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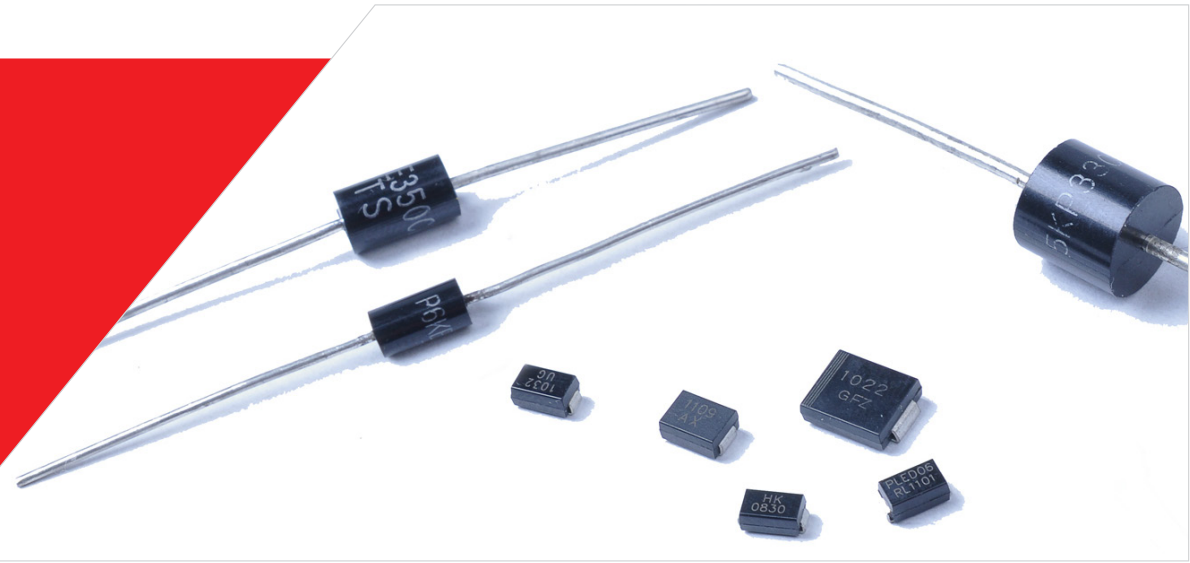

Transient Voltage Suppressors

SAC Series

361° Circuit Protection System

Specifications are subject to change without notice.

Please refer to http://www.ruilon.com for current information.

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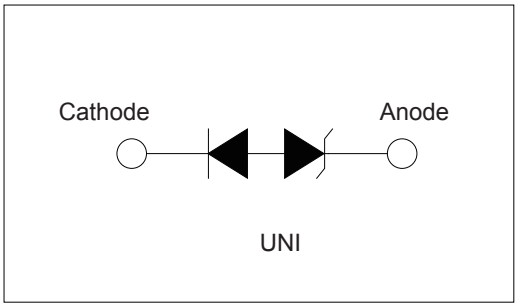
Transient Voltage Suppressors - SAC Series

Features

1. Halogen-free
2. Rohs compliant
3. Typical maximum temperature coefficient
4. ΔV_{BR} =0.1%xV_{BR}@25°C x ΔT
5. Glass passivated Chip junction in DO-15 package
6. 800W peak pulse capadility at 10x1000μs waveform,repetition rate (duty cycles):0.01%
7. Fast response time:typically less than 1.0ps from 0 Volts to BV min
8. Excellent clamping capability
9. Low incremental surge resistance
10. Typical IR less than 5μA above 11V
11. High temperature soldering guaranteed: 260°C/40 seconds / 0.375”, \(9.5mm) lead length, 5lbs., (2.3kg)tension
12. Plastic package has underwriters laboratory flammability classification 94v-0



Applications

TVS devices are ideal for the protection of I/O interfaces,VCC bus and other vulnerable circuits used in telecom, computer, industrial and consumer electronic applications.

Mechanical Characteristics

Rating	Symbol	Value	Units
Peak Pulse Power Dissipation by 10x1000μs test waveform (Fig.1)(Note 1)	P_{PPM}	500	Watts
Steady State Power Dissipation on inifinite heat sink at TL=75°C (Fig. 5)	P_D	3	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Unidirectional only (Note 2)	I_{FSM}	70	Amps
Maximum Instantaneous Forward Voltage at 25A for Unidirectional only (Note 3)	V_F	3.5/5.0	V
Operating junction and Storage Temperature Range.	T_J, T_{STG}	-55°C to 175°C	°C
Typical Thermal Resistance Junction to Lead	R_{uJL}	20	°C/W
Typical Thermal Resistance Junction to Ambient	R_{uJA}	75	°C/W

Notes:
1. Non-repetitive current pulse , per Fig. 3 and derated above TA = 25°C per Fig. 2.
2. Measured on 8.3ms single half sine wave or equivalent square wave, duty cycle=4 perminute maximum.
3. VF<3.5V for devices of VBR < 200V and VF<5.0V for devices of VBR > 201V.

Transient Voltage Suppressors - SAC Series

Electriacl Characteristics

Type Number	Reverse Stand-Off Voltage	Breakdown Voltage Min.@IT	Maximum Clamping Voltage@IPP	Peak Pulse Current	Reverse Leakage @VRWM	Maximum Junction Capacitance @ 0 Volts	Working Inverse Blocking VoltageVWIB	Inverse Blocking Leakage Current at IIB @ VWIB	Peak Inverse Blocking VoltageVPIB
(UNI)	V_{RWM}(V)	$V_{BR\ MIN.}$(V)	V_C(V)	I_{PP}(A)	I_R(μA)	(pF)	(V)	(mA)	(V)
SAC5.0	5.0	7.60	10.0	44.0	300	50	75	1.0	100
SAC6.0	6.0	7.90	11.2	41.0	300	50	75	1.0	100
SAC7.0	7.0	8.33	12.6	38.0	300	50	75	1.0	100
SAC8.0	8.0	8.89	13.4	36.0	100	50	75	1.0	100
SAC8.5	8.5	9.44	14.0	34.0	50	50	75	1.0	100
SAC10	10.0	11.10	16.3	29.0	5	50	75	1.0	100
SAC12	12.0	13.30	19.0	25.0	1	50	75	1.0	100
SAC15	15.0	16.70	23.6	20.0	1	50	75	1.0	100
SAC18	18.0	20.00	28.8	15.0	1	50	75	1.0	100
SAC22	22.0	24.40	35.3	14.0	1	50	75	1.0	100
SAC26	26.0	28.90	42.3	11.1	1	50	75	1.0	100
SAC30	30.0	33.30	48.6	10.0	1	50	75	1.0	100
SAC36	36.0	40.00	60.0	8.6	1	50	75	1.0	100
SAC45	45.0	50.00	77.0	6.8	1	50	150	1.0	200
SAC50	50.0	55.50	88.0	5.8	1	50	150	1.0	200

Transient Voltage Suppressors - SAC Series

Ratings and Characteristic Curves

Figure 1 - Peak Pulse Power Rating Curve

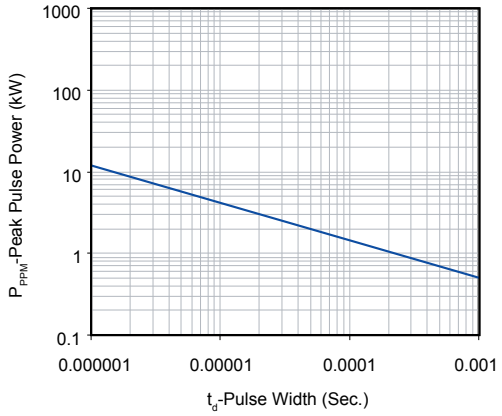


Figure 2 - Pulse Derating Curve

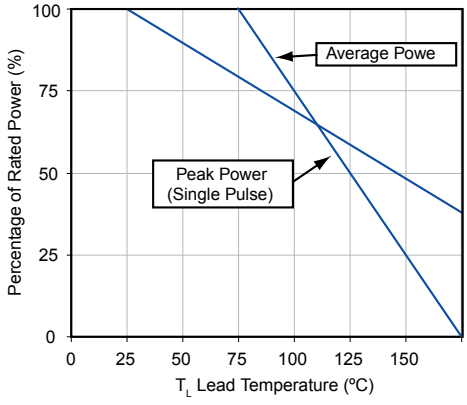


Figure 3 - Pulse Waveform

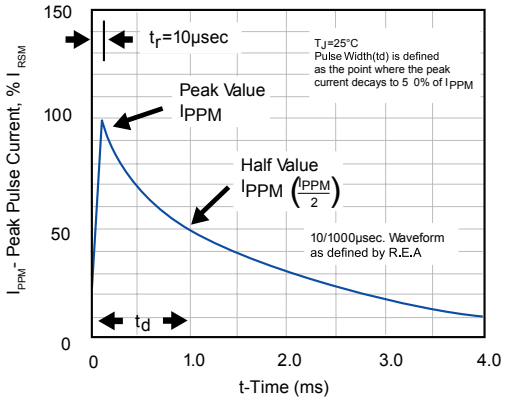
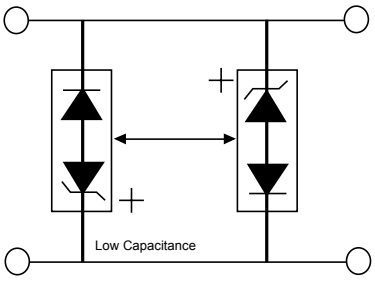
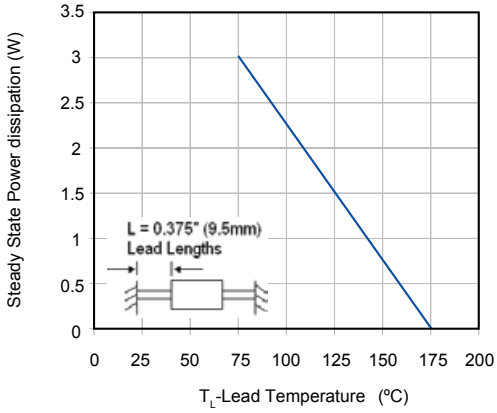


Figure 4 - AC Line Protection Application



Application Note: Device must be used with two units in parallel, opposite in polarity as shown in circuit for AC signal line protection.

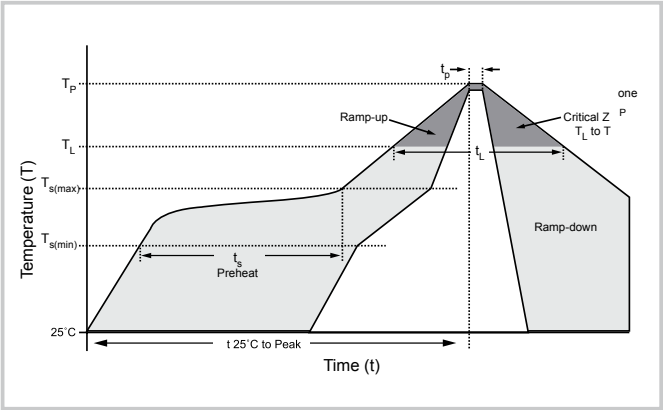
Figure 5 - Steady State Power Derating Curve



Transient Voltage Suppressors - SAC Series

Soldering Parameters

Feflow Condition		Lead-free assembly
Pre Heat	- Temperature Min ($T_{s(min)}$)	150°C
	- Temperature Max ($T_{s(min)}$)	200°C
	- Time (min to max) (t_s)	60-180 secs
Average ramp up rate (Liquidus Temp (T_L) to peak		3°C/second max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (min to max) (t_s)	60-150 seconds
Peak Temperature (T_P)		$260^{+0/-5}$ °C
Time within 5°C of actual peak Temperature (t_p)		20-40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		280°C



Physical Specifications

Weight	0.045oz., 1.2g
Case	JEDEC DO-201 molded plastic body over passivated junction.
Polarity	Color band denotes the cathode except Bipolar.
Termina	Matte Tin axial leads, solderable per JESD22-B102D.

Flow/Wave Soldering

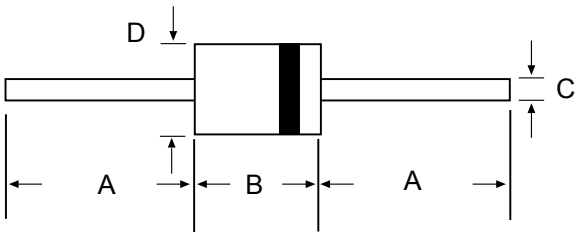
Peak Temperature :	265°C
Dipping Time :	10 seconds
Soldering :	1 time

Environmental Specifications

Temperature Cycle	JESD22-A104
Pressure Cooker	JESD 22-A102
High Temp. Storage	JESD22-A103
HTRB	JESD22-A108
Thermal Shock	JESD22-A106

Transient Voltage Suppressors - SAC Series

Dimensions



DO-204AC (DO-15)

Unit:mm

DIM	Inches		Millimeters	
	Min	Max	Min	Max
A	1.000	-	25.40	-
B	0.230	0.300	5.80	7.60
C	0.028	0.034	0.71	0.86
D	0.104	0.140	2.60	3.60

Part Numbering System

SAC xxx X

- OPTION CODE:
  BLANK Reel Tape
  -B Bulk Packaging
- VOLTAGE CODE
  (Refer to the Electrical Characteristics table)
- SERIES CODE

Packaging

Part Number	Component Package	Quantity	Packaging Option	Packaging Specification
SACxxxXX	DO-204AC	2000	Tape & Reel	ELA STD RS-296E
SACxxxXX-B	DO-204AC	500	BULK	Concord Packing Spec

Warehouse Storage Conditions of Products

- Storage Conditions:

1. Storage Temperature: -10°C~+40°C
2. Relative Humidity:≤75%RH
3. Keep away from corrosive atmosphere and sunlight.

- Period of Storage: 1 year

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