INTRODUCTION

Gas Discharge Tube (GDT) is a surge absorber which is controlled by voltage. It is connected parallel between the line and the neutral and/or the ground of the power system in equipments, or between the signal line and the ground in the signal transmission system.

GDT is made up of a spark gap enveloped in a sealed ceramic or glass tube that is filled with inert gas. Under the normal condition, the operation voltage does not reach the spark-over voltage and GDT keep its high resistance status. However, when the over-voltage reaches GDT's spark-over voltage, high energy brought by over-voltage will cause the fill-in gas start to discharge and the internal insulation gap start to breakdown. At this moment, GDT becomes short circuit very fast, which will lead the surge current into the ground and protect the equipment safely. As soon as the over-voltage disappears, the GDT returns to high insulation status and waiting for the next action.

GDT has the very low capacitance, typically between 1PF and 5PF, which is good for high frequency transmission applications. Other advantage of GDT is its ability to handle large surge currents (up to 20KA or higher), this highly increases the protect level of GDT applied equipment.