

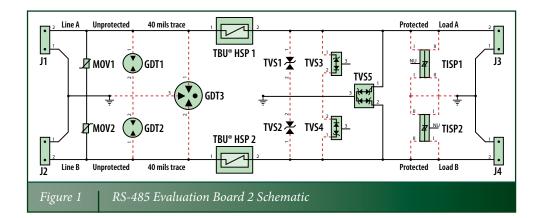
RS-485 Port Protection Evaluation Board 2

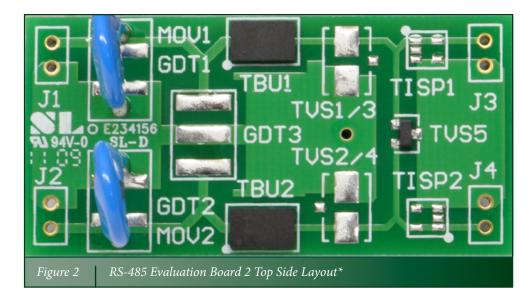
Introduction

This evaluation board serves as an aid in evaluating circuit protection on RS-485 serial device port solutions using Bourns® TBU® High-Speed Protector (HSP), MOV and TVS products to meet the required industry standards on RS-485 port interfaces. The recommended Bourns® TBU® HSP solution offers enhanced performance features over competing technologies, which can help the design engineer to increase the surge & transient protection level on RS-485 ports and place the entire circuit protection solution into a smaller PCB area. Bourns has developed a RS-485 evaluation board (measuring 50 mm x 25 mm x 1.2 mm) manufactured using FR4 PCB with nickel gold plating on top and bottom sides.

How to Connect the Evaluation Board for Test Set-up

- Connect J1 and J2 to the exposed lines.
- Connect J3 and J4 to the RS-485 IC device.



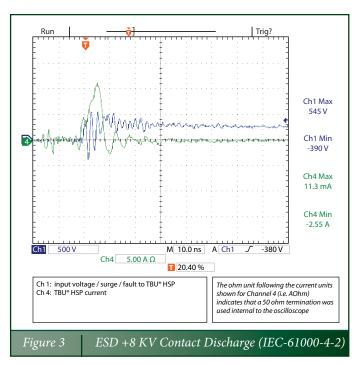


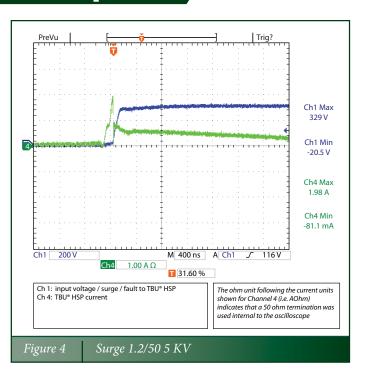
SPs, the default wo MOVs (MOV1, array (TVS5). The board 2) may be replaced by 'I and GDT2) T3, not yet released) may be replaced with 1, TVS2) or b) 2 SOT23 r c) 2 SOT23-5 thyristor	Table 1 RS-485 Eva		aluation Board 2 Bill of Materials		
	No.	Part Number	Qty.	Description	Reference
	1	TBU-CA065-300-WH	2	TBU® Single Bidirectional Line 650 V 300 mA	TBU® HSP 1, TBU® HSP 2
	2	MOV-10D201K	2	Single Line 10 mm MOV 200 V	MOV1, MOV2
	3	CDS0T23-SM712	2	Dual Bidirectional Line 7 V / 12 V	TVS5

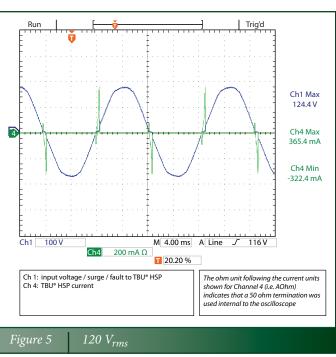
- * In addition to the two TBU* HSPs, the default configuration of this board uses two MOVs (MOV1, MOV2) and a single TVS diode array (TVS5). The board allows different configurations:
 - 2 MOVs (MOV1 and MOV2) may be replaced by a) 2 single 2031 GDTs (GDT1 and GDT2) or b) a dual 2030 GDT (GDT3, not yet released)
 - 1 TVS diode array (TVS3) may be replaced with a) 2 SMB TVS diodes (TVS1, TVS2) or b) 2 SOT23 TVS diodes (TVS3, TVS4) or c) 2 SOT23-5 thyristor devices (TISP1, TISP2)

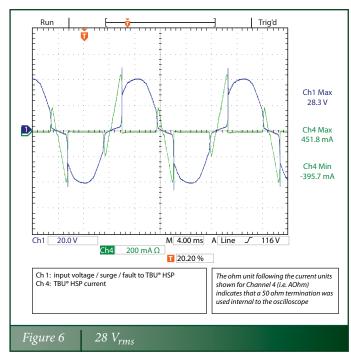
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Performance Graphs









Reference

For more information on implementing advanced circuit protection technologies for RS-485 ports, please review the Bourns RS-485 application note: http://www.bourns.com/data/global/pdfs/bourns_cpk1114_rs485_circuit_protection_appnote.pdf