

DESIGN NOTE

Histogram Comparison Between Next-Generation Bourns® Model GDT25 Series and Legacy Bourns® Model 2035 Series Gas Discharge Tubes (GDTs)

INTRODUCTION

Demonstrating the design advantages of the next-generation [Bourns® Model GDT25 Series](#), this Design Note provides histogram comparisons illustrating how the next-generation Bourns® GDT design achieves lower impulse voltages compared to the popular [Bourns® Model 2035 Series](#) GDT. By providing lower impulse voltage, the Model GDT25 contributes less voltage let-through to the load. This capability allows designers to have greater peace of mind that both the equipment and equipment users will be better protected from overvoltage threats.

The data presented in this design note was gathered using impulse testing at 1 kV/μs on 60 units across three voltage ratings from 90 V to 600 V to represent the full range of each GDT model family.

Note: a 70 V rating histogram comparison is not shown because, unlike the next-generation Model GDT25 Series, the Model 2035 Series does not include a 70 V rated model.

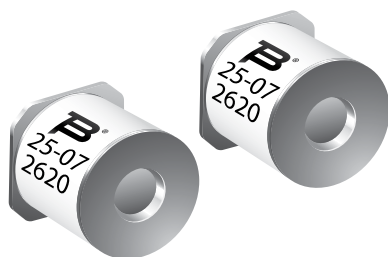


Figure 1 | Next-Generation Bourns® Model GDT25 Series

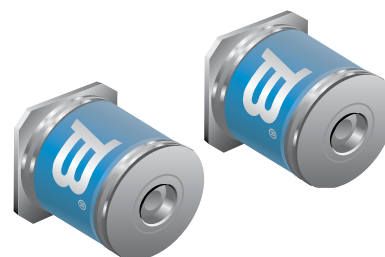
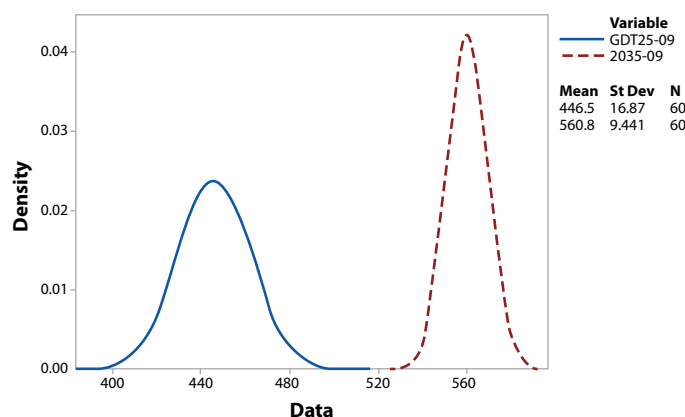


Figure 2 | Bourns® Model 2035 Gas Discharge Tube (GDT) Series

A comparison of each model series' 90 V components shows that the impulse sparkover voltage of the next-generation GDT25-09 model is on average 110 V lower than the Model 2035 series counterpart. Ninety-nine percent (99 %) of the next-generation Model GDT25 parts tested had values below 500 V compared to the Model 2035 Series at 600 V.

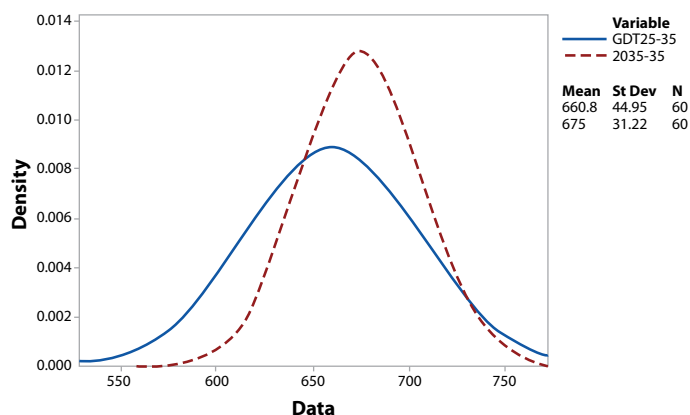
Histogram of Model GDT25-09, 2035-09 Normal



Histogram Comparison Between Next-Generation Bourns® Model GDT25 Series and Legacy Bourns® Model 2035 Series Gas Discharge Tubes (GDTs)

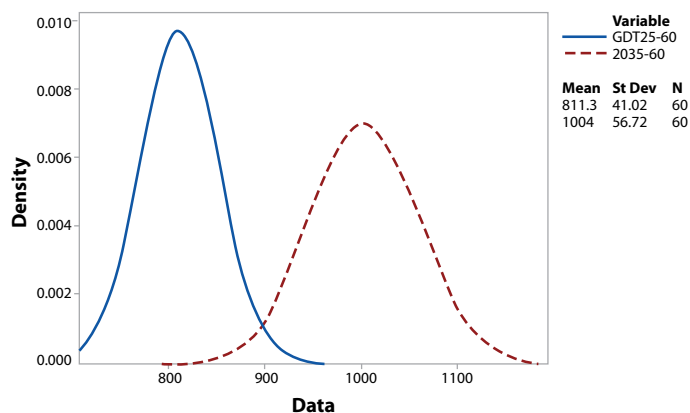
Evaluating both model series' 350 V components shows that the impulse sparkover voltage of the next-generation Model GDT25-35 is on average 15 V lower than the Model 2035 Series counterpart. Ninety-nine percent (99 %) of the next-generation Model GDT25 Series components tested had values below 800 V while the Model 2035 Series had relatively similar values.

Histogram of Model GDT25-35, 2035-35 Normal



Comparing both series' 600 V components, the impulse sparkover voltage of the next-generation Model GDT25-60 is on average 193 V lower than its Model 2035 Series counterpart. Ninety-nine percent (99 %) of the next-generation Model GDT25 Series components tested had values below 950 V compared to the Model 2035 Series at 1200 V.

Histogram of Model GDT25-60, 2035-60 Normal



As demonstrated above by the three representative voltage ratings (90 V, 350 V, 600 V), each voltage rating in the next-generation Bourns® Model GDT25 Series delivers a lower impulse voltage compared to the traditional Bourns® Model 2035 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.

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BOURNS®

Americas: Tel +1-951 781-5500
Email americus@bourns.com

EMEA: Tel +36 88 885 877
Email eurocus@bourns.com

Asia-Pacific: Tel +886-2 256 241 17
Email asiacus@bourns.com