

## **Advanced Hot-Swap E-Fuse Provides Robust Load Protection**

[HMI](#)'s HL8520E is a hot-swap/e-fuse device designed to offer superior protection and power control for sensitive load circuitry. It is designed to protect systems from input transients, shorts, and voltage spikes that could damage load circuitry, while managing power delivery to enhance reliability. With an input voltage range of 2.7 V to 16 V, it supports both low- and high-voltage systems, making it suitable for diverse applications. The device can also handle up to 20 A of output current, ensuring reliable performance under heavy loads, ideal for power-intensive applications.

Featuring an integrated low  $R_{DS(ON)}$  MOSFET with just 2.8-m $\Omega$  resistance, the HL8520E minimizes conduction losses, improving power efficiency, and thermal performance. It includes a comprehensive set of protection features, such as overcurrent protection (OCP), short-circuit protection (SCP), thermal shutdown (TSD), damaged MOSFET detection, overvoltage protection (OVP), and undervoltage lockout (UVLO), safeguarding both the device and the load from electrical faults.

For smoother system operation, the HL8520E allows for an external adjustable soft start, enabling controlled inrush current during startup. Additionally, the device provides configurable current limits, offering further flexibility in power management and helping to ensure safe and reliable operation. The fast response time of less than 200 ns for short-circuit protection ensures that the device quickly detects and mitigates fault conditions, minimizing system disruption.

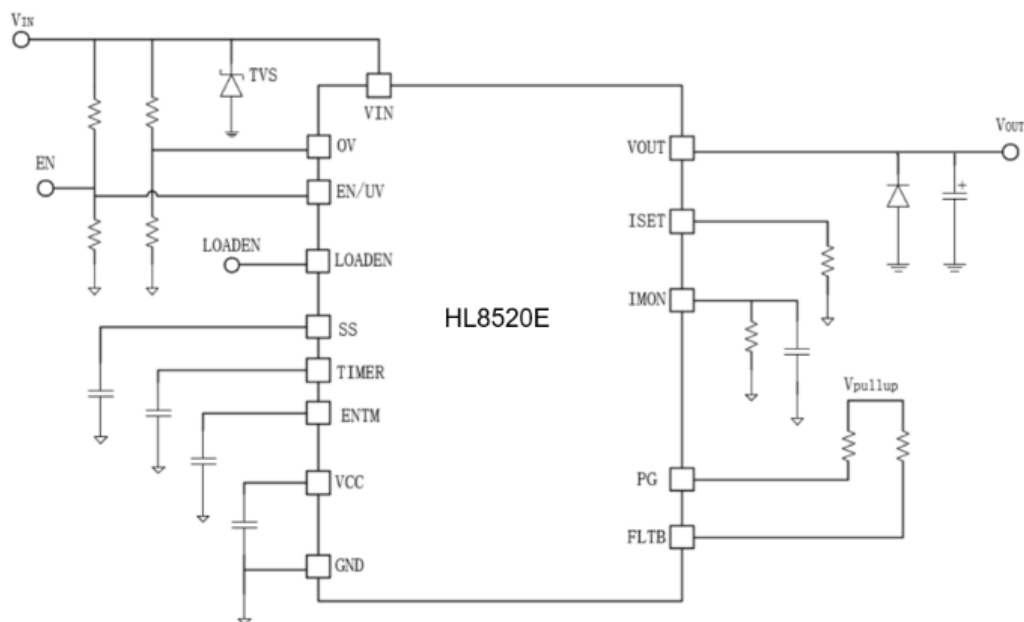
The HL8520E includes e-fuse health reporting, which provides valuable diagnostic feedback for system monitoring and maintenance. The device comes in a compact LGA-26 package (4 mm x 4 mm), making it suitable for space-constrained applications where efficient use of board space is critical (see the figure).

"The HL8520E is ideal for a wide range of applications, including servers, hot-swap systems, laptops, and disk drives," stated Mason Choi, VP/GM of HMI. "Its versatile design and robust protection features make it well-suited for environments where reliable power management and load protection are critical."

For more information, see the HL8520E [page](#).



(a)



(b)

Figure. The HL8520EGA01 is a hot-swap/e-fuse device designed to protect its load circuitry from input transients. It also prevents the input from unwanted shorts and transients coming from the output. A photo of the IC (a) and a typical application diagram (b) are shown here.