Innovative Service Around the Globe YAGEO

DATA SHEET

TRANSIENT VOLTAGE SUPPRESSORS
AC/DC POWER SUPPLY

SAC series

RoHS compliant & Halogen free

Product specification– June 30, 2023 V.3



Transient Voltage Suppressors (TVS) Data Sheet

Features



- Glass passivated junction
- Low inductance
- Excellent clamping capability
- 500W peak pulse power capability at 10/1000μs waveform, repetition rate (duty cycle): 0.01%
- Fast response time
- Ideal for data line applications.
- High Temperature soldering guaranteed: 265℃/10 seconds/.375″, (9.5mm) lead length, 5lbs (2.3kg) tension
- Plastic package has underwriters laboratory flammability 94V-0
- Meets MSL level 1, per J-STD-020
- Safety certification: UL
- IEC61000-4-2 ESD 30KV Air, 30KV contact compliance

Mechanical Data

- Case: JEDEC DO-15 Moulded plastic
- Terminal: Axial leads, solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode except bi-directional models
- Mounting Position: Any
- Weight: 0.42g

Applications

- I/O interface
- AC/DC power supply
- Low frequency signal transmission line (RS232, RS485, etc.)

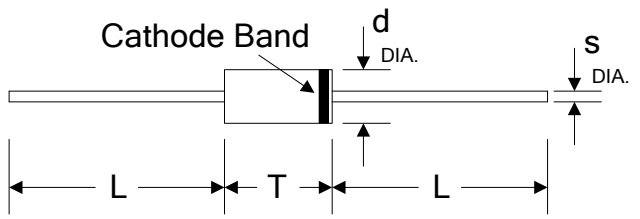
Maximum Ratings and Characteristics

Ratings at 25℃ ambient temperature unless otherwise specified.

Rating	Symbol	Value	Units
Peak pulse power dissipation at 10/1000μs waveform (Note1, Fig.1)	P_{PPM}	Minimum 500	Watts
Peak pulse current of at 10/1000μs waveform (Note 1, Fig.3)	I_{PPM}	See Table	Amps
Steady state power dissipation at T_L=75℃ (Fig.5)	$P_{M(AV)}$	3.0	Watts
Operating junction and Storage Temperature Range.	T_J,T_{STG}	-55 to +150	℃

Notes: 1. Non-repetitive current pulse, per Fig.3 and derated above T_A=25℃ per Fig.2.

Dimensions (DO-204AC/DO-15)



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
L	25.40	-	1.000	-
T	5.80	7.60	0.230	0.300
d	2.60	3.60	0.104	0.140
s	0.71	0.86	0.028	0.034

Electrical Characteristics (T_A=25℃)

Part Number	Reverse Stand-Off Voltage	Minimum Breakdown Voltage @I_T=1mA	Maximum Reverse Leakage @V_{RWM}	Maximum Clamping Voltage @I_{PP}=5A	Maximum Peak Pulse Current	Maximum Junction Capacitance @0V	Working Inverse Blocking Voltage	Inverse Blocking Leakage Current	Peak Inverse Blocking Voltage
	V_{RWM}(V)	V_{BR}(V)	I_R(μA)	V_C(V)	I_{PP}(A)	pF	V_{WIB}(V)	I_{IB}(mA)	V_{PIB}(V)
SAC5.0	5.0	7.60	300	10.0	44.0	50	75	1.0	100
SAC6.0	6.0	7.90	300	11.2	41.0	50	75	1.0	100
SAC7.0	7.0	8.33	300	12.6	38.0	50	75	1.0	100
SAC8.0	8.0	8.89	100	13.4	36.0	50	75	1.0	100
SAC8.5	8.5	9.44	50	14.0	34.0	50	75	1.0	100
SAC10	10.0	11.10	5	16.3	29.0	50	75	1.0	100
SAC12	12.0	13.30	1	19.0	25.0	50	75	1.0	100
SAC15	15.0	16.70	1	23.6	20.0	50	75	1.0	100
SAC18	18.0	20.00	1	28.8	15.0	50	75	1.0	100
SAC22	22.0	24.40	1	35.4	14.0	50	75	1.0	100
SAC26	26.0	28.90	1	42.3	11.1	50	75	1.0	100
SAC30	30.0	33.30	1	48.6	10.0	50	75	1.0	100
SAC36	36.0	40.00	1	60.0	8.6	50	75	1.0	100
SAC45	45.0	50.00	1	77.0	6.8	50	150	1.0	200
SAC50	50.0	55.50	1	88.0	5.8	50	150	1.0	200

Ratings and Characteristic Curves (T_A=25℃ unless otherwise noted)

Figure 1. Peak Pulse Power Rating Curve

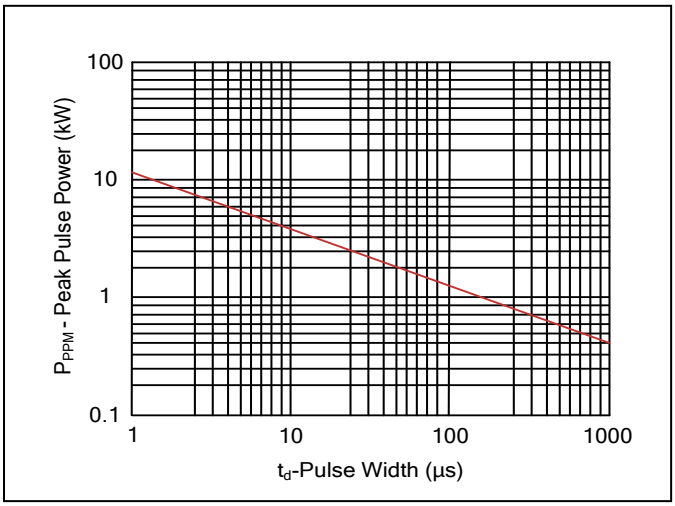


Figure 2. Pulse Derating Curve

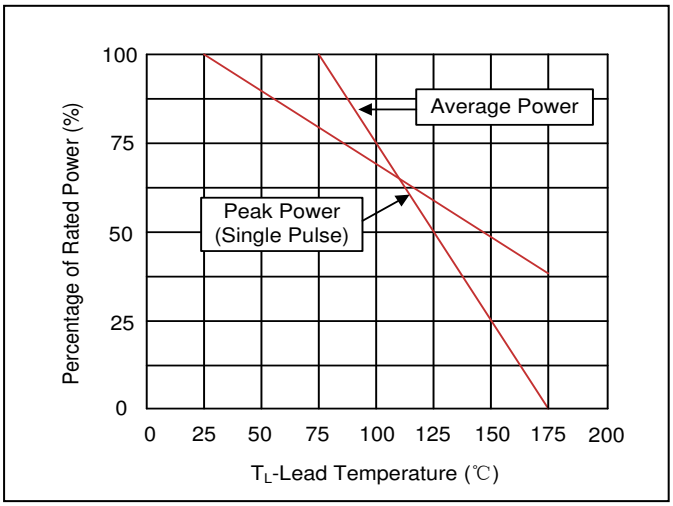


Figure 3. Pulse Waveform

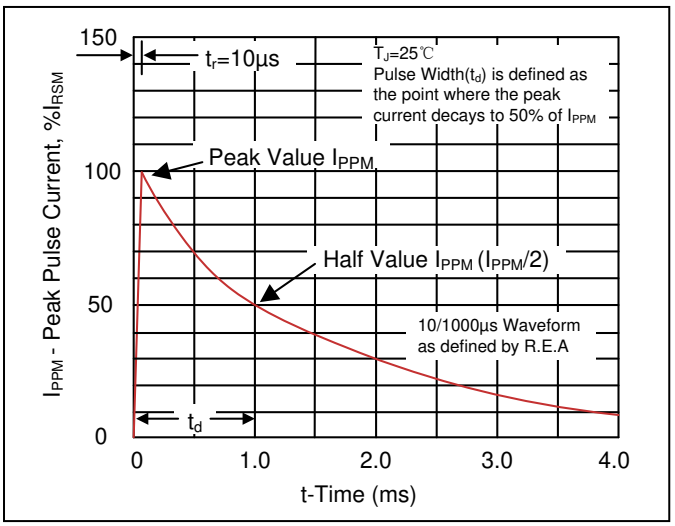
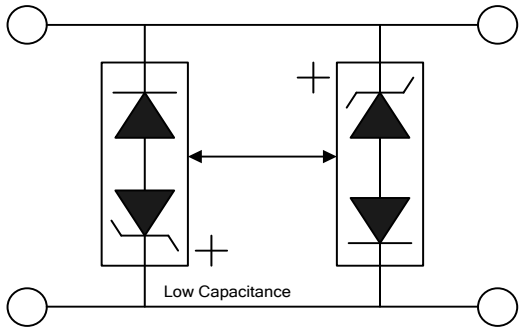
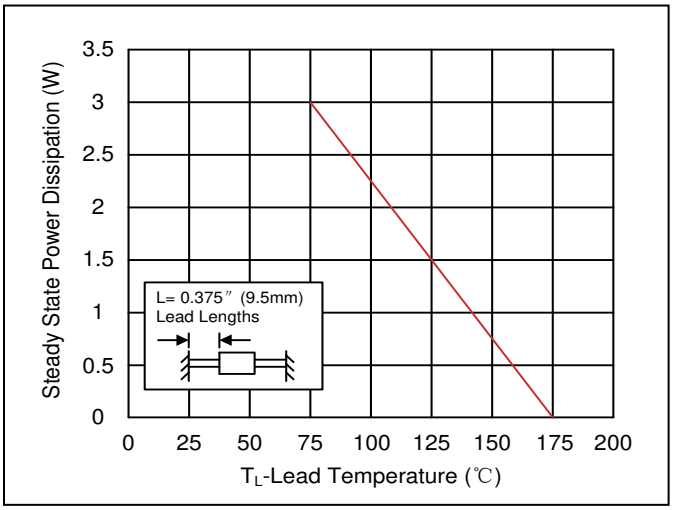


Figure 4. AC Line Protection Application



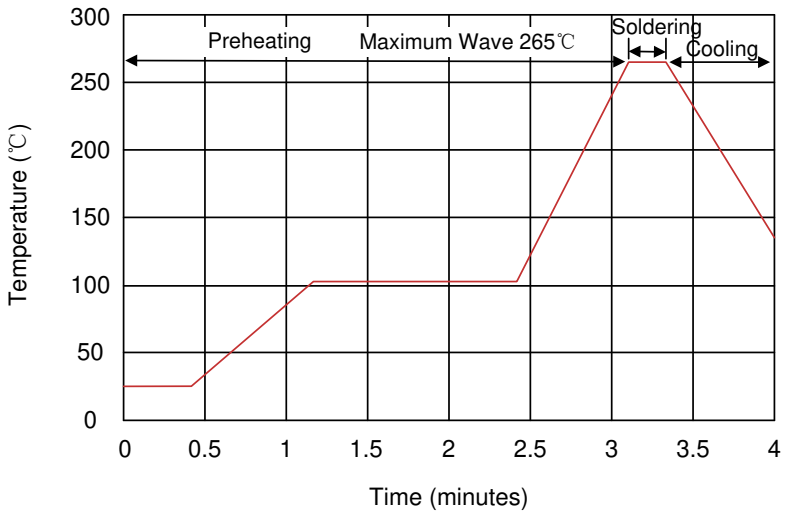
Application Note: Device must be used with two units in parallel, opposite in polarity as shown in circuit for AC signal line protection.

Figure 5. Steady State Power Dissipation Derating Curve



Recommended Soldering Conditions

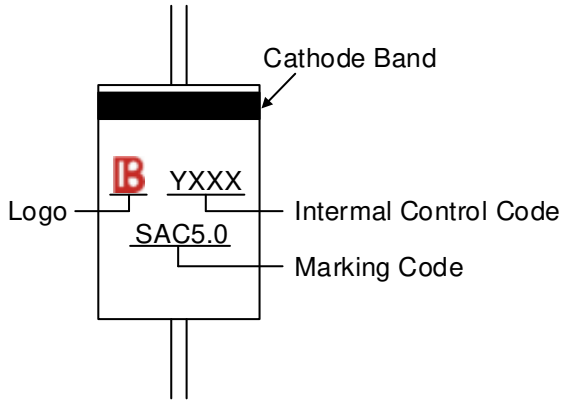
Wave Soldering



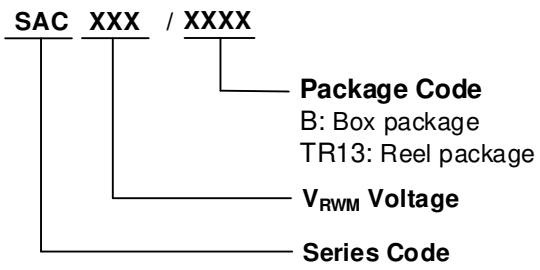
Recommended Conditions

Item	Conditions
Peak Temperature	265℃
Dipping Time	10 seconds
Soldering	1 time

Marking Code



Part Number Code

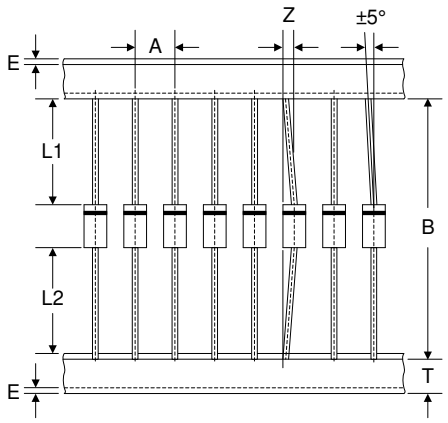


Ordering Code for Different Package

Box package: Add suffix “/B” at the end of the part number, such as SACXXX/B
Reel package: Add suffix “/TR13” at the end of the part number, such as SACXXX/TR13

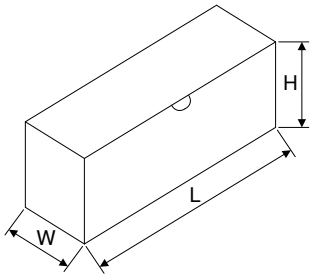
Packaging

Tape



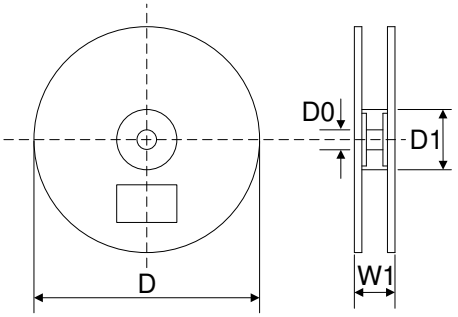
Symbol	Dimension (mm)
A	5.0±0.5
B	53.0±1.0
Z	1.2Max.
T	6.0±0.4
E	0.8Max.
L1-L2	1.0Max.

Box



L	250.0±5.0
W	75.0±5.0
H	114.0±5.0
Quantity: 2000PCS	

Reel



D	330.0±3.0
D0	16.4±2.0
D1	86.0±2.0
W1	76.0±3.0
Quantity: 4000PCS	

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