ANX-POE-Protection

Silver
T E L E C O M

This application note shows how to protect Silver Telecom Power over Ethernet (POE) modules from over-voltages exceeding the 80V maximum rated surge input voltage.

An inexpensive but effective solution can be achieved by connect Tranzorb diodes across each of the POE module inputs.

SMAJ58CA bidirectional Tranzorb diodes will provide protection from surges up to 400W for 1ms. If higher surge current capability is thought necessary 600W SMBJ58CA or 1500W SMCJ58CA devices would be suitable.

Figure 1 shows how to protect POE modules which have dual inputs with internal polarity protection: Ag8000, A9000, Ag9400-2BR and Ag9600-2BR.
* Note: the Ag9500 has an SMAJ58CA on-board after the internal polarity protection circuit.
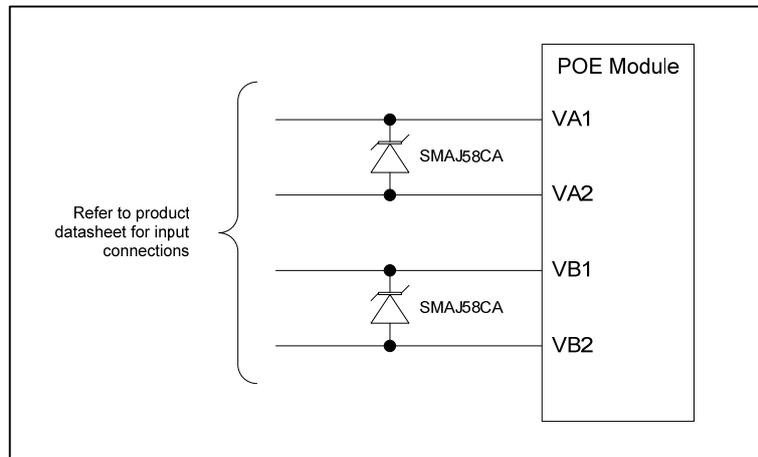
Figure 1: Dual input POE modules with polarity protection

Figure 2 shows how to protect POE modules which have a single input without internal polarity protection: Ag8100, A8200, Ag9200, Ag9400, Ag9600 and Ag5100.

* Note: Unidirectional Tranzorb diodes are also suitable in this configuration (SMAJ58A)
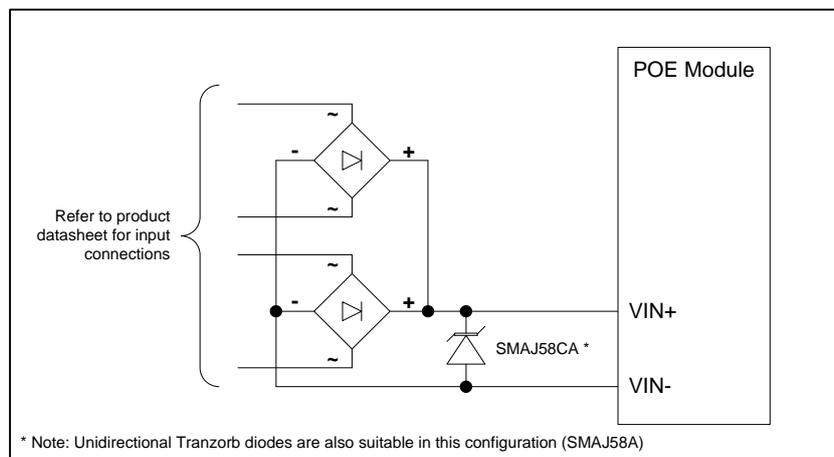
Figure 2: Single input POE modules without polarity protection

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Figure 3 shows how to protect POE modules which have dual inputs without internal polarity protection: Ag5000.
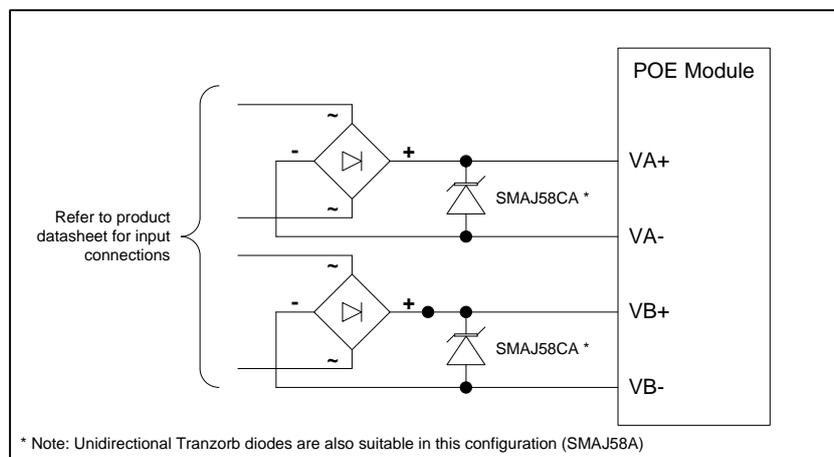
Figure 3: Dual input POE modules without polarity protection

Figure 4 shows how to protect POE modules which have a one POE input and a one auxiliary input, both without internal polarity protection: Ag9300.
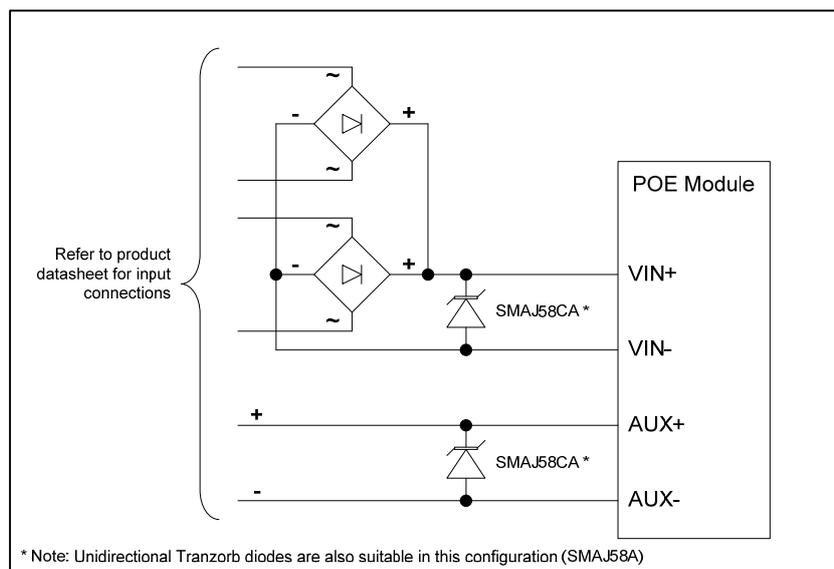
Figure 4: POE modules with auxiliary input without polarity protection