

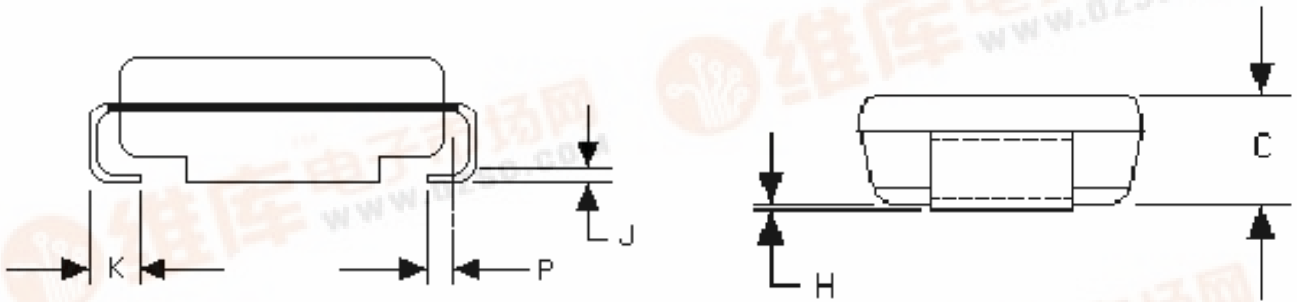
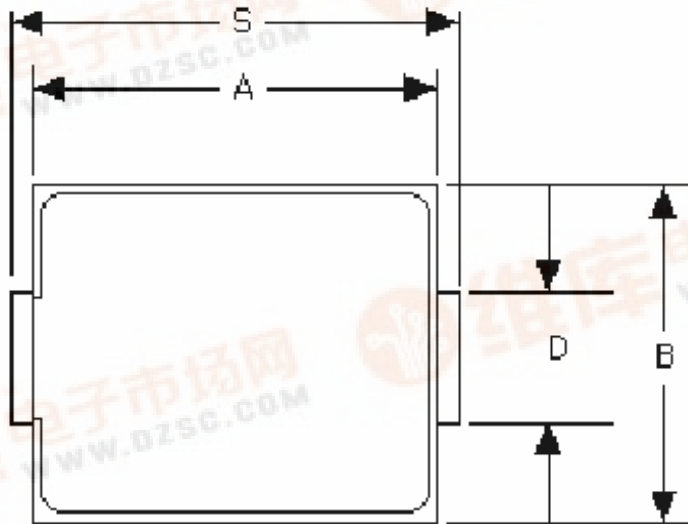
**Tyco/Electronics**  
**Raychem Corporation**  
 308 Constitution Drive  
 Menlo Park, CA 94025  
 800-227-4856  
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**PolySwitch®**  
**SiBar**  
**Thyristor Surge Protectors**

**PRODUCT: TVB170SC**  
 DOCUMENT: 24273  
 PCN: 295555  
 REV LETTER: B  
 REV DATE: AUGUST 16, 2001  
 PAGE NO.: 1 OF 2

**Specification Status: RELEASED**

**PHYSICAL DESCRIPTION**



	A		B		C		D*		H		J		K		P	S	
	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	REF	MIN	MAX
mm:	4.06	4.57	3.30	3.81	1.90	2.41	1.96	2.11	.051	.152	0.15	0.30	0.76	1.27	0.51	5.21	5.59
in:	.160	.180	.130	.150	.075	.095	.077	.083	.002	.006	.006	.012	.030	.050	.020	.205	.220

\* D DIMENSION SHALL BE MEASURED WITHIN DIMENSION P

**Other Physical Characteristics**

- Form Factor: SMB (Surface Mount DO-214 Package)
- Lead Material: Tin/lead 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

Tape and Reel packaging per EIA 481-1



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

Parameter	Symbol	Value	Units
Off-State Voltage, Maximum at $I_D = 5 \mu A$	VDM	170	V
Non-Repetitive Peak Impulse Current 10x1000 $\mu sec$	IPP <sub>1</sub>	100	A
Double exponential waveform (Notes 1 and 2) 10/560 $\mu sec$	IPP <sub>2</sub>	100	A
10/160 $\mu sec$	IPP <sub>3</sub>	200	A
2/10 $\mu sec$	IPP <sub>4</sub>	500	A
Critical Rate of Rise of On-State Current Maximum 2x10 $\mu sec$ waveform, $V_{OC}=2.5kV$ , $I_{SC}=500A$ peak	di/dt	250	A/ $\mu s$

**DEVICE THERMAL RATINGS**

Storage Temperature Range	TSTG	-65 to 150	°C
Operating Temperature Range Blocking or conducting state	TA	-40 to 125	°C
Overload Junction Temperature Maximum; Conducting state only	TJ	+175	°C

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

Characteristics	Symbol	Min	Typ	Max	Units
Breakover Voltage (+25°C) $dV/dt = 100V/\mu sec$ , $I_{SC}=1.0A$ , $V_{DC} = 1000V$	VBO	----	230	265	V
Breakover Voltage (+25°C) $f=60Hz$ , $I_{SC}=1.0A_{rms}$ , $V_{OC} = 1000V_{rms}$ , $R=1.0 k\Omega$ , $t = 0.5$ cycle (Note 2)	VBO	----	230	265	V
Breakover Voltage Temperature Coefficient	dVBO/dTJ	----	0.08	-----	%/°C
Off-State Current (VD1= 50V)	ID1	----	-----	2.0	$\mu A$
(VD2= VDM)	ID2	----	-----	5.0	$\mu A$
On-State Voltage (IT=1A) $PW \leq 300 \mu sec$ , Duty Cycle $\leq 2\%$ (Note 2)	VT	----	-----	5.0	V
Breakover Current	IBO	----	230	-----	mA
Holding Current (Note 2)	IH	175	350	----	mA
Critical Rate of Rise of Off-State Voltage (Linear waveform, $V_D = 0.8 X$ Rated VBO, $T_J = +25^\circ C$ )	dv/dt	5000	----	----	V/ $\mu s$
Capacitance (f=1.0 Mhz, 50Vdc bias, 1 Vrms)	C1	----	60	----	pF
(f=1.0 Mhz, 2Vdc bias, 15mVrms)	C2	----	160	----	pF

Note 1. Allow cooling before test second polarity

Note 2. Measured under pulse conditions to reduce heating

**VOLTAGE-CURRENT CHARACTERISTIC**

