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[TE Connectivity Raychem Circuit Protection
TVA270SA](#)

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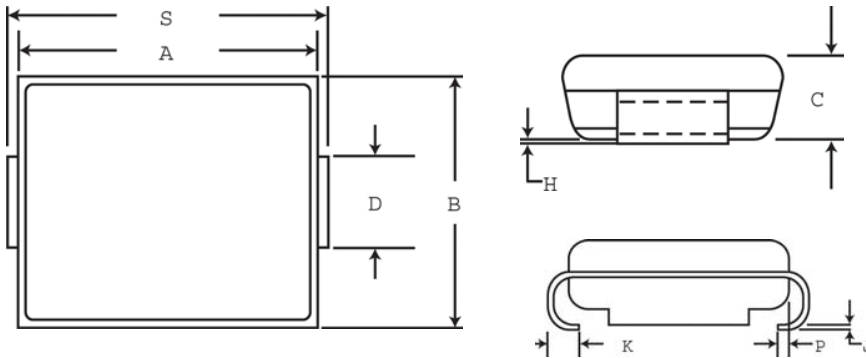
SiBar™
Thyristor Surge Protectors

PRODUCT : TVA270SA

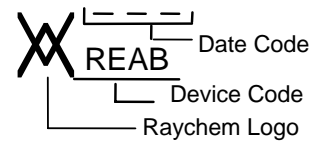
DOCUMENT: SCD 24788
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Specification Status: Released

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	2.29	2.92	1.91	2.40	1.27	1.63	0.05	0.15	0.15	0.41	0.76	1.52
in*:	(0.160)	(0.180)	(0.090)	(0.115)	(0.075)	(0.095)	(0.050)	(0.064)	(0.002)	(0.006)	(0.006)	(0.016)	(0.030)	(0.060)

P		S	
REF	MIN	MAX	
mm:	0.51	4.83	5.59
in*:	(0.020)	(0.190)	(0.220)

*Rounded off approximation

** D DIMENSION SHALL BE MEASURED WITHIN DIMENSION

Other Physical Characteristics

Form Factor: SMA (Surface Mount, JEDEC DO-214AC 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
 Vibration: per MIL-STD-750, Method 2056

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

ELV Compliant



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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	270	V
Non-Repetitive Peak Impulse Current 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=30uF, 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	----	310	365	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)	VT	----	----	3.0	V
(PW ≤ 300 μs , Duty Cycle ≤ 2% (Note 2))					
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 _p = 0.8 X Rated V _{BO} , T _J = +25°C)	dv/dt	2000	----	---	V/ μs
Capacitance (f=1.0 MHz, 50Vdc bias, 1 Vrms)	C1	----	22	---	pF
(f=1.0 MHz, 2Vdc bias, 15mVrms)	C2	----	33	---	pF

Note 1. Allow cooling before test second polarity

Note 2. Measured under pulse conditions to reduce heating

VOLTAGE-CURRENT CHARACTERISTIC

