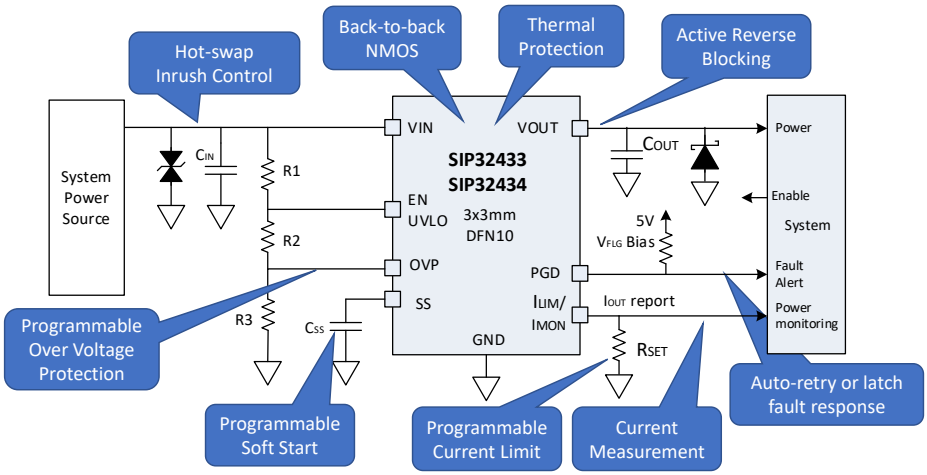
New 3.5 A SiP32433A/B and 6 A SiP32434A/B eFuses With Programmable Current Limits and OVP Enhance Design Reliability, Combine Wide 2.8 V to 23 V Operating Voltage Range With Active Reverse Blocking

Product Benefits:

- Operate over a wide 2.8 V to 23 V input voltage range, with a 28 V_{IN} DC tolerance
- On-resistance down to 33 mΩ
- Programmable current limits:
  - SiP32433A/B: 0.3 A to 3.5 A
  - SiP32434A/B: 0.5 A to 6 A
- Guaranteed current limit accuracy down to ± 8 %
- Precise overcurrent protection (OCP) triggering without overhead current
- Active reverse blocking (SiP32433A and SiP32433B)
- Programmable overvoltage protection (OVP)
- Hot-swappable
- Programmable turn-on slew rate
- ESD tolerance of 2 kV (human body model) and 0.75 kV (charged device model)
- Compact 3 mm by 3 mm TDFN package
- Operate over a temperature range of -40 °C to +125 °C



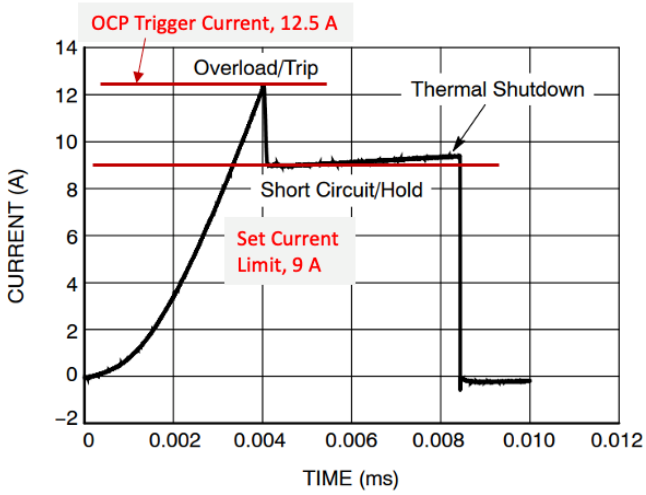
Market Applications:

- Protect power sources and downstream circuitry from overloads, short circuits, voltage surges, and excessive inrush currents
- USB Type C PD switches
- Industrial and medical equipment, servers and data storage, robotics, consumer goods, home automation systems, and gaming consoles

The News:

Vishay Intertechnology introduces four new eFuses that feature programmable current limits and OVP in the compact 3 mm by 3 mm TDFN package. Designed to operate over a wide 2.8 V to 23 V input voltage range — with a 28 V_{IN} DC tolerance — the 3.5 A SiP32433A/B and 6 A SiP32434A/B integrate multiple control and protection features to simplify designs and minimize the need for external components.

- While most competing solutions only offer voltages to 18 V, or are missing their low voltage side, the input voltage range of the SiP32433A/B and SiP32434A/B allows them to be used in a wider range of designs
- The single-channel load switches provide precise control and swift fault responses to enhance the safety and reliability of system designs, while increasing design flexibility and simplifying BOMs
- Upon switch-off due to latchable faults, the SiP32433A and SiP32434A are designed to latch the power switch off, while the SiP32433B and SiP32434B will auto-retry after a settable period of time
- All four devices respond swiftly to short circuits, and their precise overcurrent protection (OCP) is triggered at a set current limit level without an excessive overhead current requirement — an important characteristic for designs in which power busses need to support multiple loads
  - Competing solutions often require overhead currents of more than 30 %
- With active reverse blocking, the SiP32433A and SiP32433B target applications featuring USB Type-C and multiple power source switching
- The load switches reduce on-resistance by 43 % compared to previous-generation solutions, which translates into a 32 % higher current capability or increased efficiency at the same current level



The Key Specifications:

Part number	SIP32433A	SIP32433B	SIP32434A	SIP32434B
Continuous switch current (A)	3.5	3.5	6	6
Current limit setting range (A)	0.3 to 3.5	0.3 to 3.5	0.5 to 6	0.5 to 6
$R_{DS(ON)}$ typ. (mΩ)	78	78	33	33
Input voltage (V)	2.8 to 23	2.8 to 23	2.8 to 23	2.8 to 23f
Programmable I_{OUT} limit (A)	0.15 to 3.5	0.15 to 3.5	0.3 to 6	0.3 to 6
OCP response	Latch	Auto-retry	Latch	Auto-retry
Active reverse blocking	Yes	Yes	No	No
Report	PG	PG	PG	PG

Availability:
Samples and production quantities of the eFuses are available now, with lead times of 20 weeks.

To access the product datasheets on the Vishay Website, go to
http://www.vishay.com/ppg?63175 (SiP32433)
http://www.vishay.com/ppg?63147 (SiP32434)

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