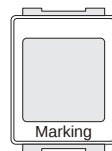
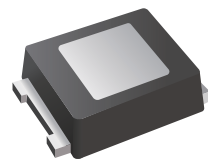




Features

- Top-side Cooling(TSC) Packaging technology
- Compact and Slim Packaging Solutions
- 1500W peak pulse power capability at 10/1000 μ s waveform, repetition rate (duty cycle): 0.01%
- Plastic package has underwriters laboratory flammability 94V-0
- Meets MSL level 1, per J-STD-020
- Typical I_R less than 1 μ A above 10V
- For surface mounted applications in order to optimize board space
- Low inductance
- Built-in strain relief
- Fast response time
- Glass passivated junction
- Excellent clamping capability
- Lead free in comply with EU RoHS 2011/65/EU directives



Mechanical Data

- Case: SMHL
- Terminal: Solder plated, 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)N	See the Table	7500PCS Tape&Reel	13 inches

Maximum Ratings and Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Rating	Symbol	Value	Unit
Peak pulse power dissipation at 10/1000 μ s waveform (Note1, Note2, Fig.1)	P_{PPM}	Minimum 1500	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)	$P_{M(AV)}$	6.5	W
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, (JEDEC Method) (Note3, Fig.6)	I_{FSM}	200	A
Operating junction and Storage Temperature Range.	T_J, T_{STG}	-55 to +150	$^{\circ}\text{C}$
Typical thermal resistance junction to case	$R_{\theta JC}$	4	$^{\circ}\text{C/W}$
Typical thermal resistance junction to ambient	$R_{\theta JA}$	48	$^{\circ}\text{C/W}$

- Notes: 1. Non-repetitive current pulse, per Fig.3 and derated above $T_A=25^{\circ}\text{C}$ per Fig.2.
2. Mounted on 0.2"×0.2" (5mm x 5mm) 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)N 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 (V)	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				
RHV5.0AN	RHV5.0CN	5N	5.0	6.40	7.00	10	9.2	163.0	600
RHV6.0AN	RHV6.0CN	6N	6.0	6.67	7.37	10	10.3	145.7	500
RHV6.5AN	RHV6.5CN	6N5	6.5	7.22	7.98	10	11.2	134.0	400
RHV7.0AN	RHV7.0CN	7N	7.0	7.78	8.60	10	12.0	125.0	200
RHV7.5AN	RHV7.5CN	7N5	7.5	8.33	9.21	1	12.9	116.3	100
RHV8.0AN	RHV8.0CN	8N	8.0	8.89	9.83	1	13.6	110.3	50
RHV8.5AN	RHV8.5CN	8N5	8.5	9.44	10.40	1	14.4	104.2	20
RHV9.0AN	RHV9.0CN	9N	9.0	10.00	11.10	1	15.4	97.4	10
RHV10AN	RHV10CN	10N	10.0	11.10	12.30	1	17.0	88.3	5
RHV11AN	RHV11CN	11N	11.0	12.20	13.50	1	18.2	82.5	1
RHV12AN	RHV12CN	12N	12.0	13.30	14.70	1	19.9	75.4	1
RHV13AN	RHV13CN	13N	13.0	14.40	15.90	1	21.5	69.8	1
RHV14AN	RHV14CN	14N	14.0	15.60	17.20	1	23.2	64.7	1
RHV15AN	RHV15CN	15N	15.0	16.70	18.50	1	24.4	61.5	1
RHV16AN	RHV16CN	16N	16.0	17.80	19.70	1	26.0	57.7	1
RHV17AN	RHV17CN	17N	17.0	18.90	20.90	1	27.6	54.4	1
RHV18AN	RHV18CN	18N	18.0	20.00	22.10	1	29.2	51.4	1
RHV20AN	RHV20CN	20N	20.0	22.20	24.50	1	32.4	46.3	1
RHV22AN	RHV22CN	22N	22.0	24.40	26.90	1	35.5	42.3	1
RHV24AN	RHV24CN	24N	24.0	26.70	29.50	1	38.9	38.6	1
RHV26AN	RHV26CN	26N	26.0	28.90	31.90	1	42.1	35.7	1
RHV28AN	RHV28CN	28N	28.0	31.10	34.40	1	45.4	33.1	1
RHV30AN	RHV30CN	30N	30.0	33.30	36.80	1	48.4	31.0	1
RHV33AN	RHV33CN	33N	33.0	36.70	40.60	1	53.3	28.2	1
RHV36AN	RHV36CN	36N	36.0	40.00	44.20	1	58.1	25.9	1
RHV40AN	RHV40CN	40N	40.0	44.40	49.10	1	64.5	23.3	1
RHV43AN	RHV43CN	43N	43.0	47.80	52.80	1	69.4	21.7	1
RHV45AN	RHV45CN	45N	45.0	50.00	55.30	1	72.7	20.6	1
RHV48AN	RHV48CN	48N	48.0	53.30	58.90	1	77.4	19.4	1
RHV51AN	RHV51CN	51N	51.0	56.70	62.70	1	82.4	18.2	1
RHV54AN	RHV54CN	54N	54.0	60.00	66.30	1	87.1	17.3	1
RHV58AN	RHV58CN	58N	58.0	64.40	71.20	1	93.6	16.1	1
RHV60AN	RHV60CN	60N	60.0	66.70	73.70	1	96.8	15.5	1
RHV64AN	RHV64CN	64N	64.0	71.10	78.60	1	103.0	14.6	1
RHV70AN	RHV70CN	70N	70.0	77.80	86.00	1	113.0	13.3	1
RHV75AN	RHV75CN	75N	75.0	83.30	92.10	1	121.0	12.4	1
RHV78AN	RHV78CN	78N	78.0	86.70	95.80	1	126.0	11.9	1
RHV85AN	RHV85CN	85N	85.0	94.40	104.00	1	137.0	11.0	1
RHV90AN	RHV90CN	90N	90.0	100.00	111.00	1	146.0	10.3	1
RHV100AN	RHV100CN	100N	100.0	111.00	123.00	1	162.0	9.3	1
RHV110AN	RHV110CN	110N	110.0	122.00	135.00	1	177.0	8.5	1
RHV120AN	RHV120CN	120N	120.0	133.00	147.00	1	193.0	7.8	1
RHV130AN	RHV130CN	130N	130.0	144.00	159.00	1	209.0	7.2	1
RHV150AN	RHV150CN	150N	150.0	167.00	185.00	1	243.0	6.2	1
RHV160AN	RHV160CN	160N	160.0	178.00	197.00	1	259.0	5.8	1
RHV170AN	RHV170CN	170N	170.0	189.00	209.00	1	275.0	5.5	1
RHV180AN	RHV180CN	180N	180.0	201.00	222.00	1	292.0	5.1	1
RHV190AN	RHV190CN	190N	190.0	211.00	233.00	1	308.0	4.8	1
RHV200AN	RHV200CN	200N	200.0	224.00	247.00	1	324.0	4.6	1
RHV210AN	RHV210CN	210N	210.0	237.00	263.00	1	340.0	4.4	1
RHV220AN	RHV220CN	220N	220.0	246.00	272.00	1	356.0	4.2	1
RHV250AN	RHV250CN	250N	250.0	279.00	309.00	1	405.0	3.7	1
RHV300AN	RHV300CN	300N	300.0	335.00	371.00	1	486.0	3.1	1
RHV350AN	RHV350CN	350N	350.0	391.00	432.00	1	567.0	2.6	1
RHV400AN	RHV400CN	400N	400.0	447.00	494.00	1	648.0	2.3	1
RHV440AN	RHV440CN	440N	440.0	492.00	543.00	1	713.0	2.1	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

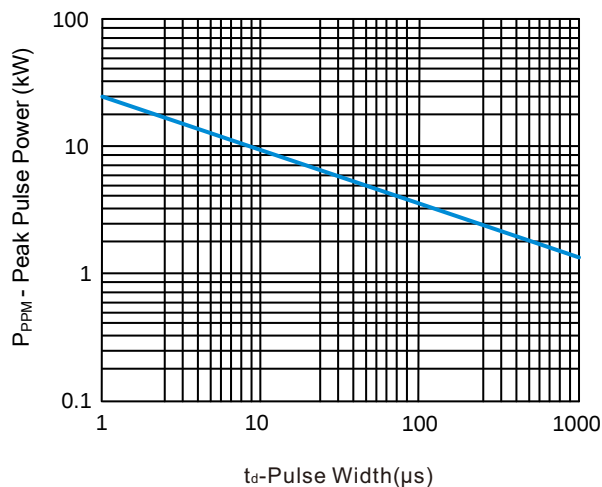


Fig.4 Typical Junction Capacitance

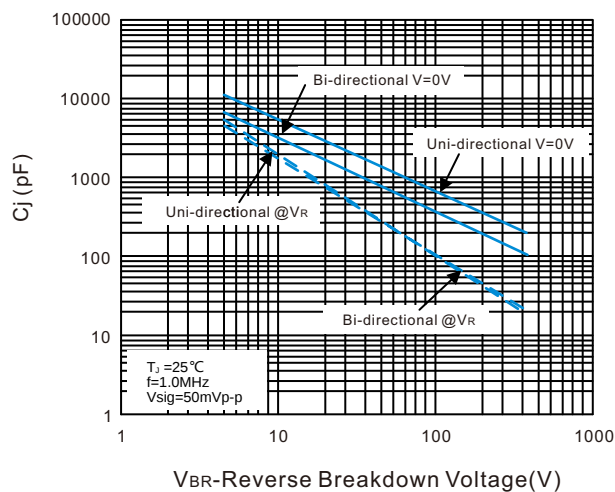


Fig.2 Pulse Derating Curve

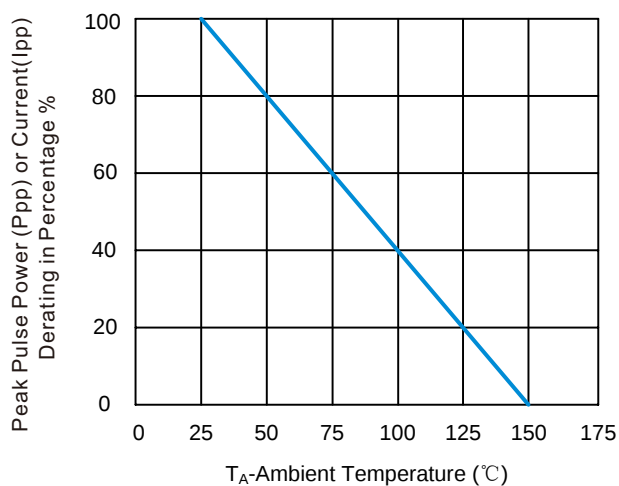


Fig.5 Steady State Power Dissipation Derating Curve

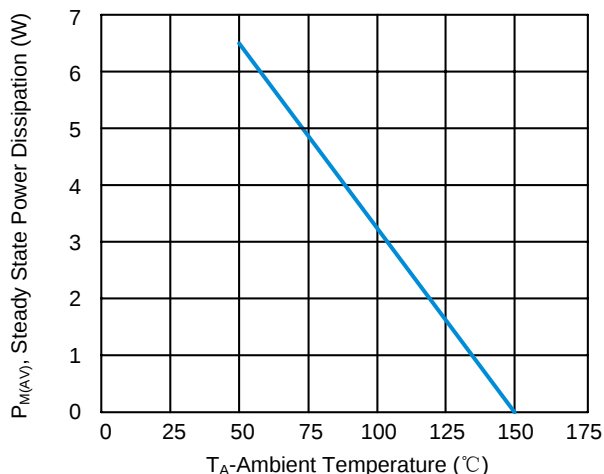


Fig.3 Pulse Waveform

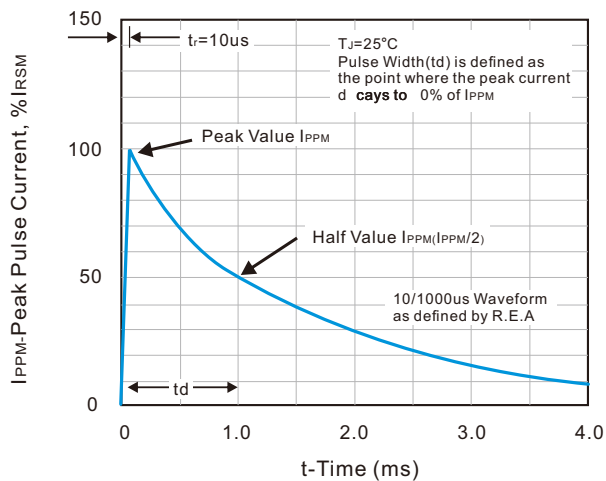
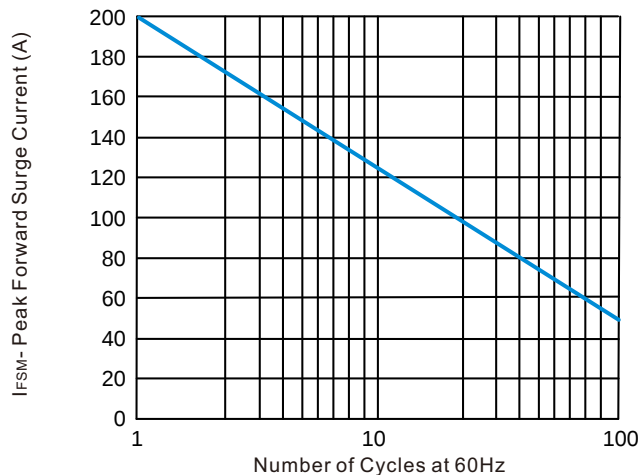
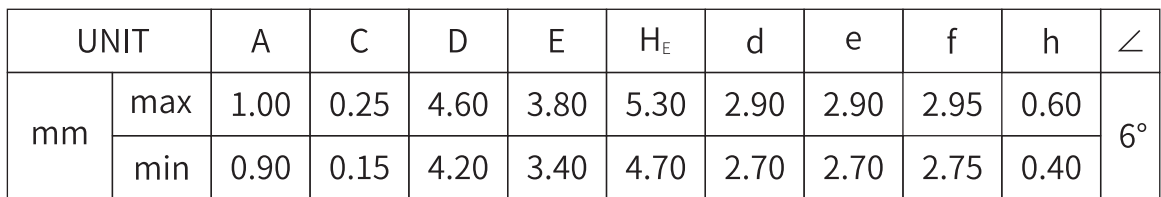


Fig.6 Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

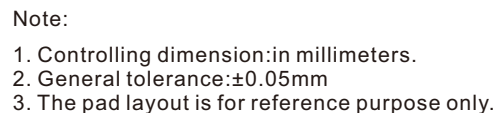


**SMHL**

Unit : mm

**SMHL**

Unit : mm

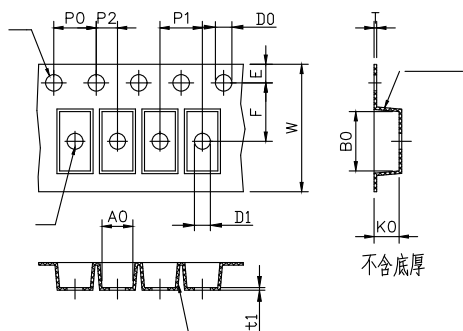




RHVxxA(C)N Series Transient Voltage Suppressors (TVS) Data Sheet

Carrier Tape Dimensions

Unit : mm

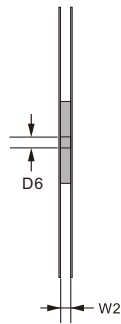
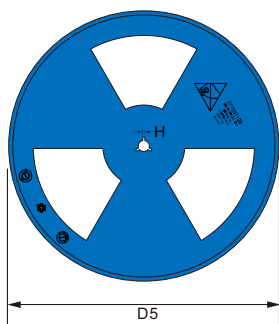


Symbol	Spec	Symbol	Spec
W	12.0±0.10	P2	2.00±0.10
E	1.75±0.10	t	0.25±0.03
F	5.50±0.10	t1	0.05+
D0	1.55±0.10	A0	3.85±0.10
D1	1.50±0.10	B0	5.30±0.10
P0	4.00±0.10	K0	1.20±0.10
P1	8.00±0.10		

Reel Dimensions

Unit : mm

13" Reel

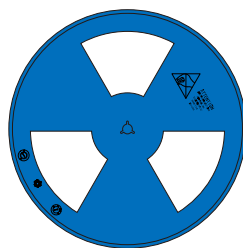


D5	Φ330.0±5.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±2.0
Quantity: 7500PCS	

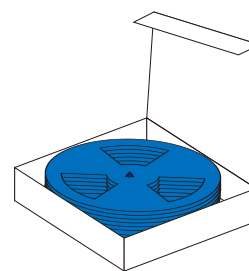
Packaging



7500PCS/Reel

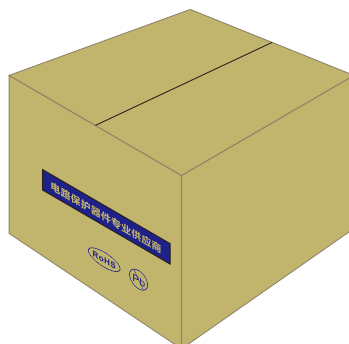


5Reel/Inner Box
37.5KPCS/Inner Box



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

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

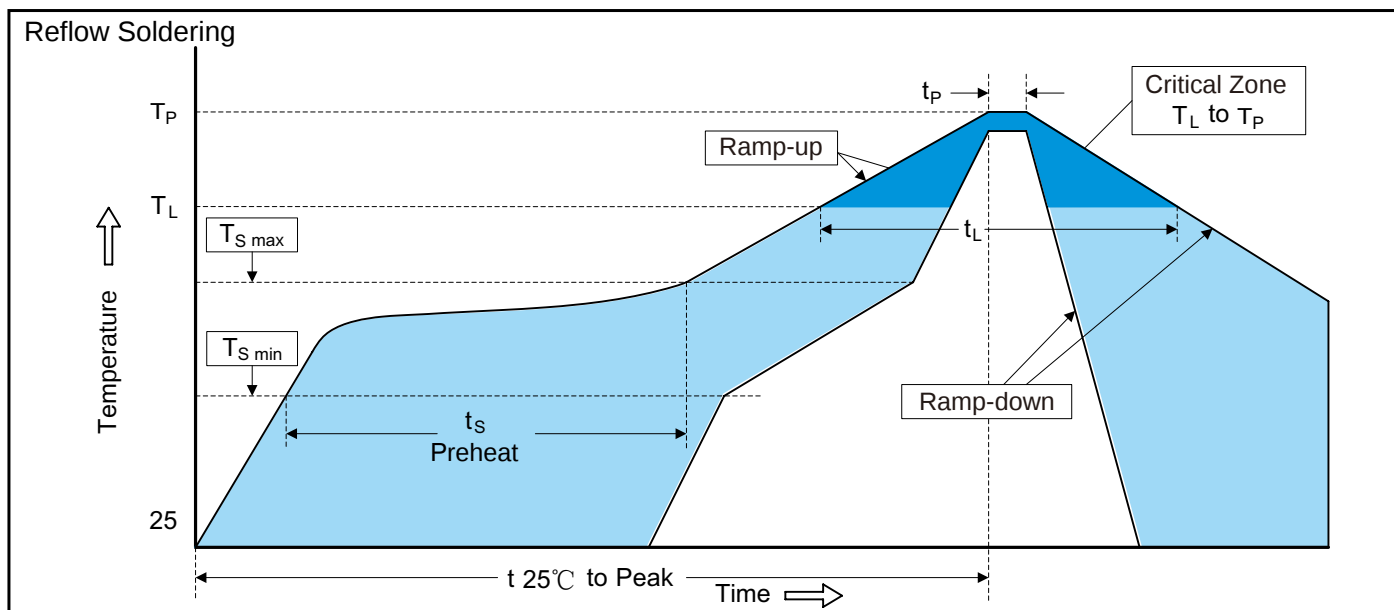


4 Boxes per carton
150KPCS per carton

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.