

Big Data/Video Surveillance Network Storage Edge Storage Requires Robust Protection

Situation

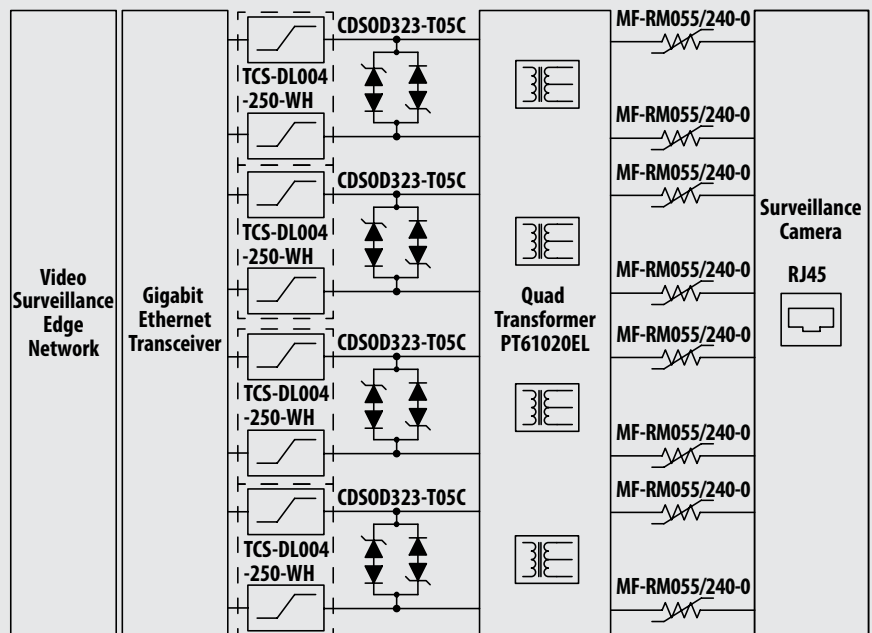
- Data centers support high capacity (terabyte) central and distributed network storage at the edge of a big data/video surveillance network.
- To maintain essential reliability, the edge of these networks must be protected from lightning exposure with high-bandwidth circuit protection able to divert transient energy from sensitive electronic interfaces.
- This application brief presents solutions from Bourns that will protect 2-wire differential signal lines from electrical transients without adversely impacting the integrity of the signal.

Solution

- Bourns offers a combination of circuit protection solutions providing very fast signal protection while meeting high-speed network specifications.
- Bourns® Transient Current Suppressor (TCS™) High-Speed Protectors (HSPs) provide extremely quick current limiting of transient events with a typical response time of 50 nanoseconds.
- Once the transient event is complete, the TCS™ HSP will then reset to allow communications to proceed as normal.
- The TCS™ HSP device's small package (2x1.5 mm) allows usage in high-density port architectures.

This solution consists of:

- Bourns® Transient Current Suppressor (TCS™ HSP): TCS-DL004-250-WH
- Bourns® TVS Diode Array: CDSOD323-T05C
- Bourns® LAN 10/100/1000 Base-T Transformer: PT61020EL
- Bourns® Polymer PTC Resettable Fuse: MF-RM055



The schematic above illustrates the application protection and does not constitute the complete circuit design. Customers should verify actual device performance in their specific applications.

Benefits

- Robust transient solution for high-speed circuits
- Offers isolation (1500 VAC) and power cross (240 V_{rms}) protection, enabling sensitive electronics to continue to function reliably
- Fast transient typical response time of 50 ns
- Supports unlimited transient events within protection specifications
- Utilizes sensitive interface ports requiring minimal exposure to transient energy
- Effective protection to help increase system reliability

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