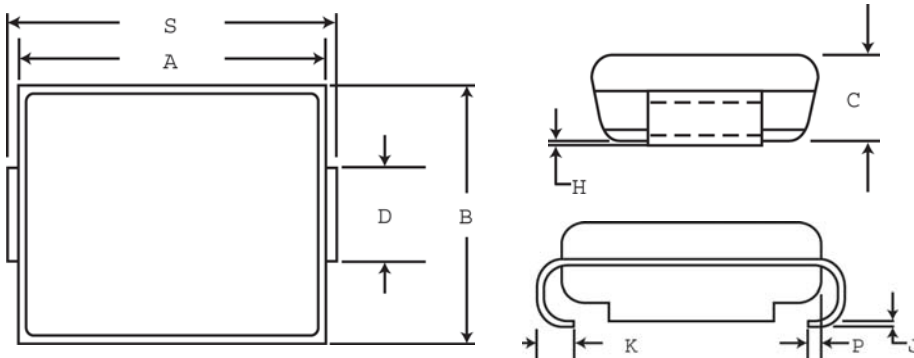
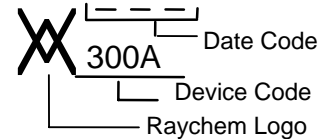


Specification Status: Released

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

OBSOLETE
NOT the LATEST
REVISION

SiBar™ Thyristor Surge Protectors

Raychem Circuit Protection Products

PRODUCT: TVB300SA-L

DOCUMENT: SCD 25604
PCN: F06500
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 $I_D = 5 \mu A$ | VDM | 300 | V |
| Non-Repetitive Peak Telcordia GR-1089 CORE 10x1000 μs | IPP ₁ | 50 | A |
| Impulse Current TIA-968 lightning Type A Metallic 10/560 μs | IPP ₂ | 70 | A |
| Double exponential TIA-968 lightning Type A Longit. 10/160 μs | IPP ₃ | 100 | A |
| Waveform Telcordia GR-1089 Intrabuilding 2/10 μs | IPP ₄ | 150 | A |
| (Notes 1 and 2) IEC61000-4-5 (Voc 1.2/50us) 8/20 μs | IPP ₅ | 150 | A |
| ITU-T K.20/K.21 (Voc 10/700us) 5/310 μs | IPP ₆ | 90 | A |
| TIA-968 lightning Type B (Voc 9/720us) 5/320 μs | IPP ₇ | 90 | A |
| Critical Rate of Rise of On-State Current | | | |
| Powered Pulse Amplifier, C=30 μF , V=600V | di/dt | 500 | A/ μs |
| Maximum 2x10 μs waveform, V _{oc} =750V, I _{sc} =150A peak | di/dt | 110 | A/ μs |

DEVICE THERMAL RATINGS

| | | | |
|---|------|------------|----|
| 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_J @ 25°C unless otherwise noted)

| Characteristics | Symbol | Min | Typ | Max | Units |
|--|----------|------|-------|-------|------------|
| Breakover Voltage (+25°C) (dv/dt = 0.4kV/ μs , I _{sc} =900mA, V _{dc} =500V (both polarities)) | VBO | ---- | 350 | 400 | V |
| Breakover Voltage Temperature Coefficient | dVBO/dTJ | ---- | 0.1 | ----- | %/°C |
| Off-State Current (VD1=50V) | ID1 | ---- | ----- | 2.0 | μA |
| (VD2=VDM) | ID2=IDM | ---- | ----- | 5.0 | μA |
| On-State Voltage (IT=1A) (PW \leq 300 μs , 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 | 22 | | | A |
| Critical Rate of Rise of Off-State Voltage (Linear waveform, V _D = 0.8 X Rated V _{BO} , T _J = +25°C) | dv/dt | 2000 | ---- | ----- | V/ μs |
| Capacitance (f=1.0 Mhz, 50V _{DC} bias, 1Vrms) | C1 | ---- | 14 | ----- | pF |
| (f=1.0 Mhz, 2V _{DC} bias, 1Vrms) | C2 | ---- | 27 | ----- | pF |

Note 1. Allow cooling before test second polarity

Note 2. Measured under pulse conditions to reduce heating

VOLTAGE-CURRENT CHARACTERISTIC

