

# Ethernet

## Power over Ethernet (PoE) Powered Device (PD) Surge Protection

Bourns® PortNote® solutions provide protection recommendations for typical port threats.

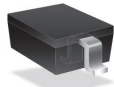
### Solution Products



SM51589PEL



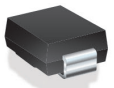
TCS-DL004-250-WH



CDSOD323-T05LC



GMOV-14D500K



5.0SMDJ64A



CD-MBL108S



MH3261-601Y

Request Sample

To order samples, click on the "Request Sample" button online.

### Objective

Power over Ethernet (PoE) interfaces combine  $V_{pp}$  differential signals and nominal 48 V<sub>DC</sub> power. This solution provides protection for both the data and power signals and is compatible with 10/100/1000 Base-T.

### Compliance

ITU-T K.20, K.21, K.45 for Basic levels  
Telcordia GR-1089-CORE Issue 7 Port Type 4

### Solution

- 1 Quad Transformer: SM51589PEL
- 4 TCS™ High-Speed Protectors: TCS-DL004-250-WH
- 4 TVS Diodes: CDSOD323-T05LC
- 2 GMOV™ Hybrid Protection Components: GMOV-14D500K
- 1 TVS Diode: 5.0SMDJ64A
- 1 Bridge Rectifier Diode: CD-MBL108S
- 1 Chip Ferrite Bead: MH3261-601Y

### Alternate Recommendations

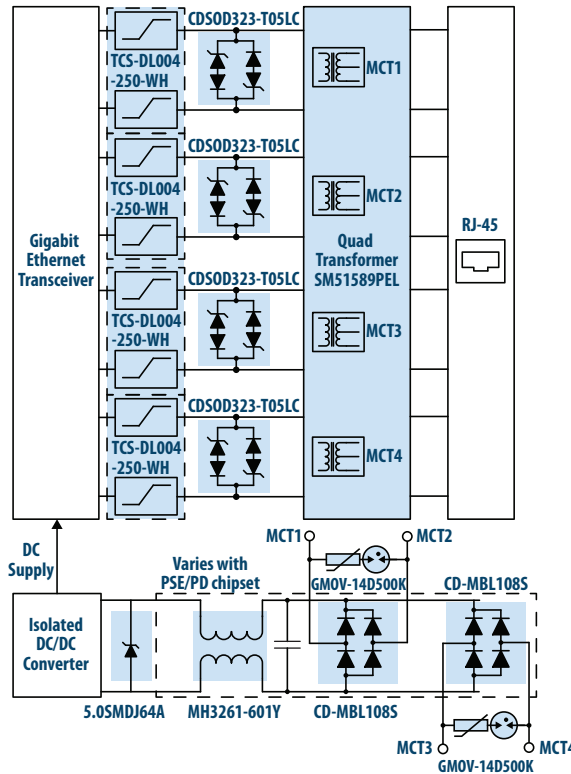
Other PortNote® Solutions:

- Ethernet - ESD Protection
- Ethernet - 10/100 Base-T Power over Ethernet (PoE) PD Unit Protection
- Ethernet - 10/100 Base-T Power over Ethernet (PoE) PSE Unit Protection

Variations of this circuit are available depending on specific design constraints; contact your local Bourns technical representative for more information.

### Benefits

The Bourns® TCS™ High-Speed Protector and TVS Diode combination provide robust surge protection without impairing the Ethernet signal. In addition, the transformer offers robust insulation for common mode surge protection.



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

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