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[SP3415 TVS Diode Arrays](#)
[SP1043, SP1044 TVS Diode Arrays](#)

Littelfuse Introduces Industry First Unidirectional ESD Protection in a 01005 Flip Chip Package

New TVS diode arrays offer options for both high data-rate interfaces and general purpose applications

CHICAGO, February 13, 2017 — Littelfuse, Inc., the global leader in circuit protection, today introduced an industry first: a new series of three unidirectional TVS diode arrays in space-saving 01005 flip chip packages (0.230mm x 0.430mm). Unidirectional protection is typically preferable to bidirectional protection, particularly on logic and data lines, which typically do not transit zero volts during standard operation.

The new SP3415 Series TVS Diode Arrays (SPA[®] Diodes), based on fast-acting, semiconductor-based technology, can withstand multiple electrostatic discharge (ESD) events without wear-out or degradation. Its low nominal capacitance (0.35pF) makes this series ideal for interfaces running at high data rates approaching 5GHz clock speeds.

The general purpose SP1043 (8pF) and SP1044 (30pF) Series TVS Diode Arrays employ proprietary silicon avalanche technology to protect the I/O ports of electronic equipment subject to destructive ESD. These robust diodes can safely absorb repetitive ESD strikes at $\pm 12\text{kV}$ (for SP1043) or $\pm 30\text{kV}$ (for SP1044) without performance degradation.

Typical applications for these TVS diode arrays include smartphones, digital cameras, wearable technology, tablet computers, and other portable devices.

“For designers of today’s increasingly crowded printed circuit boards, the very compact footprint of these new TVS diode arrays offer a way to conserve on both PCB space and costs,” said Tim Micun, global product manager, TVS Diode Arrays (SPA® Diodes) at Littelfuse.

The SP3415, SP1043, and SP1044 Series TVS Diode Arrays offer these key benefits:

- Low capacitance unidirectional ESD protection in the industry’s smallest footprint, to ensure data integrity while saving PCB space.
- Provides ESD immunity beyond the maximum rating in the IEC61000-4- 2 standard, to enable circuit designers more design margin and higher end-product reliability in the field.
- Low dynamic resistance (3.5Ω max for SP3145, 0.45Ω max for SP1043/SP1044) supports the low clamping voltage needed to protect modern electronics filled with small geometry ICs.
- Low standoff voltage (6V max for SP1043/SP1044, 3.3V max for SP3045) enables protection of up to 95 percent of all interfaces.

Availability

SP3415, SP1043, and SP1044 Series TVS Diode Arrays are available in tape and reel packaging in quantities of 15,000. Sample requests may be placed through authorized Littelfuse distributors worldwide. For a listing of Littelfuse distributors, please visit Littelfuse.com.

For More Information

Additional information is available on the [SP3415](#), [SP1043](#), and [SP1044](#) Series TVS Diode Array product pages. For technical questions, please contact: Tim Micun, global product manager, TVS Diode Arrays (SPA® Diodes), at tmicun@littelfuse.com.

About Littelfuse

Founded in 1927, Littelfuse is the world leader in circuit protection with growing global platforms in power control and sensing. The company serves customers in the electronics, automotive and industrial markets with technologies including fuses, semiconductors, polymers, ceramics, relays and sensors. Littelfuse has over 10,000 employees in more than 40 locations throughout the Americas, Europe and Asia. For more information, please visit Littelfuse.com.

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