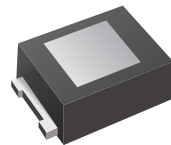




RHVxxA(C)JP Series Transient Voltage Suppressors (TVS) Data Sheet

Features

- Top-side Cooling(TSC) Packaging technology
- Compact and Slim Packaging Solutions
- For surface mounted applications in order to optimize board space
- 600W peak pulse power capability at 10/1000 μ s waveform, repetition rate (duty cycle): 0.01%
- Low inductance
- Excellent clamping capability
- Fast response time
- Plastic package has underwriters laboratory flammability 94V-0
- Meets MSL level 1, per J-STD-020
- Lead free in comply with EU RoHS 2011/65/EU directives



Mechanical Data

- Case: SMHM
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: For uni-directional types the band denotes cathode end, no marking on bi-directional types

Applications

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

Ordering Information

Part Number	Marking	Shipping	Reel
RHVxxA(C)JP	See the Table	15000PCS Tape&Reel	13 inches

Maximum Ratings and Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Units
Peak pulse power dissipation at 10/1000 μ s waveform (Note1, Note2, Fig.1)	P_{PPM}	Minimum 600	W
Peak pulse current of at 10/1000 μ s waveform (Note 1, Fig.3)	I_{PPM}	See Table	A
Steady state power dissipation at $T_A=50^{\circ}\text{C}$ (Fig.5)	$P_{M(AV)}$	5.0	W
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, (JEDEC Method) (Note3, Fig.6)	I_{FSM}	100	A
Operating junction and Storage Temperature Range.	T_J, T_{STG}	-55 to +150	$^{\circ}\text{C}$
Typical thermal resistance junction to case	$R_{\theta JC}$	6	$^{\circ}\text{C/W}$
Typical thermal resistance junction to ambient	$R_{\theta JA}$	53	$^{\circ}\text{C/W}$

Notes: 1. Non-repetitive current pulse, per Fig.3 and derated above $T_A=25^{\circ}\text{C}$ per Fig.2.

2. Mounted on 2mm $\times$ 2mm copper pads to each terminal.

3. 8.3ms single half sine-wave, or equivalent square wave, duty cycle=4 pulses per minutes maximum, unidirectional only.



RHVxxA(C)JP Series

Transient Voltage Suppressors (TVS) Data Sheet

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

Part Number (Uni)	Part Number (Bi)	Marking	Reverse Stand off Voltage V_R (Volts)	Breakdown Voltage V_{BR} (Volts)@ I_T		Test Current I_T (mA)	Maximum Clamping Voltage V_C @ I_{PP} (V)	Maximum Peak Pulse Current I_{PP} (A)	Maximum Reverse Leakage I_R @ V_R (μA)
				Min	Max				
RHV6.8AJP	RHV6.8CJP	6J8P	5.80	6.45	7.14	10	10.5	58.1	500
RHV7.5AJP	RHV7.5CJP	7J5P	6.40	7.13	7.88	10	11.3	54.0	400
RHV8.2AJP	RHV8.2CJP	8J2P	7.02	7.79	8.61	10	12.1	50.4	200
RHV9.1AJP	RHV9.1CJP	9J1P	7.78	8.65	9.55	1	13.4	45.5	50
RHV10AJP	RHV10CJP	10JP	8.55	9.50	10.50	1	14.5	42.1	10
RHV11AJP	RHV11CJP	11JP	9.40	10.50	11.60	1	15.6	39.1	1
RHV12AJP	RHV12CJP	12JP	10.20	11.40	12.60	1	16.7	36.5	1
RHV13AJP	RHV13CJP	13JP	11.10	12.40	13.70	1	18.2	33.5	1
RHV15AJP	RHV15CJP	15JP	12.80	14.30	15.80	1	21.2	28.8	1
RHV16AJP	RHV16CJP	16JP	13.60	15.20	16.80	1	22.5	27.1	1
RHV18AJP	RHV18CJP	18JP	15.30	17.10	18.90	1	25.5	24.2	1
RHV20AJP	RHV20CJP	20JP	17.10	19.00	21.00	1	27.7	22.0	1
RHV22AJP	RHV22CJP	22JP	18.80	20.90	23.10	1	30.6	19.9	1
RHV24AJP	RHV24CJP	24JP	20.50	22.80	25.20	1	33.2	18.4	1
RHV27AJP	RHV27CJP	27JP	23.10	25.70	28.40	1	37.5	16.3	1
RHV30AJP	RHV30CJP	30JP	25.60	28.50	31.50	1	41.4	14.7	1
RHV33AJP	RHV33CJP	33JP	28.20	31.40	34.70	1	45.7	13.3	1
RHV36AJP	RHV36CJP	36JP	30.80	34.20	37.80	1	49.9	12.2	1
RHV39AJP	RHV39CJP	39JP	33.30	37.10	41.00	1	53.9	11.3	1
RHV43AJP	RHV43CJP	43JP	36.80	40.90	45.20	1	59.3	10.3	1
RHV47AJP	RHV47CJP	47JP	40.20	44.70	49.40	1	64.8	9.4	1
RHV51AJP	RHV51CJP	51JP	43.60	48.50	53.60	1	70.1	8.7	1
RHV56AJP	RHV56CJP	56JP	47.80	53.20	58.80	1	77	7.9	1
RHV62AJP	RHV62CJP	62JP	53.00	58.90	65.10	1	85	7.2	1
RHV68AJP	RHV68CJP	68JP	58.10	64.60	71.40	1	92	6.6	1
RHV75AJP	RHV75CJP	75JP	64.10	71.30	78.80	1	103	5.9	1
RHV82AJP	RHV82CJP	82JP	70.10	77.90	86.10	1	113	5.4	1
RHV91AJP	RHV91CJP	91JP	77.80	86.50	95.50	1	125	4.9	1
RHV100AJP	RHV100CJP	100JP	85.50	95.00	105.00	1	137	4.5	1
RHV110AJP	RHV110CJP	110JP	94.00	105.00	116.00	1	152	4.0	1
RHV120AJP	RHV120CJP	120JP	102.00	114.00	126.00	1	165	3.7	1
RHV130AJP	RHV130CJP	130JP	111.00	124.00	137.00	1	179	3.4	1
RHV150AJP	RHV150CJP	150JP	128.00	143.00	158.00	1	207	2.9	1
RHV160AJP	RHV160CJP	160JP	136.00	152.00	168.00	1	219	2.8	1
RHV170AJP	RHV170CJP	170JP	145.00	162.00	179.00	1	234	2.6	1
RHV180AJP	RHV180CJP	180JP	154.00	171.00	189.00	1	246	2.5	1
RHV200AJP	RHV200CJP	200JP	171.00	190.00	210.00	1	274	2.2	1
RHV220AJP	RHV220CJP	220JP	185.00	209.00	231.00	1	328	1.9	1
RHV250AJP	RHV250CJP	250JP	214.00	237.00	263.00	1	344	1.8	1
RHV300AJP	RHV300CJP	300JP	256.00	285.00	315.00	1	414	1.5	1
RHV350AJP	RHV350CJP	350JP	300.00	332.00	368.00	1	482	1.3	1
RHV400AJP	RHV400CJP	400JP	342.00	380.00	420.00	1	548	1.1	1
RHV440AJP	RHV440CJP	440JP	376.00	418.00	462.00	1	602	1.0	1
RHV480AJP	RHV480CJP	480JP	408.00	456.00	504.00	1	658	0.9	1
RHV510AJP	RHV510CJP	510JP	434.00	485.00	535.00	1	698	0.9	1
RHV530AJP	RHV530CJP	530JP	450.00	503.50	556.50	1	725	0.8	1
RHV540AJP	RHV540CJP	540JP	459.00	513.00	567.00	1	740	0.8	1
RHV550AJP	RHV550CJP	550JP	467.00	522.50	577.50	1	760	0.8	1

Notes: For bidirectional type having V_R of 10V and less, the I_R limit is double.



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

Fig.1 Peak Pulse Power Rating Curve

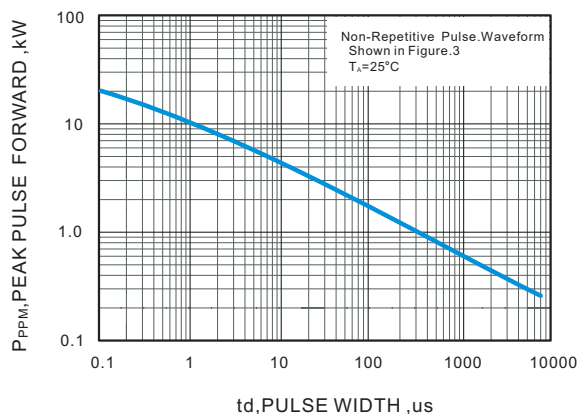


Fig.2 Forward Current Derating Curve

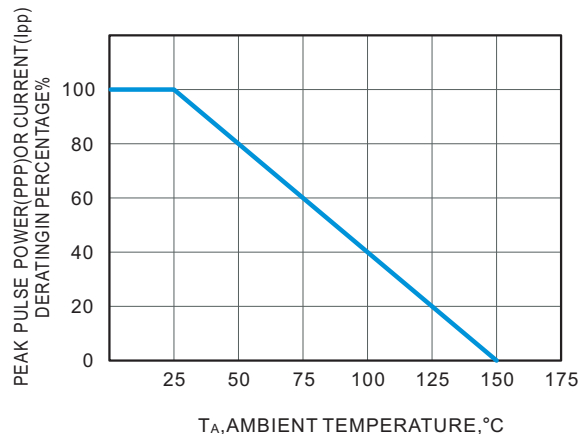


Fig.3 Pulse Waveform

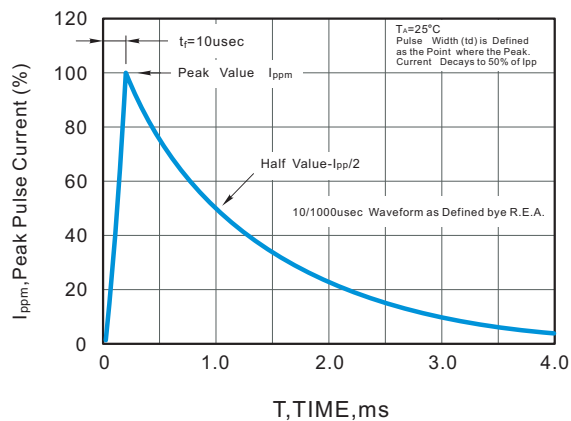
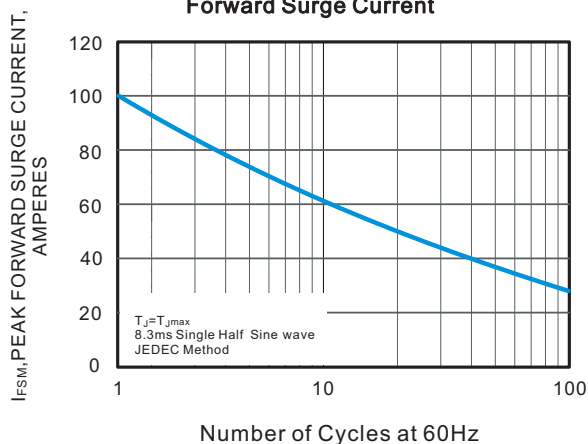


Fig.4 Maximum Non-Repetitive Peak Forward Surge Current





SMHM

The image displays three orthographic views of a mechanical component:

- Top View:** Shows a square outer profile with side length D and a square inner profile with side length f . The distance from the inner square's edge to the outer square's edge is e . The total height of the part is E .
- Bottom View:** Shows the underside of the part, which is a square with side length d . It features a central square hole with side length h .
- Front view:** Shows the side profile of the part. The total height is A , and the total width is H_E . The top surface is labeled $\angle$ ALL ROUND, indicating a fillet. The bottom surface is labeled C .

UNIT		A	C	D	E	H _E	d	e	f	h	∠
mm	max	0.99	0.25	3.60	3.00	4.30	2.10	2.10	2.00	0.70	6°
	min	0.83	0.15	3.20	2.60	3.70	1.90	1.90	1.78	0.50	

SMHM

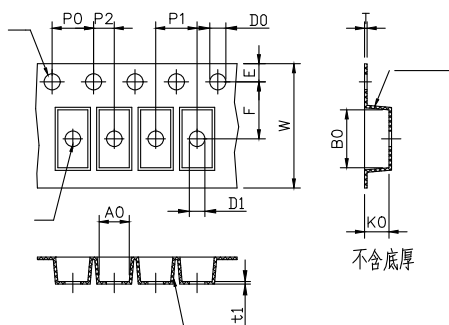
1. Controlling dimension:in millimeters.
2. General tolerance:±0.05mm.
3. The pad layout is for reference purpose only.



RHVxxA(C)JP Series Transient Voltage Suppressors (TVS) Data Sheet

Carrier Tape Dimensions

Unit : mm

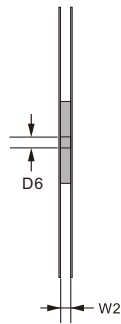
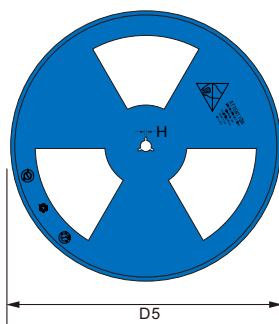


Symbol	Spec	Symbol	Spec
W	12.0±0.10	P2	2.00±0.10
E	1.75±0.10	t	0.25±0.03
F	5.50±0.10	t1	0.05+
D0	1.55±0.10	A0	3.05±0.10
D1	1.50±0.10	B0	4.30±0.10
P0	4.00±0.10	K0	1.15±0.10
P1	4.00±0.10		

Reel Dimensions

Unit : mm

13" Reel

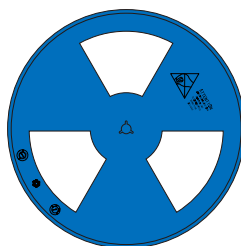


D5	Φ330.0±5.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±2.0
Quantity: 15000PCS	

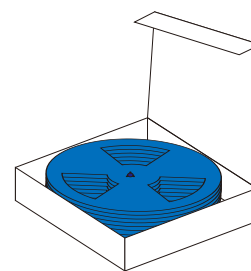
Packaging



15000 PCS/Reel

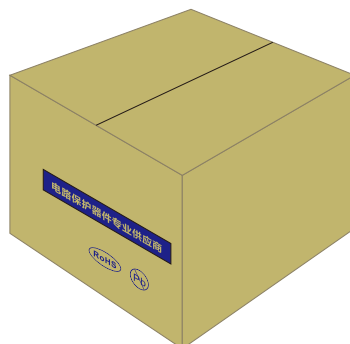


5 Reel/Inner Box
75 KPCS/Inner Box



Dim(Unit:mm)
340mm*340mm*85mm

Dim(Unit:mm)
360mm*360mm*355mm

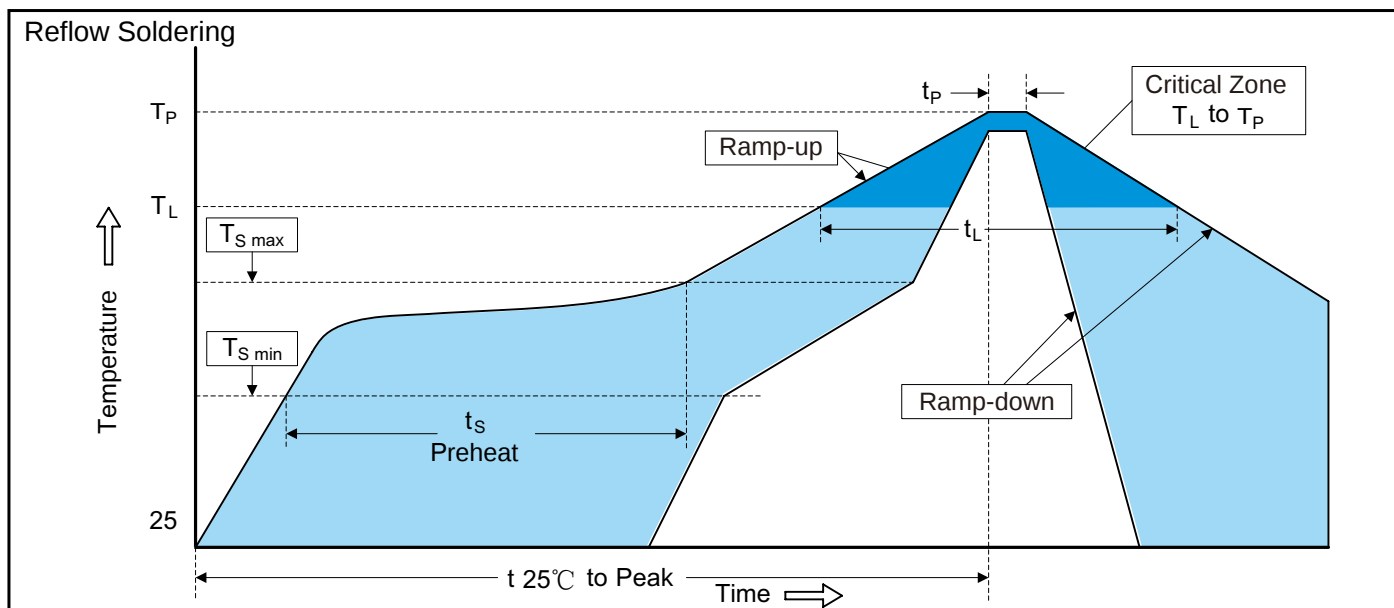


4 Boxes per carton
300 KPCS per carton

13 inches Reel



Recommended Soldering Conditions



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T_L to T_P)	3°C/second max.
Preheat	
-Temperature Min ($T_{S\ min}$)	150°C
-Temperature Max ($T_{S\ max}$)	200°C
-Time (min to max) (t_s)	60-180 seconds
$T_{S\ max}$ to T_L	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T_L)	217°C
-Time (t_L)	60-150 seconds
Peak Temperature (T_P)	260°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	8 minutes max.