INTRODUCTION

Demonstrating the design advantages of the next-generation Bourns® GDT35 Series, this Design Note provides histogram comparisons that illustrate various impulse voltage differences between multiple models of the Modl GDT35 Series and the legacy Bourns® 3-element Model 2036 Gas Discharge Tube (GDT) family.

The data presented was gathered using impulse testing at 1 kV/μs on 60 different units across four different voltage ratings to represent the full range of each GDT model family from 70 V through 600 V. The histogram will show that at each voltage level, the Model GDT35 Series features lower impulse voltages compared to the Bourns® Model 2036 GDT Series devices.

Comparing both model series 70 V components, the impulse sparkover voltage of the Model GDT35 is on average 20 V lower than the Bourns® legacy Model 2036 Series counterpart. Ninety-nine percent (99 %) of both GDT Series’ population tested showed values below 650 V.

A comparison of each model series’ 90 V components shows that the impulse sparkover voltage of the Model GDT35 is on average 70 V lower than the Model 2036 Series counterpart. Ninety-nine percent (99 %) of the Model GDT35 parts tested had values below 575 V compared to the Model 2036 Series at 650 V.
Evaluating both model series’ 230 V components provided data that the impulse sparkover voltage of the Model GDT35 is on average 70 V lower than the legacy Model 2036 Series. Bourns’ tests revealed that ninety-nine percent (99%) of the Model GDT35 Series components tested had values below 615 V while the Model 2036 Series had values at 650 V.

The comparison of both series’ 600 V components illustrates that the impulse sparkover voltage of the Model GDT35-60 is on average 30 V lower than its legacy Model 2036 Series counterpart. The data showed that ninety-nine percent (99%) of the components tested had values below 1200 V while the Model 2036 Series model had a value of 1300 V.

As demonstrated above by the four representative voltage ratings (70 V, 90 V, 230 V, 600 V), each voltage rating in the next-generation Bourns® Model GDT35 Series delivers a lower impulse voltage compared to the traditional Bourns® Model 2036 Series.

Lower impulse voltage leads to less voltage let-through to the equipment, which results in improved protection for the application and helps to increase its reliability and maximize uptime.

Bourns next-generation GDTs offer designers a superior let-through protection solution that helps safeguard both sensitive equipment and its users.