

The development of hybrid surge protection circuit with effect of adding a filter

ABSTRACT

Surge protective device is a part of internal lightning protection and it crucially to divert the certain amount of surges to the ground before the protected load able to handle. Therefore, this paper studying the enhancement of SPD through the effect of adding a filter in hybrid surge protection circuit using simulation modeling. Ordinarily, filter is used as in eliminating noises in certain application such as electronic apparatus. Furthermore, an experiment testing is pursues in high voltage laboratory for comparison and to validate the simulation. The analysis involved the surge protector Class 3 according to IEC or Category A as referring to IEEE standards with a filter design involving the combination of inductor and capacitor. From this research is found that a significant improvement of about 38% obtain when filter is added in surge protective device.

Keyword: Surge protector; Transient voltage suppressor diode; Metal oxide varistor; Hybrid protection; Surges; EMI filter