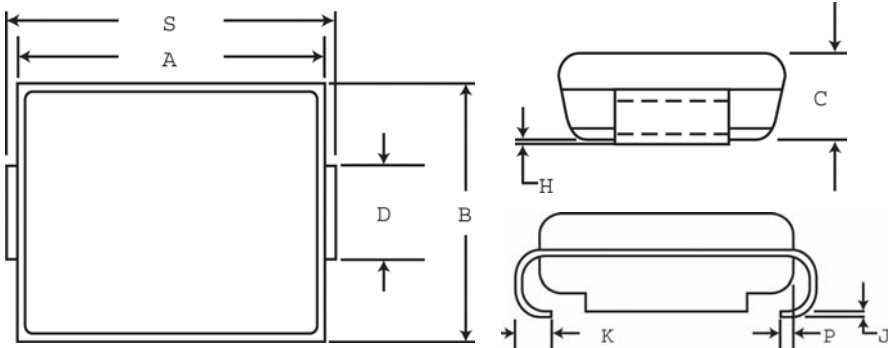
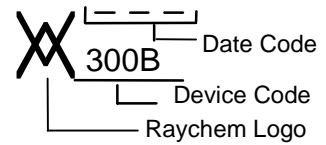


**Specification Status: Released**

**PHYSICAL DESCRIPTION**



**Marking:**



	A		B		C		D**		H		J		K	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX
mm:	4.06	4.57	3.30	3.81	1.90	2.41	1.96	2.11	0.051	0.152	0.15	0.30	0.76	1.27
in*:	(0.160)	(0.180)	(0.130)	(0.150)	(0.075)	(0.095)	(0.077)	(0.083)	(0.002)	(0.006)	(0.006)	(0.012)	(0.030)	(0.050)

	P	S	
	REF	MIN	MAX
mm:	0.51	5.21	5.59
in*:	(0.020)	(0.205)	(0.220)

\*Rounded off approximation  
\*\* D DIMENSION SHALL BE MEASURED WITHIN DIMENSION P

**Other Physical Characteristics**

Form Factor: SMB (Surface Mount, JEDEC DO-214AA Package)  
Lead Material: Matte Tin finish  
Encapsulation Material: Epoxy, meets UL94 V-0 requirements  
Solderability: per MIL-STD-750, Method 2026  
Solder Heat Withstand: per MIL-STD-750, Method 2031  
Solvent Resistance: per MIL-STD-750, Method 1022  
Mechanical Shock: per MIL-STD-750, Method 2016  
Vibration: per MIL-STD-750, Method 2056

Tape and Reel packaging per EIA 481-1

Agency Recognition: UL  
Precedence: This specification takes precedence over documents referenced herein.  
CAUTION: Operation beyond the rated voltage or current may result in rupture, electrical arcing or flame.

**Materials Information**

RoHS Compliant ELV Compliant

Directive 2002/95/EC  
Compliant

Directive 2000/53/EC  
Compliant

# SiBar™ Thyristor Surge Protectors

Raychem Circuit Protection Products

PRODUCT: TVB300SB-L

DOCUMENT: SCD 25603  
PCN: E05012  
REV LETTER: C  
REV DATE: APRIL 28, 2007  
PAGE NO.: 2 OF 2

## DEVICE RATINGS @ 25° C (Both Polarities)

Parameter	Symbol	Value	Units
Repetitive Off-State Voltage, Maximum at ID = 5 $\mu$ A	VDM	300	V
Non-Repetitive Peak Impulse Current	IPP <sub>1</sub>	80	A
Telcordia GR-1089 CORE 10x1000 $\mu$ s	IPP <sub>2</sub>	100	A
TIA-968 lightning Type A Metallic 10/560 $\mu$ s	IPP <sub>3</sub>	150	A
Double exponential Waveform	IPP <sub>4</sub>	250	A
Telcordia GR-1089 Intrabuilding 2/10 $\mu$ s	IPP <sub>5</sub>	250	A
(Notes 1 and 2)	IPP <sub>6</sub>	100	A
IEC61000-4-5 (Voc 1.2/50us) 8/20 $\mu$ s	IPP <sub>7</sub>	100	A
ITU-T K.20/K.21 (Voc 10/700us) 5/310 $\mu$ s			
TIA-968 lightning Type B (Voc 9/720us) 5/320 $\mu$ s			
Critical Rate of Rise of On-State Current			
Powered Pulse Amplifier, C=30 $\mu$ F, V=600V	di/dt	500	A/ $\mu$ s
Maximum 2x10 $\mu$ sec waveform, V <sub>OC</sub> =1.25kV, I <sub>SC</sub> =250A peak	di/dt	170	A/ $\mu$ s

## DEVICE THERMAL RATINGS

Parameter	Symbol	Value	Units
Storage Temperature Range	TSTG	-55 to 150	°C
Operating Temperature Range Blocking or conducting state	TA	-40 to 125	°C
Overload Junction Temperature Maximum; Conducting state only	TJ	+150	°C
Maximum Lead Temperature for Soldering Purpose; for 10 seconds	TL	+260	°C

## ELECTRICAL CHARACTERISTICS Both polarities (T<sub>J</sub> @ 25°C unless otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Units
Breakover Voltage (+25°C) (dv/dt = 0.4kV/ $\mu$ s, I <sub>sc</sub> =900mA, V <sub>dc</sub> = 500V (both polarities))	VBO	----	350	400	V
Breakover Voltage Temperature Coefficient	dVBO/dTJ	----	0.1	-----	%/°C
Off-State Current (VD1=50V)	ID1	----	-----	2.0	$\mu$ A
(VD2=VDM)	ID2=IDM	----	-----	5.0	$\mu$ A
On-State Voltage (IT=1A) (PW $\leq$ 300 $\mu$ sec, Duty Cycle $\leq$ 2% (Note 2))	VT	----	-----	4.0	V
Breakover Current	IBO	----	-----	800	mA
Holding Current (Note 2)	IH	150	-----	----	mA
Peak Onstage Surge Current (Measured @ 60Hz, 1 cycle, 600V)	ITSM	30			A
Critical Rate of Rise of Off-State Voltage (Linear waveform, V <sub>D</sub> = 0.8 X Rated V <sub>BO</sub> , T <sub>J</sub> = +25°C)	dv/dt	2000	----	----	V/ $\mu$ s
Capacitance (f=1.0 Mhz, 50V <sub>DC</sub> bias, 1Vrms)	C1	----	21	----	pF
(f=1.0 Mhz, 2V <sub>DC</sub> bias, 1Vrms)	C2	----	42	----	pF

Note 1. Allow cooling before testing second polarity

Note 2. Measured under pulse conditions to reduce heating

## VOLTAGE-CURRENT CHARACTERISTIC

