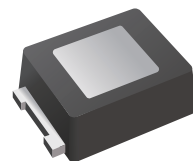




Features

- Top-side Cooling(TSC) Packaging technology
- Compact and Slim Packaging Solutions
- 400W 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
- Fast response time
- Excellent clamping capability
- Lead free in comply with EU RoHS 2011/65/EU directives



Mechanical Data

- Case: SMHM
- 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
- AC/DC power supply
- Vcc bus
- Low frequency signal transmission line (RS232, RS485, etc.)

Ordering Information

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

Maximum Ratings and Characteristics

Ratings at 25 $^{\circ}$ 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 400	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 $T_A=50^{\circ}$ C (Fig.5)	$P_{M(AV)}$	3.3	W
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load, (JEDEC Method) (Note3, Fig.6)	I_{FSM}	40	A
Operating junction and Storage Temperature Range.	T_J, T_{STG}	-55 to +150	$^{\circ}$ C
Typical thermal resistance junction to case	$R_{\theta JC}$	6	$^{\circ}$ C/W
Typical thermal resistance junction to ambient	$R_{\theta JA}$	51	$^{\circ}$ C/W

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

2. Mounted on 0.08"×0.08" (2mm x 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)G Series

Transient Voltage Suppressors (TVS) Data Sheet

Electrical Characteristics (T_A=25°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				
RHV5.0AG	RHV5.0CG	5G	5.0	6.40	7.00	10	9.2	43.5	800
RHV6.0AG	RHV6.0CG	6G	6.0	6.67	7.37	10	10.3	38.8	800
RHV6.5AG	RHV6.5CG	6G5	6.5	7.22	7.98	10	11.2	35.7	500
RHV7.0AG	RHV7.0CG	7G	7.0	7.78	8.60	10	12.0	33.3	200
RHV7.5AG	RHV7.5CG	7G5	7.5	8.33	9.21	1	12.9	31.0	100
RHV8.0AG	RHV8.0CG	8G	8.0	8.89	9.83	1	13.6	29.4	50
RHV8.5AG	RHV8.5CG	8G5	8.5	9.44	10.40	1	14.4	27.8	20
RHV9.0AG	RHV9.0CG	9G	9.0	10.0	11.10	1	15.4	26.0	10
RHV10AG	RHV10CG	10G	10.0	11.10	12.30	1	17.0	23.5	5
RHV11AG	RHV11CG	11G	11.0	12.20	13.50	1	18.2	22.0	1
RHV12AG	RHV12CG	12G	12.0	13.30	14.70	1	19.9	20.1	1
RHV13AG	RHV13CG	13G	13.0	14.40	15.90	1	21.5	18.6	1
RHV14AG	RHV14CG	14G	14.0	15.60	17.20	1	23.2	17.2	1
RHV15AG	RHV15CG	15G	15.0	16.70	18.50	1	24.4	16.4	1
RHV16AG	RHV16CG	16G	16.0	17.80	19.70	1	26.0	15.4	1
RHV17AG	RHV17CG	17G	17.0	18.90	20.90	1	27.6	14.5	1
RHV18AG	RHV18CG	18G	18.0	20.00	22.10	1	29.2	13.7	1
RHV20AG	RHV20CG	20G	20.0	22.20	24.50	1	32.4	12.3	1
RHV22AG	RHV22CG	22G	22.0	24.40	26.90	1	35.5	11.3	1
RHV24AG	RHV24CG	24G	24.0	26.70	29.50	1	38.9	10.3	1
RHV26AG	RHV26CG	26G	26.0	28.90	31.90	1	42.1	9.5	1
RHV28AG	RHV28CG	28G	28.0	31.10	34.40	1	45.4	8.8	1
RHV30AG	RHV30CG	30G	30.0	33.30	36.80	1	48.4	8.3	1
RHV33AG	RHV33CG	33G	33.0	36.70	40.60	1	53.3	7.5	1
RHV36AG	RHV36CG	36G	36.0	40.00	44.20	1	58.1	6.9	1
RHV40AG	RHV40CG	40G	40.0	44.40	49.10	1	64.5	6.2	1
RHV43AG	RHV43CG	43G	43.0	47.80	52.80	1	69.4	5.8	1
RHV45AG	RHV45CG	45G	45.0	50.00	55.30	1	72.7	5.5	1
RHV48AG	RHV48CG	48G	48.0	53.30	58.9	1	77.4	5.2	1
RHV51AG	RHV51CG	51G	51.0	56.70	62.70	1	82.4	4.9	1
RHV54AG	RHV54CG	54G	54.0	60.00	66.30	1	87.1	4.6	1
RHV58AG	RHV58CG	58G	58.0	64.40	71.20	1	93.6	4.3	1
RHV60AG	RHV60CG	60G	60.0	66.70	73.70	1	96.8	4.1	1
RHV64AG	RHV64CG	64G	64.0	71.10	78.60	1	103.0	3.9	1
RHV70AG	RHV70CG	70G	70.0	77.80	86.00	1	113.0	3.5	1
RHV75AG	RHV75CG	75G	75.0	83.30	92.10	1	121.0	3.3	1
RHV78AG	RHV78CG	78G	78.0	86.70	95.80	1	126.0	3.2	1
RHV85AG	RHV85CG	85G	85.0	94.40	104.00	1	137.0	2.9	1
RHV90AG	RHV90CG	90G	90.0	100.00	111.00	1	146.0	2.7	1
RHV100AG	RHV100CG	100G	100.0	111.00	123.00	1	162.0	2.5	1
RHV110AG	RHV110CG	110G	110.0	122.00	135.00	1	177.0	2.3	1
RHV120AG	RHV120CG	120G	120.0	133.00	147.00	1	193.0	2.1	1
RHV130AG	RHV130CG	130G	130.0	144.00	159.00	1	209.0	1.9	1
RHV150AG	RHV150CG	150G	150.0	167.00	185.00	1	243.0	1.6	1
RHV160AG	RHV160CG	160G	160.0	178.00	197.00	1	259.0	1.5	1
RHV170AG	RHV170CG	170G	170.0	189.00	209.00	1	275.0	1.5	1
RHV180AG	RHV180CG	180G	180.0	201.00	222.00	1	292.0	1.4	1
RHV190AG	RHV190CG	190G	190.0	211.00	233.00	1	308.0	1.3	1
RHV200AG	RHV200CG	200G	200.0	224.00	247.00	1	324.0	1.2	1
RHV210AG	RHV210CG	210G	210.0	237.00	263.00	1	340.0	1.2	1
RHV220AG	RHV220CG	220G	220.0	246.00	272.00	1	356.0	1.1	1
RHV250AG	RHV250CG	250G	250.0	279.00	309.00	1	405.0	1.0	1
RHV300AG	RHV300CG	300G	300.0	335.00	371.00	1	486.0	0.8	1
RHV350AG	RHV350CG	350G	350.0	391.00	432.00	1	567.0	0.7	1
RHV400AG	RHV400CG	400G	400.0	447.00	494.00	1	648.0	0.6	1
RHV440AG	RHV440CG	440G	440.0	492.00	543.00	1	713.0	0.6	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

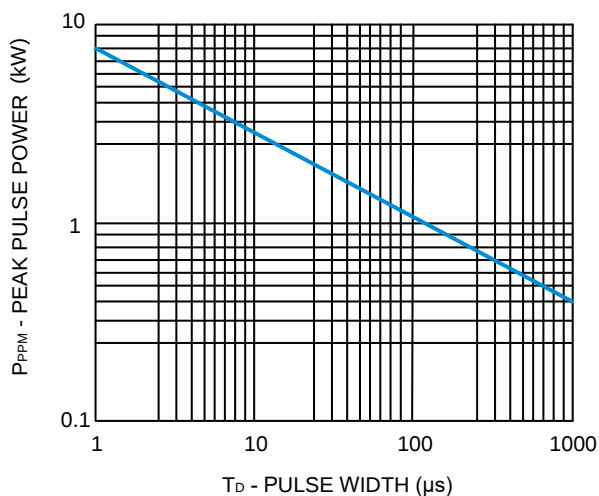


FIG.2 PULSE DERATING CURVE

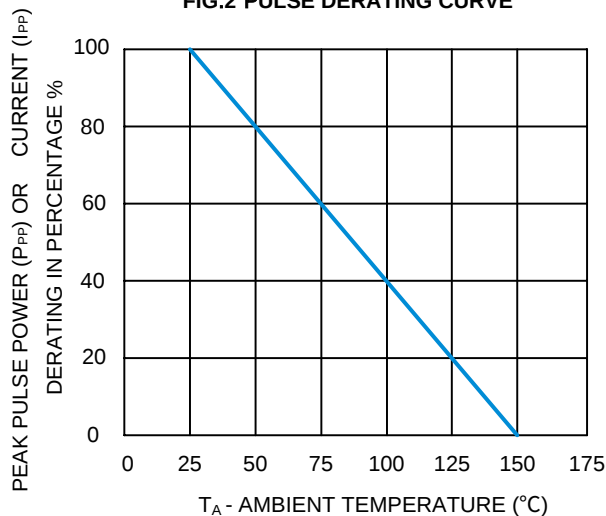


FIG.3 PULSE WAVEFORM

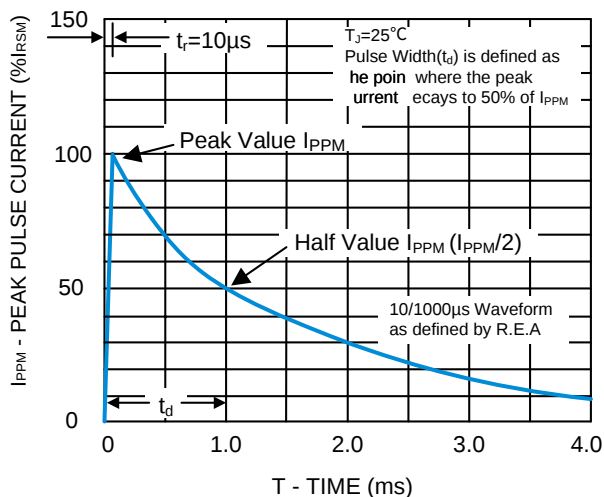


FIG.4 TYPICAL JUNCTION CAPACITANCE

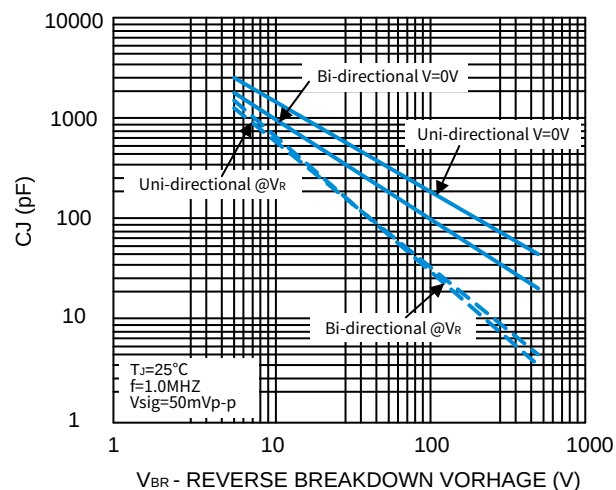


FIG.5 STEADY STATE POWER DISSIPATION DERATING CURVE

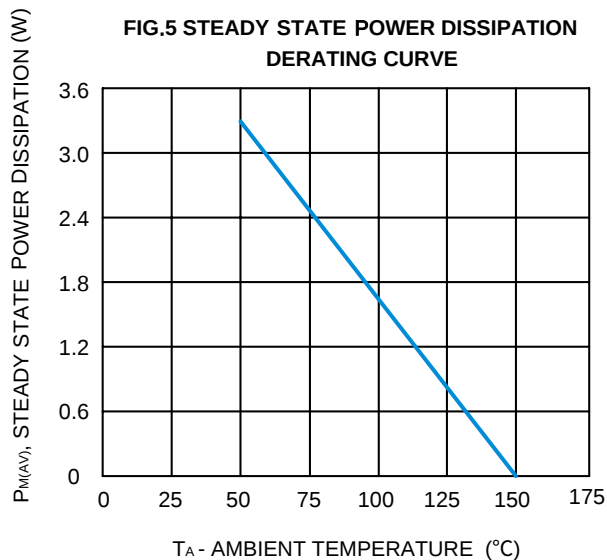
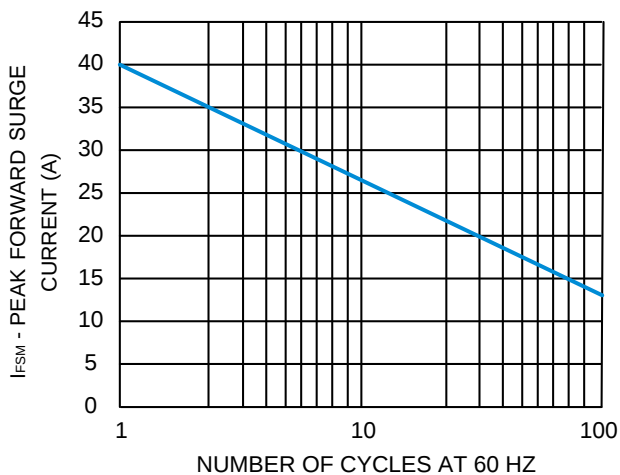


FIG.6 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT UNI-DIRECTIONAL ONLY





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	

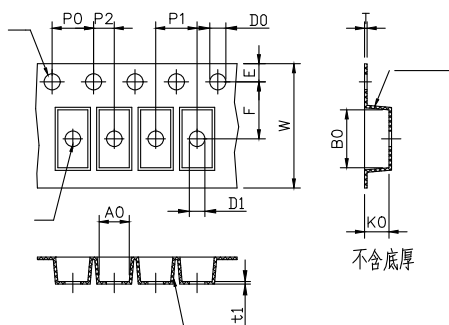
1. Controlling dimension:in millimeters.
2. General tolerance:±0.05mm.
3. The pad layout is for reference purpose only.



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

Carrier Tape Dimensions

Unit : mm

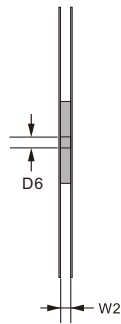
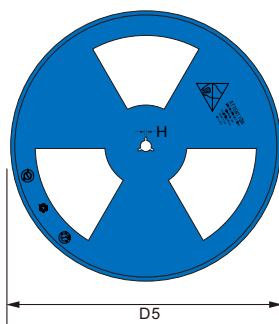


Symbol	Spec	Symbol	Spec
W	12.0±0.10	P2	2.00±0.10
E	1.75±0.10	t	0.25±0.03
F	5.50±0.10	t1	0.05+
D0	1.55±0.10	A0	3.05±0.10
D1	1.50±0.10	B0	4.15±0.10
P0	4.00±0.10	K0	1.15±0.10
P1	4.00±0.10		

Reel Dimensions

Unit : mm

13" Reel



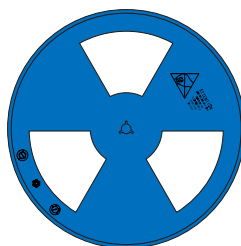
D5	Φ330.0±5.0
D6	Φ13.5±0.5
H	2.5±1.0
W2	12±2.0

Quantity: 15000PCS

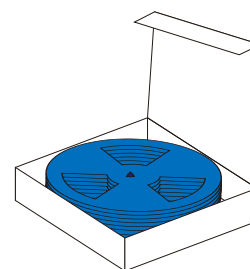
Packaging



15000 PCS/Reel

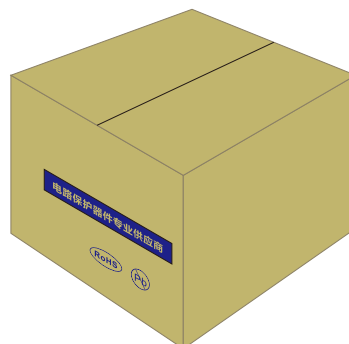


5 Reel/Inner Box
75 KPCS/Inner Box



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

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

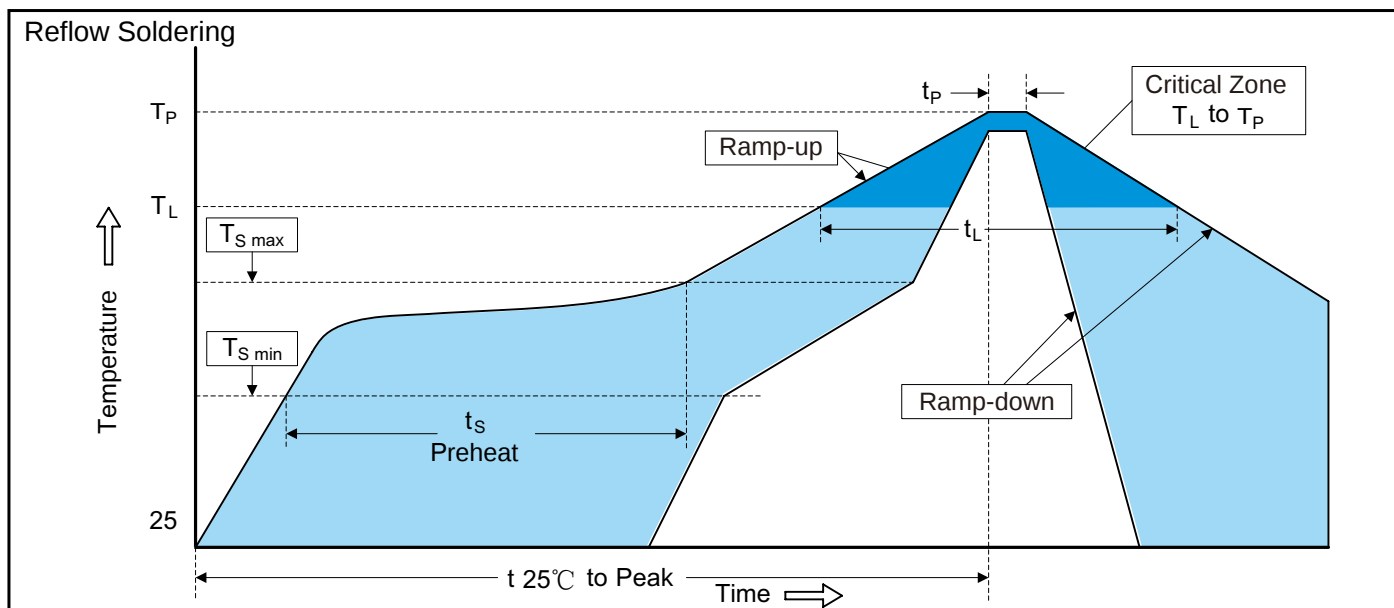


4 Boxes per carton
300 KPCS per carton

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.