NEW PRODUCT BRIEF

TBU-CA Series

TBU® HIGH-SPEED PROTECTORS

INTRODUCTION

The TBU-CA Series of Bourns® TBU® products are low capacitance single bidirectional high-speed protection components, constructed using MOSFET semiconductor technology, and designed to protect against faults caused by short circuits, AC power cross, induction and lightning surges.

The TBU® HSP, placed in the system circuit will monitor the current with the MOSFET detection circuit triggering to provide an effective barrier behind which sensitive electronics will not be exposed to large voltages or currents during surge events.

APPLICATIONS

- Voice / VDSL cards
- Protection modules and dongles
- Process control equipment
- Test and measurement equipment
- General electronics

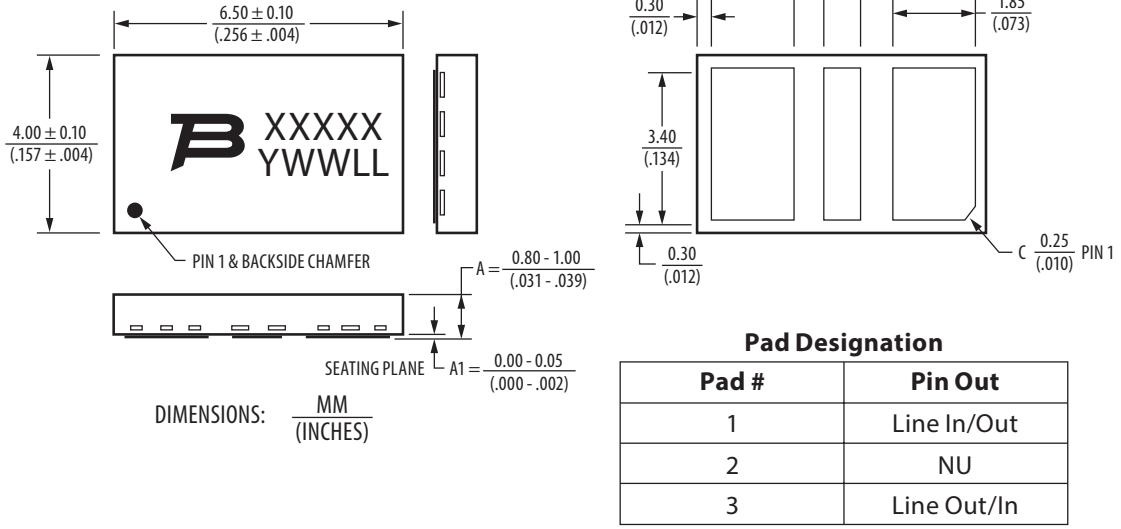
BENEFITS

- Superior circuit protection
- Overcurrent and overvoltage protection
- Blocks surges up to rated limits
- High-speed performance
- Small SMT package

FEATURES

- Peak impulse voltage ranging from 250 V to 850 V
- Continuous A.C. RMS voltage ranging from 100 V to 425 V
- Operating temperature range -55 °C to +125 °C
- Maximum junction temperature capable of up to +125 °C
- ESD protection up to ± 2 kV (Standard: IEC 61000-4-2)

PRODUCT DIMENSIONS



Pad Designation

Pad #	Pin Out
1	Line In/Out
2	NU
3	Line Out/In

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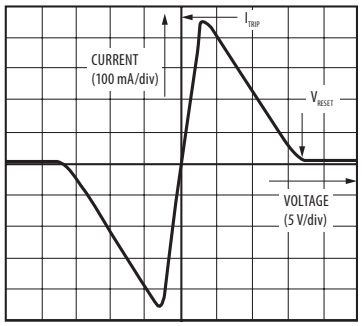
PRODUCT CHARACTERISTICS

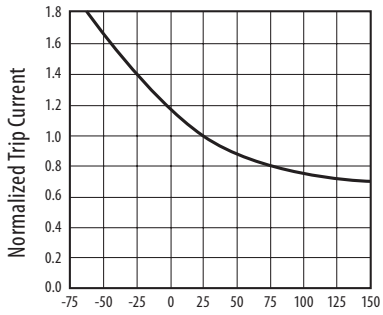
Product Characteristics @ T_A = 25 °C (unless otherwise noted)							
Symbol	**Parameter**		**Part Number**	**Min.**	**Typ.**	**Max.**	**Unit**
$I_{trigger}$	Current required for the device to go from operating state to protected state		TBU-CAxxx-050-WH	50	75	100	mA
			TBU-CAxxx-100-WH	100	150	200	
			TBU-CAxxx-200-WH	200	300	400	
			TBU-CAxxx-300-WH	300	450	600	
			TBU-CAxxx-500-WH	500	750	1000	
R_{device}	Series resistance of the TBU® device	V_{imp} = 250 V, $I_{trigger}$ (min.) = 50 mA	TBU-CA025-050-WH		13.3	15.3	Ω
		V_{imp} = 250 V, $I_{trigger}$ (min.) = 500 mA	TBU-CA025-500-WH		2.6	3.0	
		V_{imp} = 850 V, $I_{trigger}$ (min.) = 50 mA	TBU-CA085-050-WH		21.4	24.5	
		V_{imp} = 850 V, $I_{trigger}$ (min.) = 500 mA	TBU-CA085-500-WH		10.7	12.2	
T_{block}	Time for the device to go from normal operating state to current limiting state					1	µs
I_Q	Current through the triggered TBU® device with 50 V_{dc} circuit voltage			0.25	0.50	1.00	mA
V_{reset}	Voltage below which the triggered TBU® device will transition to normal operating state			12	16	20	V

PRODUCT PERFORMANCE

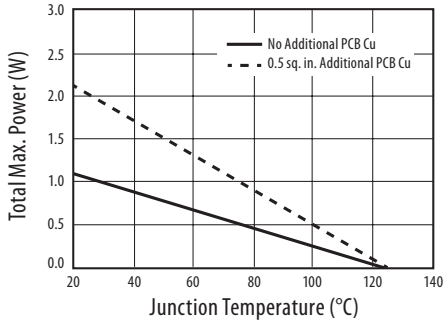
Typical V-I Characteristics (TBU-CA050-300-WH)



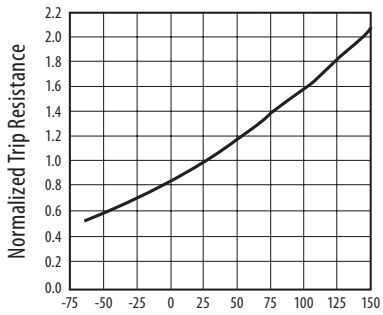
Typical Trigger Current vs. Temperature



Power Derating Curve



Typical Resistance vs. Temperature



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