

## STMicroelectronics Sets the Standard for Protecting High-Speed Multimedia Interfaces



STMicroelectronics has raised the performance of ESD protection for equipment such as DisplayPort monitors and PCs by introducing a Transient Voltage Suppressor (TVS) allowing increased high-definition (HD) picture quality, thanks to its best-in-class low capacitance. By 2013, approximately 100 million portable PCs will ship with a DisplayPort output for connection to an external high-definition screen.

The high signal speeds of DisplayPort, as well as similar external connections such as HDMI, USB3.0 and eSATA, call for improved protection devices that prevent electrostatic pulses from damaging the system's circuits, as users add or remove cables. These are connected to each pin of the external connector to absorb or divert the ESD pulse energy, but must add the lowest possible capacitance on the signal line to avoid degrading picture quality.

ST, with its latest ESDAXLC6-1MY2 Transient Voltage Suppressor (TVS), has set a new benchmark ultra-low capacitance for this type of device, thereby preserving picture quality while maintaining ESD protection meeting applicable industry standards. This eXtremely Low Capacitance (XLC) device places a loading of 0.35pF maximum on the signal line. This low capacitance provides a signal bandwidth of 6-7GHz, which allows the 2.7Gbit/s data streams of a DisplayPort interface to pass through without distortion. ST's new TVS will also protect HDMI, USB3.0 and eSATA interfaces, which have similar per-channel data rates.

By using the same footprint and pin arrangement as older devices of higher capacitance, ST's new TVS provides a direct upgrade or second-source for any existing product, and will be a popular choice for new designs. It occupies just 0.6mm<sup>2</sup> of printed-circuit-board space, and only a single device is required per signal line. The protection provided meets IEC 61000-4-2, allowing equipment to withstand an ESD event up to  $\pm 8$ kV in direct contact with the signal conductor.

Features of the ESDAXLC6-1MY2:

Single-channel device protecting one high-speed line 0.35pF maximum capacitance between signal line and ground Greater than 6GHz signal bandwidth Certified to IEC

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61000-4-2 level 4 Industry-standard SOD882 miniature footprint (1mm x 0.6mm).

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