

# DATA SHEET

## TRANSIENT VOLTAGE SUPPRESSORS

### AC/DC POWER SUPPLY

ATS-2CF series

RoHS compliant & Halogen free



Product specification- July 05, 2023 V.3



## Transient Voltage Suppressors (TVS) Data Sheet

### Features

- Glass passivated junction
- Low inductance
- Excellent clamping capability
- 10000W peak pulse power capability at 10/1000 $\mu$ s waveform, repetition rate (duty cycle): 0.05%
- Fast response time
- High Temperature soldering guaranteed: 265°C/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
- AEC-Q101 qualified
- IEC61000-4-2 ESD 30KV Air, 30KV contact compliance



### Mechanical Data

- Case: Moulded plastic over glass passivated junction
- Terminal: Plated Axial leads, solderable per MIL-STD-750, Method 2026
- Mounting Position: Any
- Weight: 2.75g

### Applications

■ I/O interface	■ Low frequency signal transmission line (RS232, RS485, etc.)
■ AC/DC power supply	■ Meets ISO7637-2 surge spec.

### Maximum Ratings and Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Units
Peak pulse power dissipation at 10/1000 $\mu$ s waveform (Note1, Fig.2)	P <sub>PPM</sub>	Minimum 10000	Watts
Peak pulse current of at 10/1000 $\mu$ s waveform (Note 1, Fig.3)	I <sub>PPM</sub>	See Table	Amps
Steady state power dissipation at T <sub>L</sub> =75°C (Fig.5)	P <sub>M(AV)</sub>	8.0	Watts
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, (JEDEC Method) (Note2, Fig.6)	I <sub>FSM</sub>	300	Amps
Operating junction and Storage Temperature Range.	T <sub>J</sub> , T <sub>STG</sub>	-55 to +150	°C
Typical thermal resistance junction to lead	R <sub>θJL</sub>	8	°C/W
Typical thermal resistance junction to ambient	R <sub>θJA</sub>	40	°C/W

Notes: 1. Non-repetitive current pulse, per Fig.3 and derated above T<sub>A</sub>=25°C per Fig.2.

2. 8.3ms single half sine-wave, or equivalent square wave, duty cycle=4 pulses per minutes maximum.

## Dimensions (P600)

Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
L	25.40	-	1.000	-
T	8.60	9.10	0.340	0.360
d	8.60	9.10	0.340	0.360
s	1.19	1.32	0.047	0.052

Electrical Characteristics ( $T_A=25^\circ C$ )

Part Number		Type ①	Breakdown Voltage @ $I_T$		Test Current	Reverse Stand-Off Voltage	Reverse Leakage @ $V_{RWM}$	Maximum Clamping Voltage @ $I_{PP}$	Peak Pulse Current
Unidirectional	Bidirectional		$V_{BR}$ MIN.(V)	$V_{BR}$ MAX.(V)					
ATS22A	ATS22C	2CF	24.2	26.9	5	22	1.8	35.5	287
ATS24A	ATS24C	2CF	26.7	29.6	5	24	1.8	39	257
ATS26A	ATS26C	2CF	28.9	32	5	26	1.8	42.1	237
ATS28A	ATS28C	2CF	31.1	34.5	5	28	1.8	45.4	220
ATS30A	ATS30C	2CF	33	38	5	30	1.8	50	250
ATS33A	ATS33C	2CF	36.7	40.6	5	33	1.8	53	190
ATS36A	ATS36C	2CF	40	44.2	5	36	1.8	58.1	174
ATS40A	ATS40C	2CF	44.4	49.1	5	40	1.8	64.5	155

Part Number		Type ①	Suitable ISO 7637-2 2004 5a test waveform										
			Maximum Clamping Voltage	Voltage level			Resistance Level						
Unidirectional	Bidirectional			$V_c$ (V)	87V 400mS	174V 350mS	DC(V)	0.5Ω	1Ω	2Ω	3Ω	4Ω	8Ω
ATS22A	ATS22C	2CF	35.5	×	--	13.5	--	×	×	×	×	×	×
ATS24A	ATS24C	2CF	39	×	--	13.5	--	×	×	×	×	×	×
ATS26A	ATS26C	2CF	42.1	×	--	27	--	--	--	--	--	×	×
ATS28A	ATS28C	2CF	45.4	×	--	27	--	--	--	--	--	×	×
ATS30A	ATS30C	2CF	50	--	×	28	--	--	--	--	--	×	×
ATS33A	ATS33C	2CF	53	--	×	28	--	--	--	--	--	×	×
ATS36A	ATS36C	2CF	58.1	--	×	28	--	--	--	--	--	×	×
ATS40A	ATS40C	2CF	64.5	--	×	28	--	--	--	--	--	×	×

Note: 'x' represents meets this test condition;



Jul. 05, 2023 V.3

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Ratings and Characteristic Curves ( $T_A=25^\circ\text{C}$  unless otherwise noted)

Figure 1. ISO 7637-2 5a Test pulse

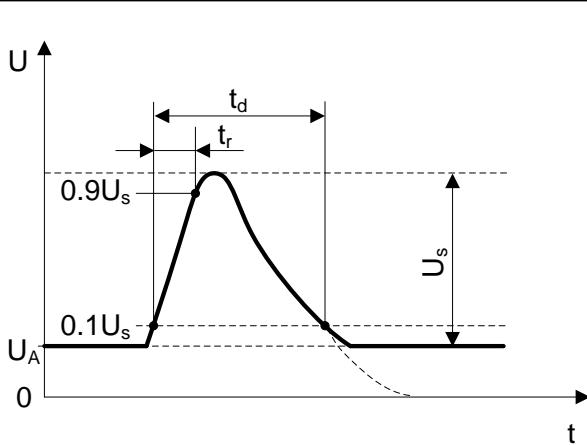


Figure 2. Peak Pulse Power Rating Curve

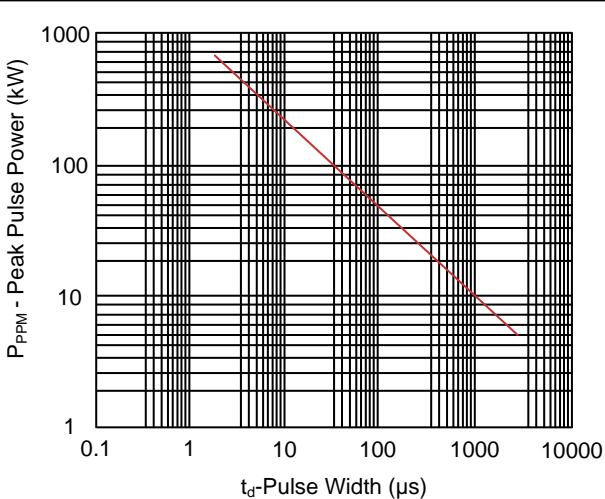


Figure 3. Pulse Waveform

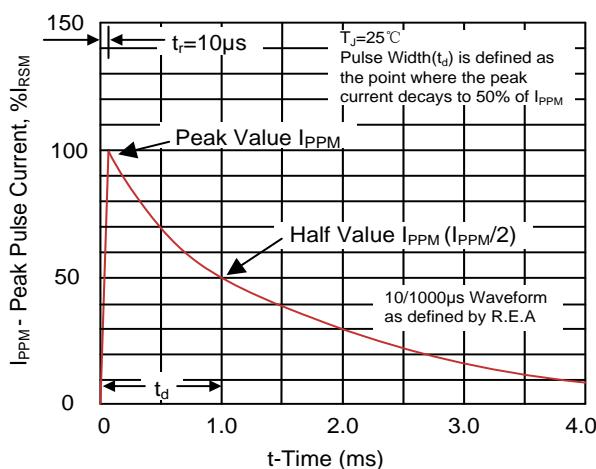


Figure 4. Pulse Derating Curve

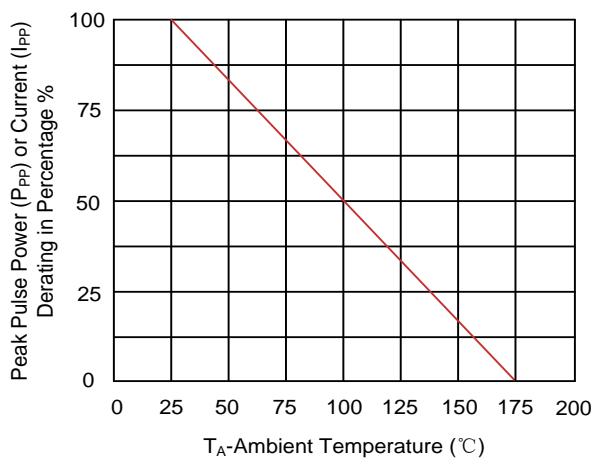


Figure 5. Steady State Power Dissipation Derating Curve

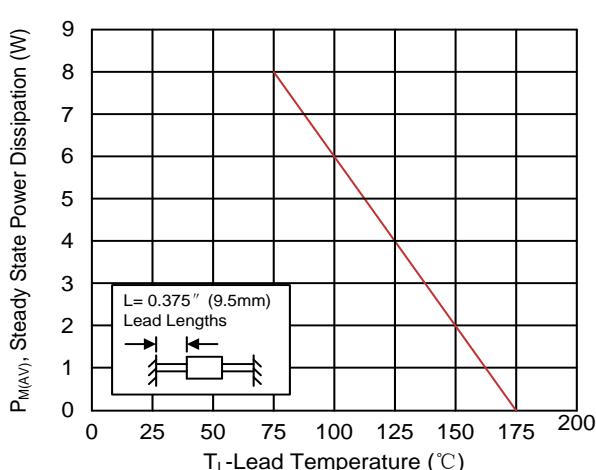
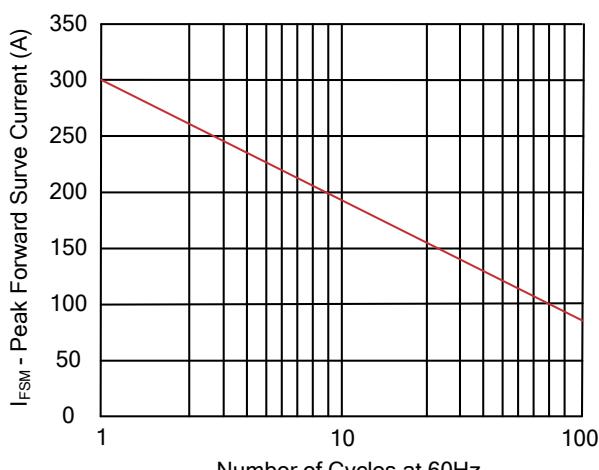
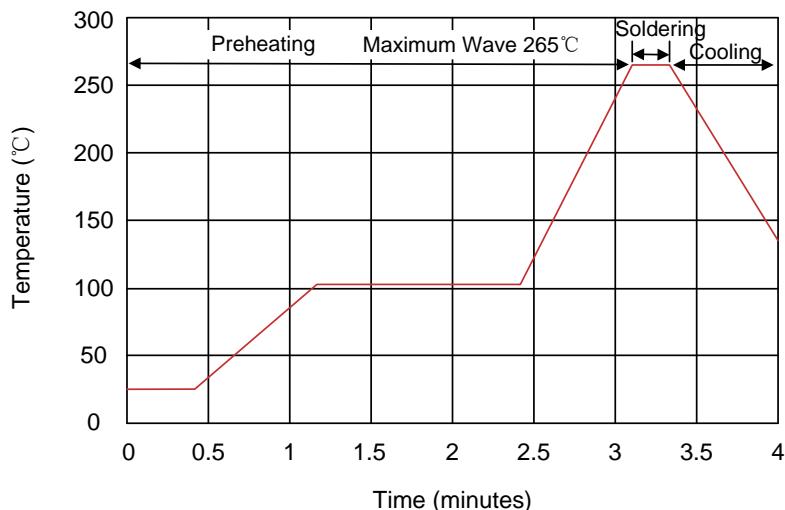


Figure 6. Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



## Recommended Soldering Conditions

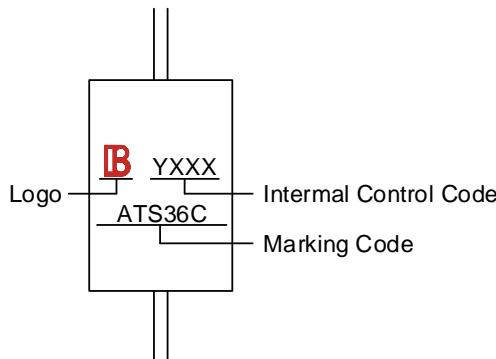
### Wave Soldering



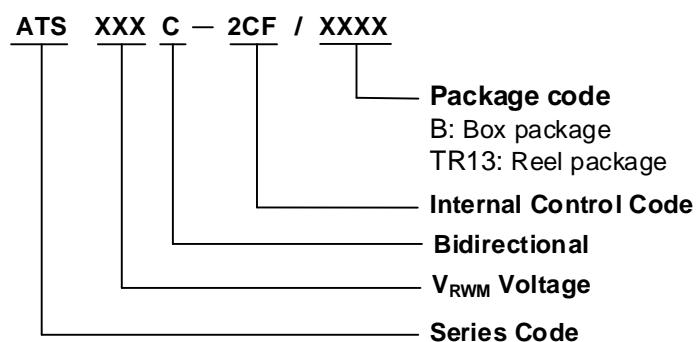
### Recommended Conditions

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

## Marking Code



## Part Number Code

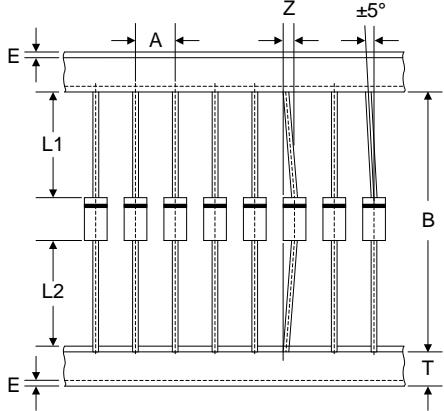
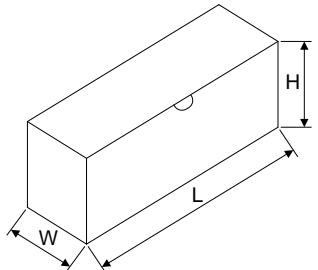
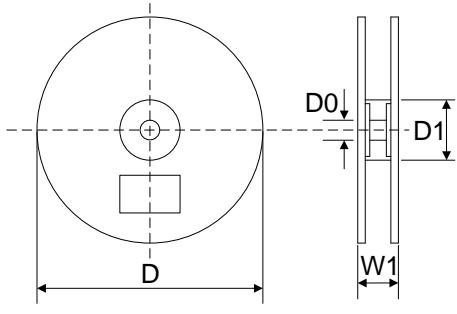


## Ordering Code for Different Package

Box package: Add suffix "/B" at the end of the part number, such as ATSXXXXC-2CF/B

Reel package: Add suffix "/TR13" at the end of the part number, such as ATSXXXXC-2CF/TR13

## Packaging

Tape	Symbol	Dimension (mm)
	A	10.0±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: 300PCS	
Reel	D	330.0±3.0
	D0	16.4±2.0
	D1	86.0±2.0
	W1	76.0±3.0
	Quantity: 800PCS	

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