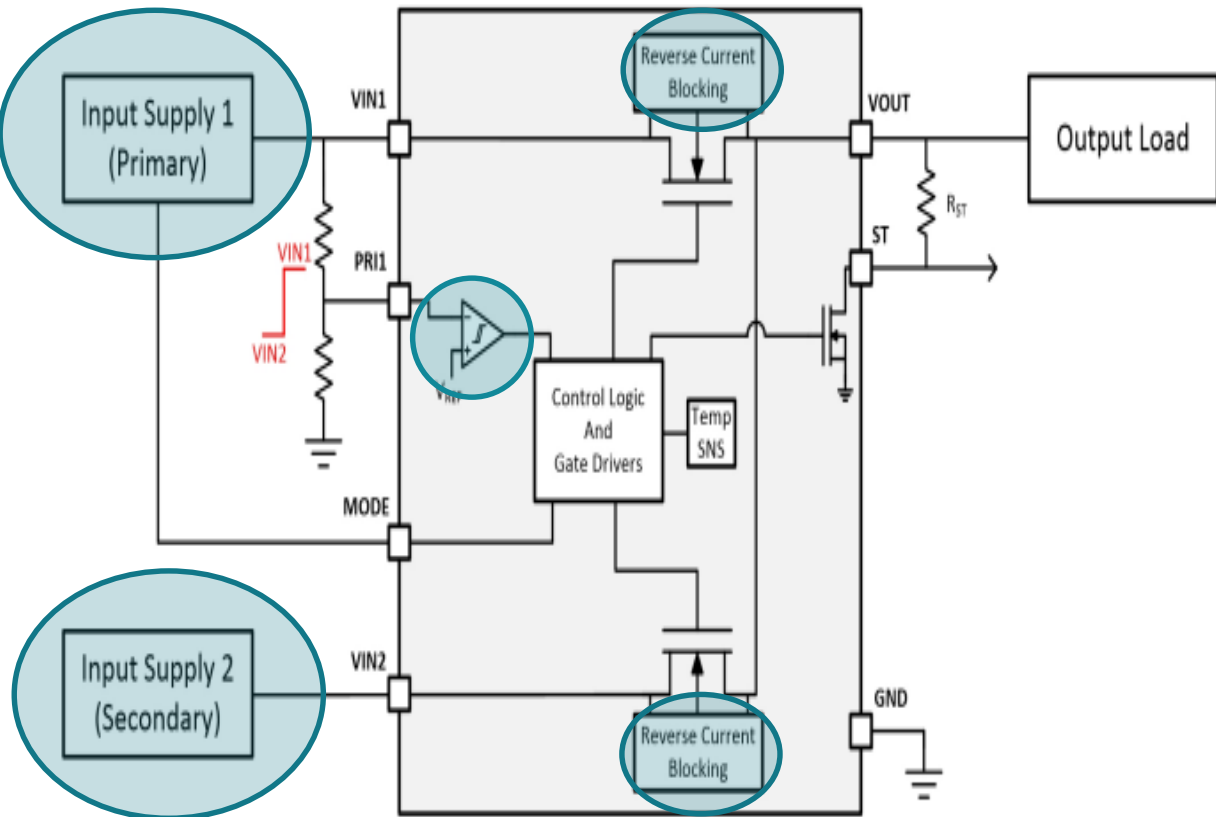
eBike EERD



Visit [TI.com/LoadSwitch](https://www.ti.com/LoadSwitch)

to explore our
Load Switch portfolio

Power MUX Overview



Power MUX Block Diagram

Priority

Multiple Power Sources

Reverse Current Blocking and Reverse Polarity Protection

Short Circuit Protection

Inrush Current Control

Seamless Switchover Support

Power MUX applications



Smartphone
(battery/wired/wireless charging)

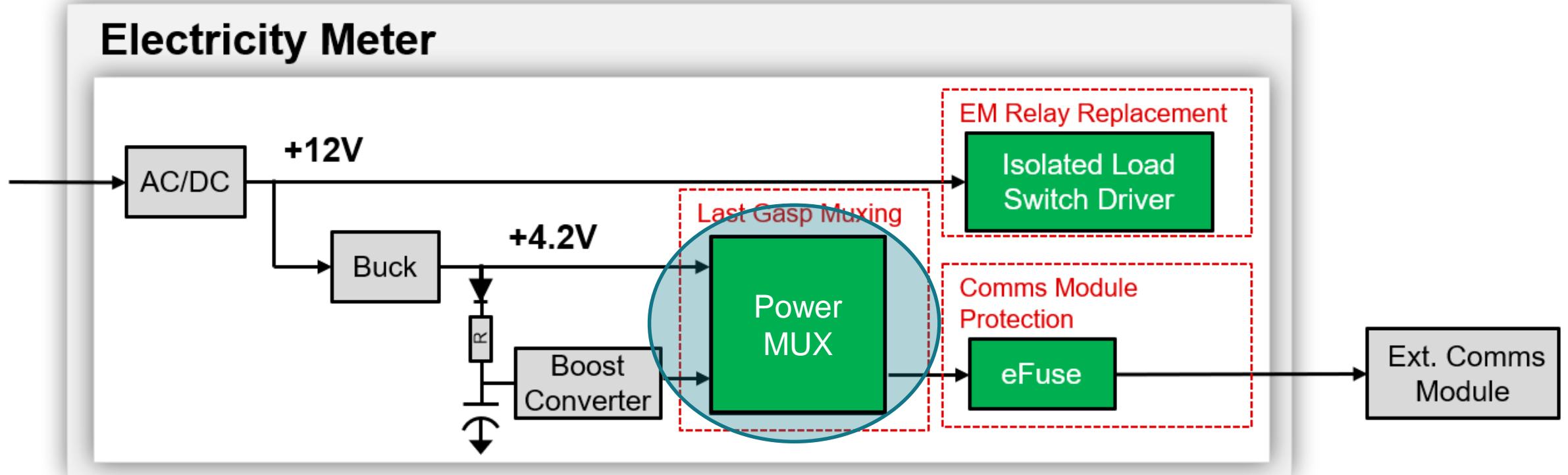


Smoke Detectors
(backup battery)



E-Meter
(backup battery)

E-Meter EERD

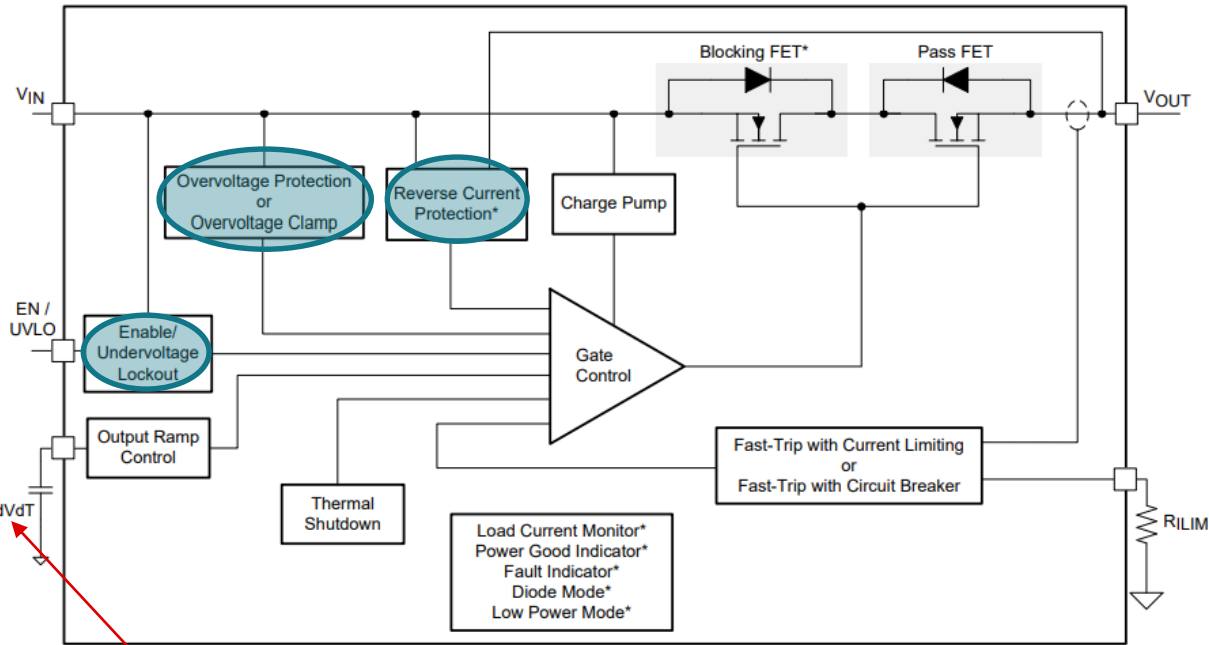


Visit [TI.com/PowerMUX](https://www.ti.com/PowerMUX)

to explore our
Power MUX portfolio

eFuse Overview

*Not Present on all eFuses



*Not present on all eFuses

eFuse Block Diagram

Same as CT Pin (Inrush Current Control)

Undervoltage Lockout

Overvoltage Protection

Reverse Current Blocking and Reverse Polarity Protection

Current Monitoring*

UL and IEC qualified* (reduces customer test time)

Higher Voltage Ranges

eFuse Applications



USB-C Ports



Servers

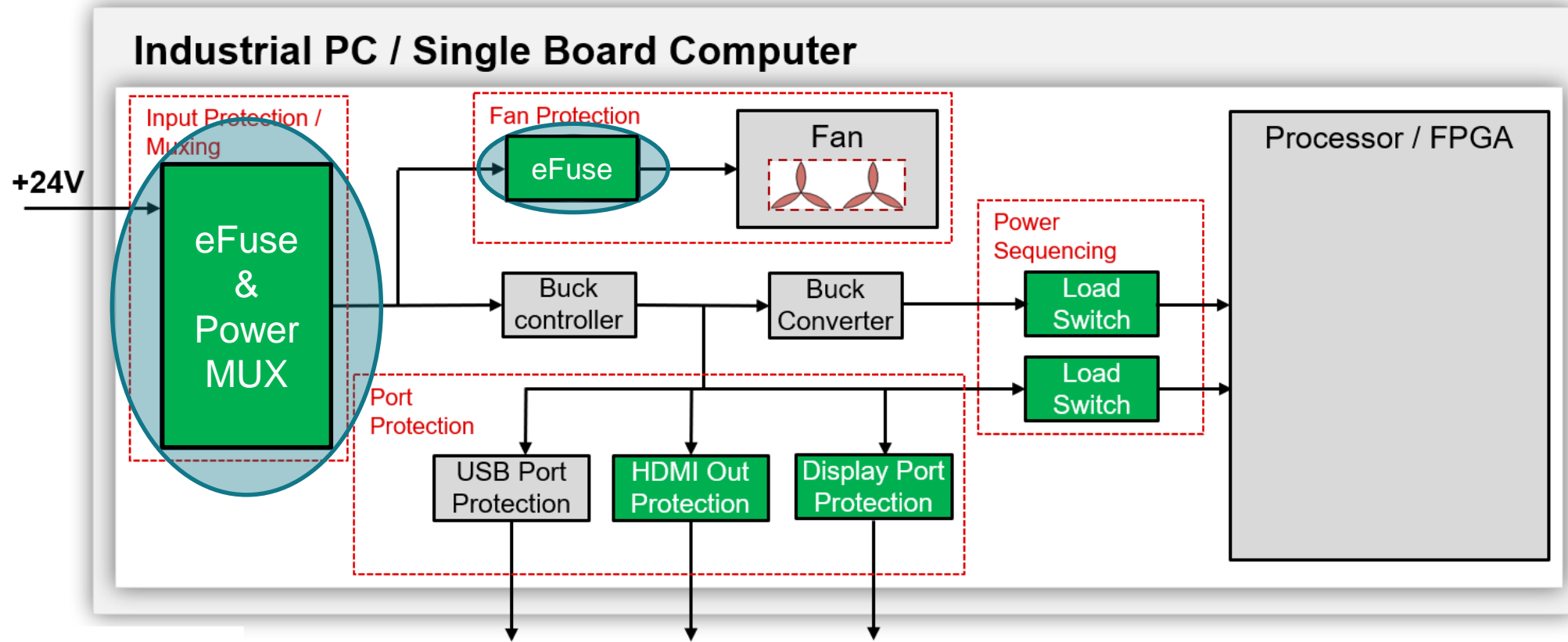


SSD



**PC
Notebooks**

Industrial PC EERD

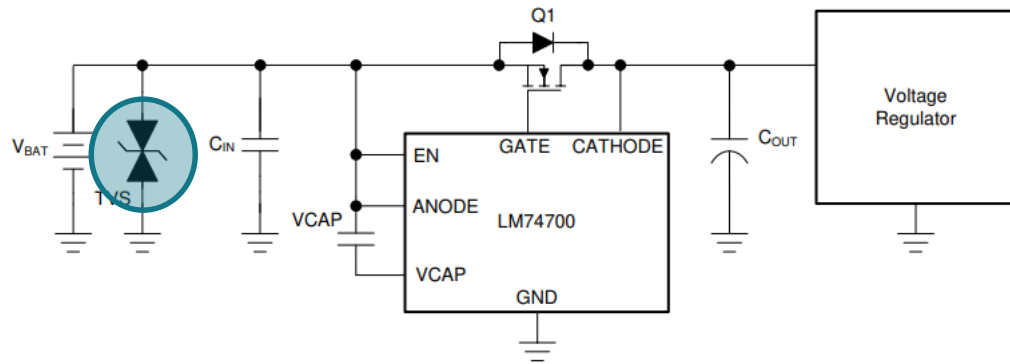


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to explore our
eFuses portfolio

Ideal Diode Overview

*Not Present on all Ideal Diodes



Ideal Diode Block Diagram

High Voltage Ranges

Lower Power, Smaller Size, and Lower Temps. compared to diodes

Reverse Current Blocking

Reverse Polarity Protection

AEC Qualified*

Ideal Diode Applications



**Infotainment
System**

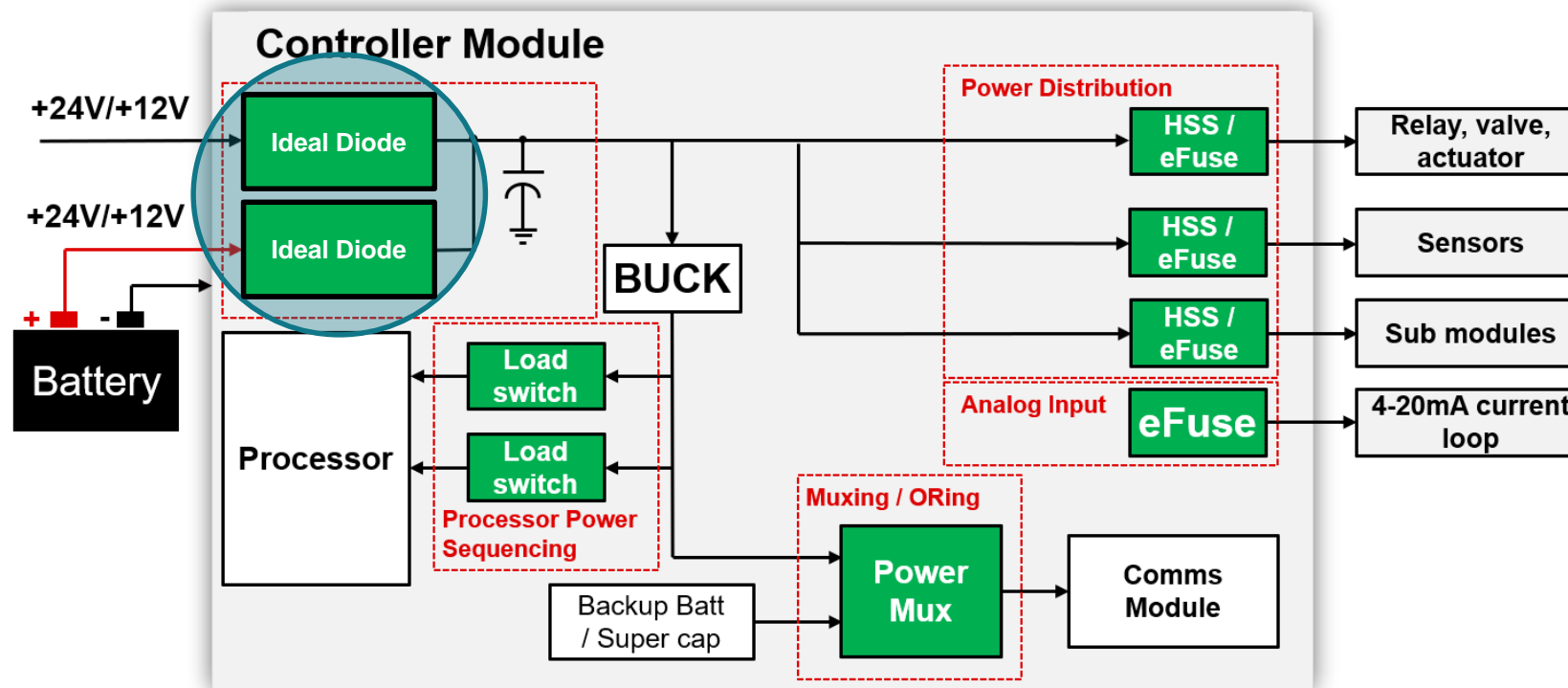


Lighting



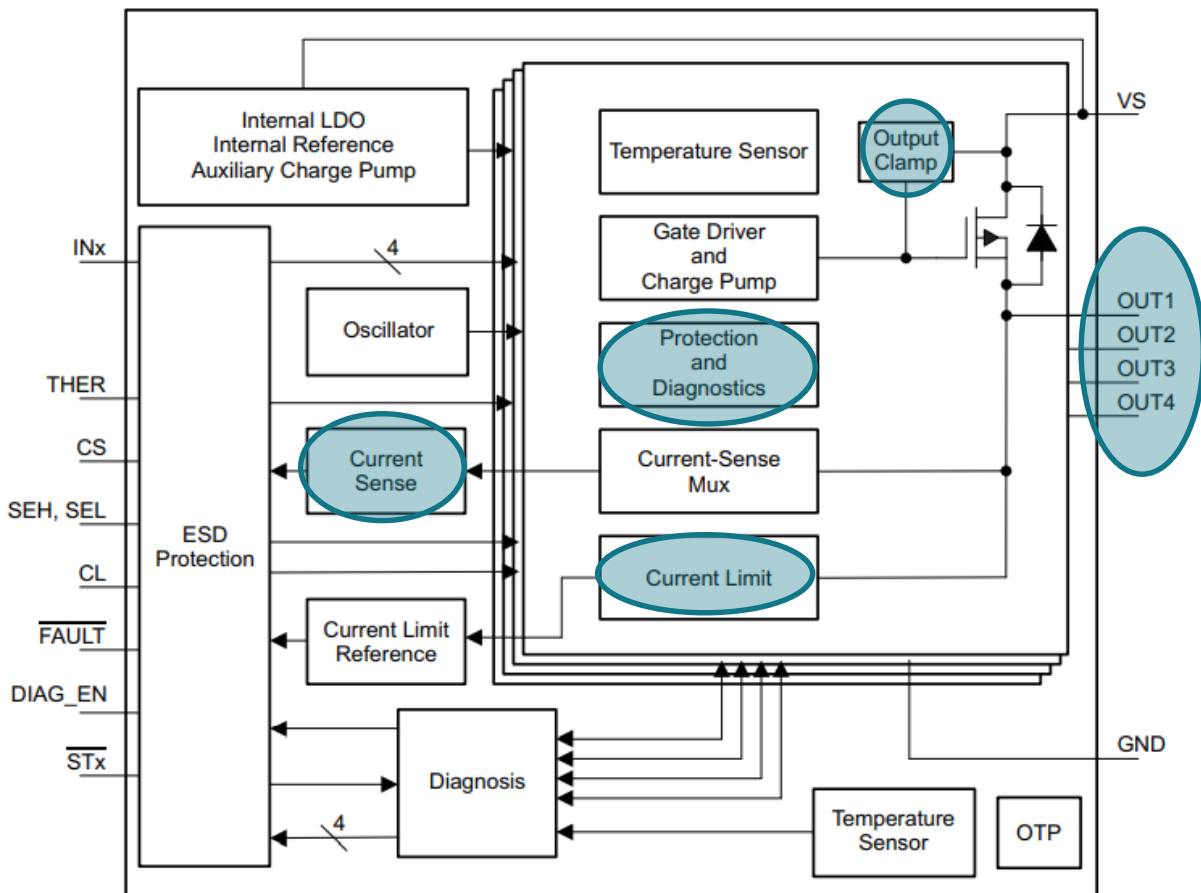
**Construction
Equipment**

Construction Equipment EERD



Visit TI.com/IdealDiode
to explore our
Ideal Diodes portfolio

High Side Switch Overview



High Side Switch Block Diagram

Multiple Channels

Current Sensing

Integrated VDS clamp for inductive loads

Current Limiting

Short-Circuit Protection

AEC/IEC qualified and Functional Safety Capable (reduces customer test time)

High Side Switches Applications



**HVAC
Modules**

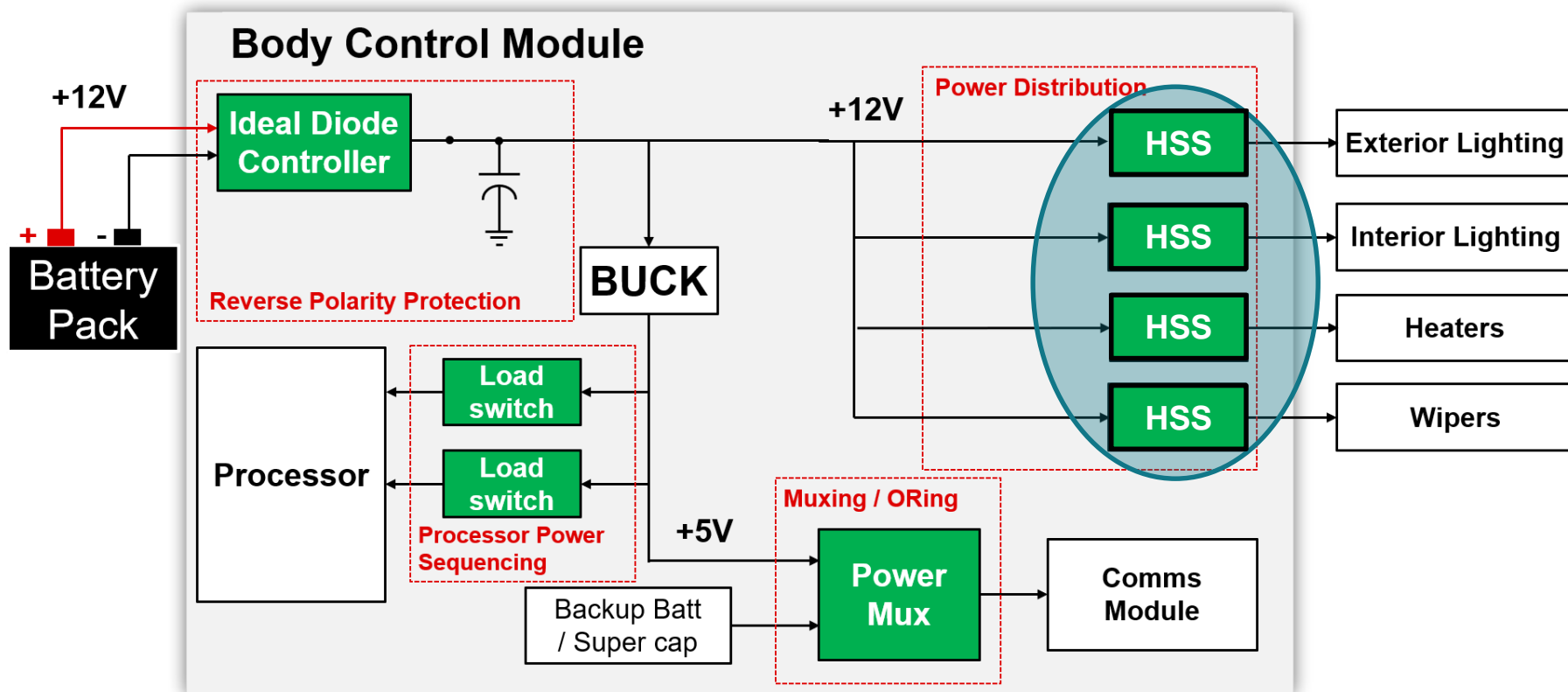


Robotics



**Body
Control
Modules**

Body Control Module EERD



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high side switch portfolio

eBook



Visit [TI.com/lit/SLYY168](https://www.ti.com/lit/SLYY168)

to read more about Power Switches