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Four New Series of TVS Diode Arrays from Littelfuse Combine High ESD Protection with Smaller Board Footprints

Ideal for mobile phones, smartphones, wearable devices, tablets, digital cameras, and portable devices





SP1013/SP1014 TVS Diode Array Product Image
SP1020/SP1021 TVS Diode Array Product Image

CHICAGO, May 26, 2015 - Littelfuse, Inc., the global leader in circuit protection, has introduced four solutions for general purpose ESD protection TVS Diode Arrays (SPA® Diode) that occupy less board space than similar industry offerings. The SP1013 and SP1014 TVS Diode Arrays fit into a standard 0201 footprint but offer a 30 percent reduction in the board space required over other 0201 outline solutions, allowing more clearance between components. The SP1020 and SP1021 Series are packaged in the industry's smallest ESD protection footprint, a 01005 flip chip, while providing nearly 78 percent lower capacitance than similar market solutions.

All four products feature back-to-back zener diodes to protect electronic equipment that may experience destructive electrostatic discharges (ESD). The back-to-back configuration provides symmetrical ESD protection for data or signal lines when AC signals are present. These robust diodes can safely absorb repetitive ESD strikes above the maximum level specified in the IEC61000-4-2 international standard (Level 4, ±8kV contact discharge) without performance degradation.

Applications for all four parts include mobile phones, smartphones, digital cameras, wearable technology, tablets, and portable devices.

"These TVS Diode Arrays were developed in response to customers in the wireless and wearable device markets who wanted high ESD protection performance in the smallest practical footprints," said Tim Micun, product manager for the TVS Diode Arrays line. "They provide very high levels of immunity to ESD attack and surge attack, which helps extend the useful lives of the end-products into which they're built."

The new TVS Diode Arrays offer these key benefits:

- With a package outline smaller than a 0201 footprint (just 0.52mm x 0.27mm), the SP1013 and SP1014 Series enable a 0.25mm product pitch and occupy less board space than other 0201 solutions.
- The SP1020 and SP1021 Series' 01005 flip chip package (0.181mm x 0.230mm x 0.440mm) occupies the industry's smallest footprint, which helps to save printed circuit board space and reduces cost.
- The TVS Diode Arrays provide high ESD immunity and superior protection, giving circuit designers more design margin and higher end-product reliability in the field.
    - ESD, IEC 61000-4-2, ±30kV contact, ±30kV air discharge (SP1013); ±12kV contact, ±15kV air (SP1014); ±30kV contact, ±30kV air discharge (SP1020) and ±12kV contact, ±15kV air (SP1021)
    - EFT, IEC 61000-4-4, 40A
    - Lightning, IEC 61000-4-5, 8A (SP1013), 2A (SP1014),5A (SP1020) and 2A (SP1021)
- " The SP1020 and SP1021 Series' very low dynamic resistance (0.32Ω) supports low clamping voltage needed for protecting modern electronics filled with small-geometry ICs.
- Low capacitance of 30pF (SP1013) and 6pF (SP1014) helps to preserve signal integrity and minimize data loss while

offering more robust devices against electrical threats.
- Back-to-back 5V standoff (SP1013 and SP1014) or 6V standoff (SP1020 and SP1021) permits protection of most of the current and future user interfaces.

Availability
The SP1013 and SP1014 are packaged in 0201Lite footprint flip chip packages; the SP1020 and SP1021 are packaged in 01005 footprint flip chip packages. All four are provided in tape & reel form in quantities of 15,000. Sample requests can be placed through authorized Littelfuse distributors worldwide. For a listing of Littelfuse distributors, please visit Littelfuse.com.

For More Information
Additional information (including datasheets) is available on the following product pages: SP1013, SP1014, SP1020 and SP1021. If you have technical questions, please contact: Tim Micun, Product Manager, TVS Diode Arrays, 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 global customers in the electronics, automotive and industrial markets with technologies including fuses, semiconductors, polymers, ceramics, relays and sensors. Littelfuse has over 8,000 employees in more than 35 locations throughout the Americas, Europe and Asia. For more information, please visit the Littelfuse website: littelfuse.com.

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