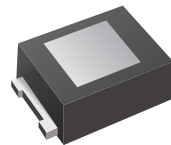




Features

- 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)J	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)J 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				
RHV5.0AJ	RHV5.0CJ	5J	5.0	6.40	7.00	10	9.2	65.3	800
RHV6.0AJ	RHV6.0CJ	6J	6.0	6.67	7.37	10	10.3	58.3	800
RHV6.5AJ	RHV6.5CJ	6J5	6.5	7.22	7.98	10	11.2	53.6	500
RHV7.0AJ	RHV7.0CJ	7J	7.0	7.78	8.60	10	12.0	50.0	200
RHV7.5AJ	RHV7.5CJ	7J5	7.5	8.33	9.21	1	12.9	46.6	100
RHV8.0AJ	RHV8.0CJ	8J	8.0	8.89	9.83	1	13.6	44.2	50
RHV8.5AJ	RHV8.5CJ	8J5	8.5	9.44	10.40	1	14.4	41.7	20
RHV9.0AJ	RHV9.0CJ	9J	9.0	10.00	11.10	1	15.4	39.0	10
RHV10AJ	RHV10CJ	10J	10.0	11.10	12.30	1	17.0	35.3	5
RHV11AJ	RHV11CJ	11J	11.0	12.20	13.50	1	18.2	33.0	1
RHV12AJ	RHV12CJ	12J	12.0	13.30	14.70	1	19.9	30.2	1
RHV13AJ	RHV13CJ	13J	13.0	14.40	15.90	1	21.5	28.0	1
RHV14AJ	RHV14CJ	14J	14.0	15.60	17.20	1	23.2	25.9	1
RHV15AJ	RHV15CJ	15J	15.0	16.70	18.50	1	24.4	24.6	1
RHV16AJ	RHV16CJ	16J	16.0	17.80	19.70	1	26.0	23.1	1
RHV17AJ	RHV17CJ	17J	17.0	18.90	20.90	1	27.6	21.8	1
RHV18AJ	RHV18CJ	18J	18.0	20.00	22.10	1	29.2	20.6	1
RHV20AJ	RHV20CJ	20J	20.0	22.20	24.50	1	32.4	18.6	1
RHV22AJ	RHV22CJ	22J	22.0	24.40	26.90	1	35.5	16.9	1
RHV24AJ	RHV24CJ	24J	24.0	26.70	29.50	1	38.9	15.5	1
RHV26AJ	RHV26CJ	26J	26.0	28.90	31.90	1	42.1	14.3	1
RHV28AJ	RHV28CJ	28J	28.0	31.10	34.40	1	45.4	13.3	1
RHV30AJ	RHV30CJ	30J	30.0	33.30	36.80	1	48.4	12.4	1
RHV33AJ	RHV33CJ	33J	33.0	36.70	40.60	1	53.3	11.3	1
RHV36AJ	RHV36CJ	36J	36.0	40.00	44.20	1	58.1	10.4	1
RHV40AJ	RHV40CJ	40J	40.0	44.40	49.10	1	64.5	9.3	1
RHV43AJ	RHV43CJ	43J	43.0	47.80	52.80	1	69.4	8.7	1
RHV45AJ	RHV45CJ	45J	45.0	50.00	55.30	1	72.7	8.3	1
RHV48AJ	RHV48CJ	48J	48.0	53.30	58.90	1	77.4	7.8	1
RHV51AJ	RHV51CJ	51J	51.0	56.70	62.70	1	82.4	7.3	1
RHV54AJ	RHV54CJ	54J	54.0	60.00	66.30	1	87.1	6.9	1
RHV58AJ	RHV58CJ	58J	58.0	64.40	71.20	1	93.6	6.5	1
RHV60AJ	RHV60CJ	60J	60.0	66.70	73.70	1	96.8	6.2	1
RHV64AJ	RHV64CJ	64J	64.0	71.10	78.60	1	103.0	5.9	1
RHV70AJ	RHV70CJ	70J	70.0	77.80	86.00	1	113.0	5.3	1
RHV75AJ	RHV75CJ	75J	75.0	83.30	92.10	1	121.0	5.0	1
RHV78AJ	RHV78CJ	78J	78.0	86.70	95.80	1	126.0	4.8	1
RHV85AJ	RHV85CJ	85J	85.0	94.40	104.00	1	137.0	4.4	1
RHV90AJ	RHV90CJ	90J	90.0	100.00	111.00	1	146.0	4.1	1
RHV100AJ	RHV100CJ	100J	100.0	111.00	123.00	1	162.0	3.7	1
RHV110AJ	RHV110CJ	110J	110.0	122.00	135.00	1	177.0	3.4	1
RHV120AJ	RHV120CJ	120J	120.0	133.00	147.00	1	193.0	3.1	1
RHV130AJ	RHV130CJ	130J	130.0	144.00	159.00	1	209.0	2.9	1
RHV150AJ	RHV150CJ	150J	150.0	167.00	185.00	1	243.0	2.5	1
RHV160AJ	RHV160CJ	160J	160.0	178.00	197.00	1	259.0	2.3	1
RHV170AJ	RHV170CJ	170J	170.0	189.00	209.00	1	275.0	2.2	1
RHV180AJ	RHV180CJ	180J	180.0	201.00	222.00	1	292.0	2.1	1
RHV190AJ	RHV190CJ	190J	190.0	211.00	233.00	1	308.0	2.0	1
RHV200AJ	RHV200CJ	200J	200.0	224.00	247.00	1	324.0	1.9	1
RHV210AJ	RHV210CJ	210J	210.0	237.00	263.00	1	340.0	1.8	1
RHV220AJ	RHV220CJ	220J	220.0	246.00	272.00	1	356.0	1.7	1
RHV250AJ	RHV250CJ	250J	250.0	279.00	309.00	1	405.0	1.5	1
RHV300AJ	RHV300CJ	300J	300.0	335.00	371.00	1	486.0	1.3	1
RHV350AJ	RHV350CJ	350J	350.0	391.00	432.00	1	567.0	1.1	1
RHV400AJ	RHV400CJ	400J	400.0	447.00	494.00	1	648.0	0.9	1
RHV440AJ	RHV440CJ	440J	440.0	492.00	543.00	1	713.0	0.9	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

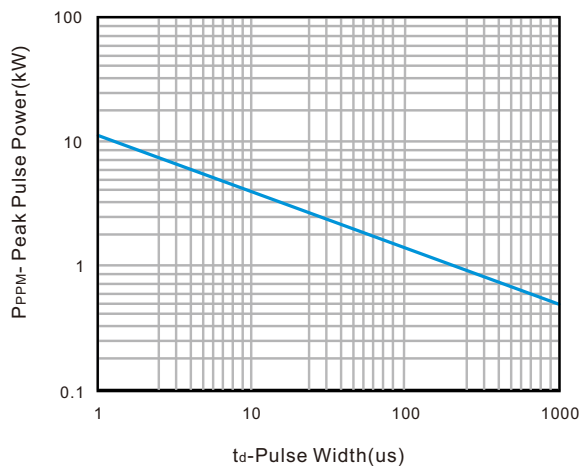


Fig.2 Pulse Derating Curve

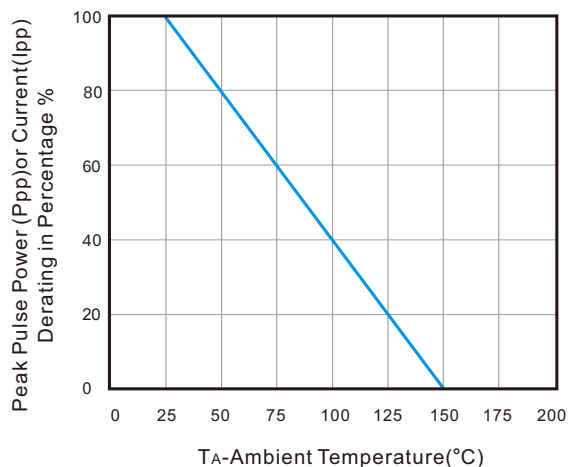


Fig.3 Pulse Waveform

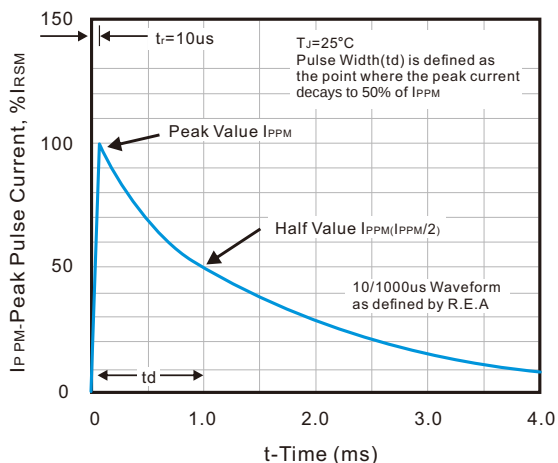


Fig.4 Typical Junction Capacitance

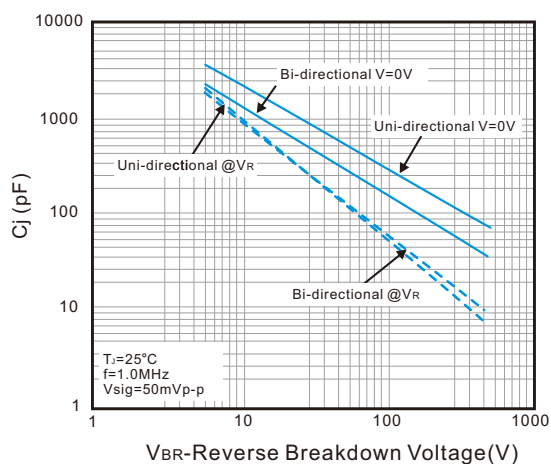


Fig.5 Steady State Power Dissipation Derating Curve

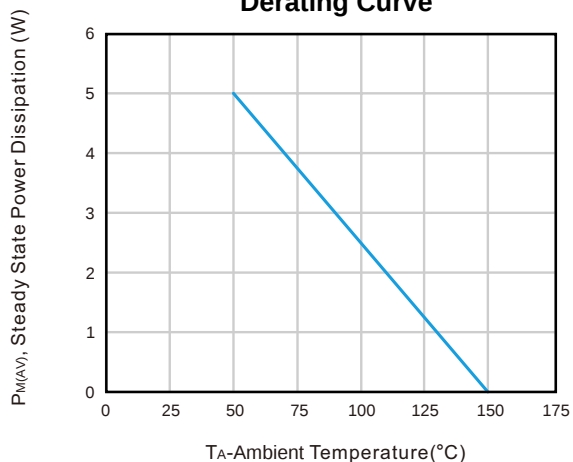
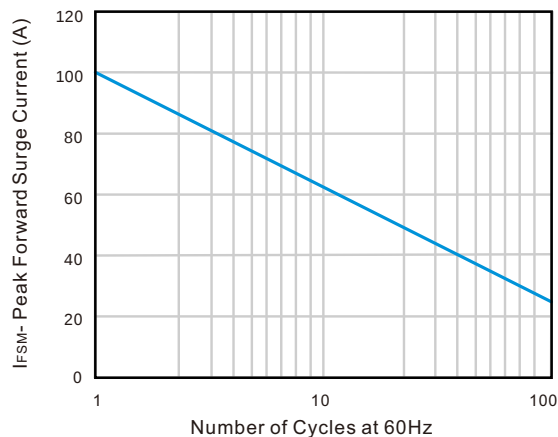
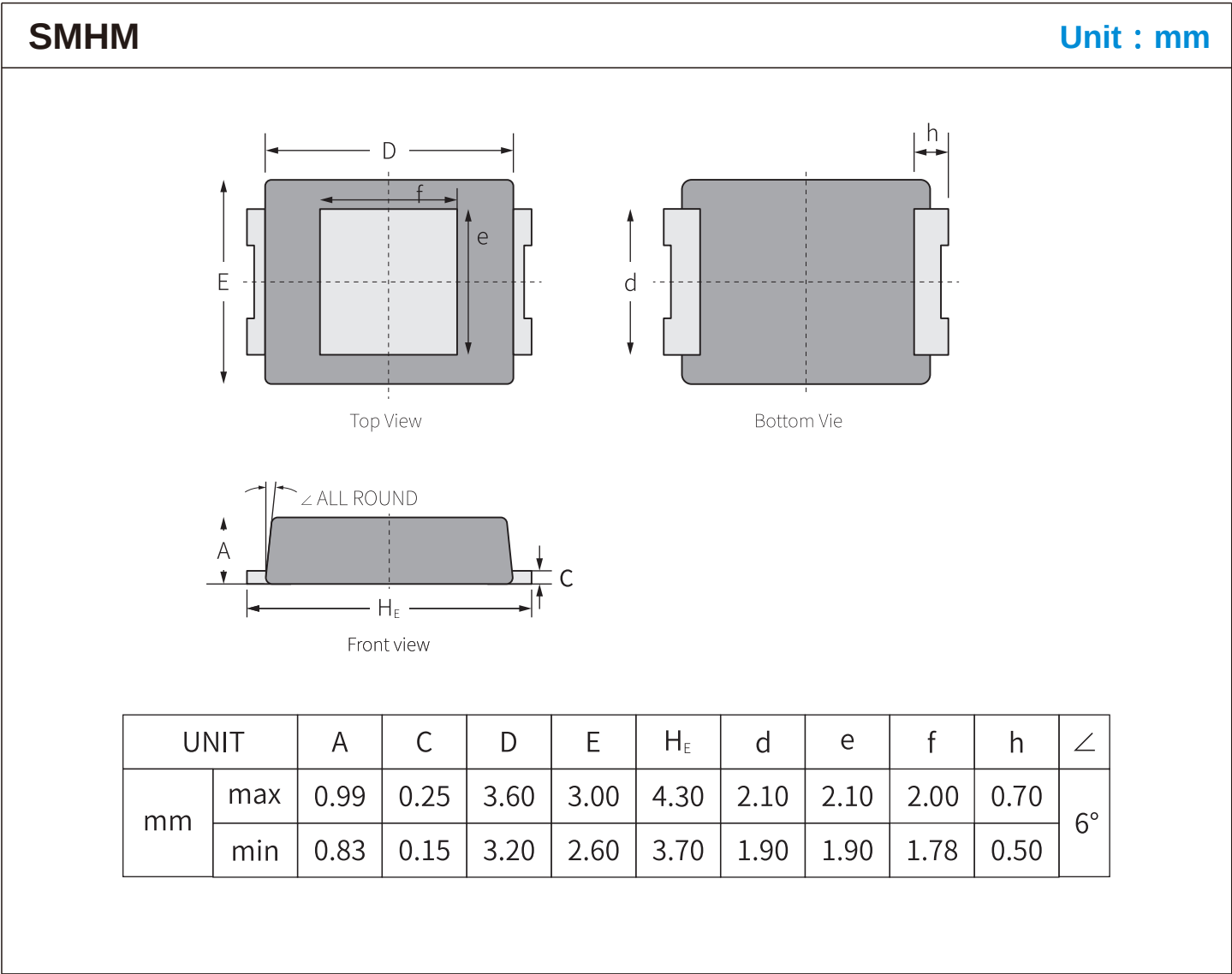


Fig.6 Maximum Non-Repetitive Forward Surge Current Uni-Directional Only

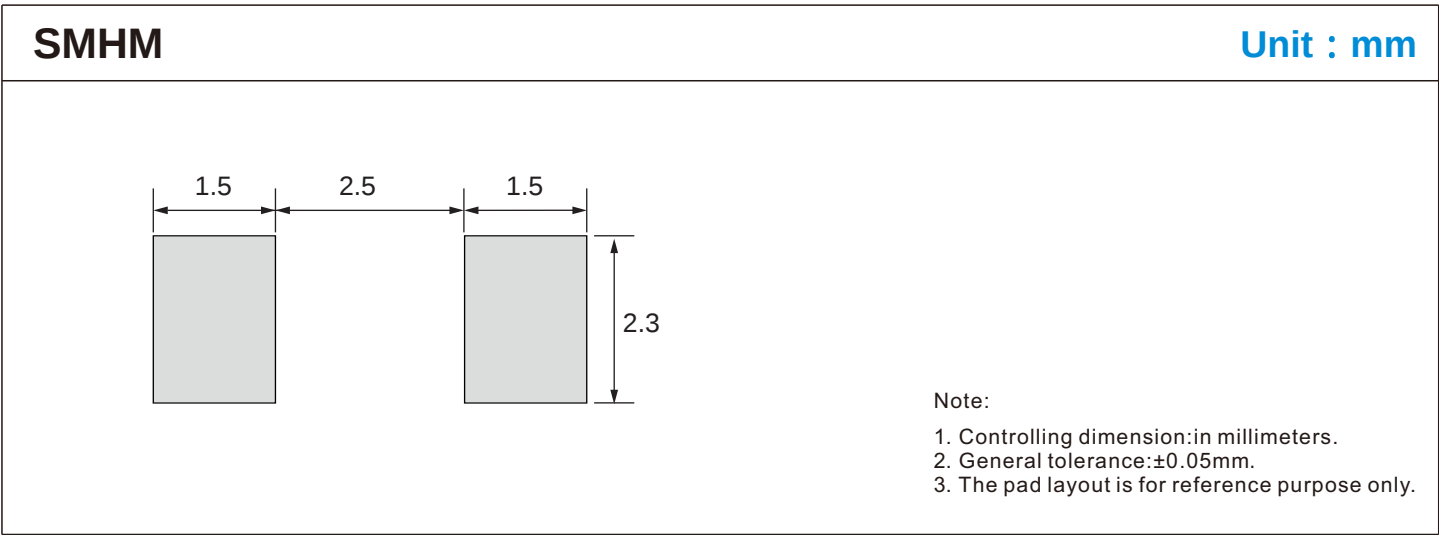




Package Outline



Suggested Pad Layout



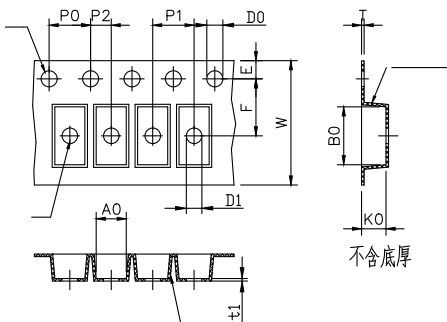


RHVxxA(C)J Series

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

SMHM

15000 PCS/Reel

5 Reel/Inner Box
75 KPCS/Inner Box

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

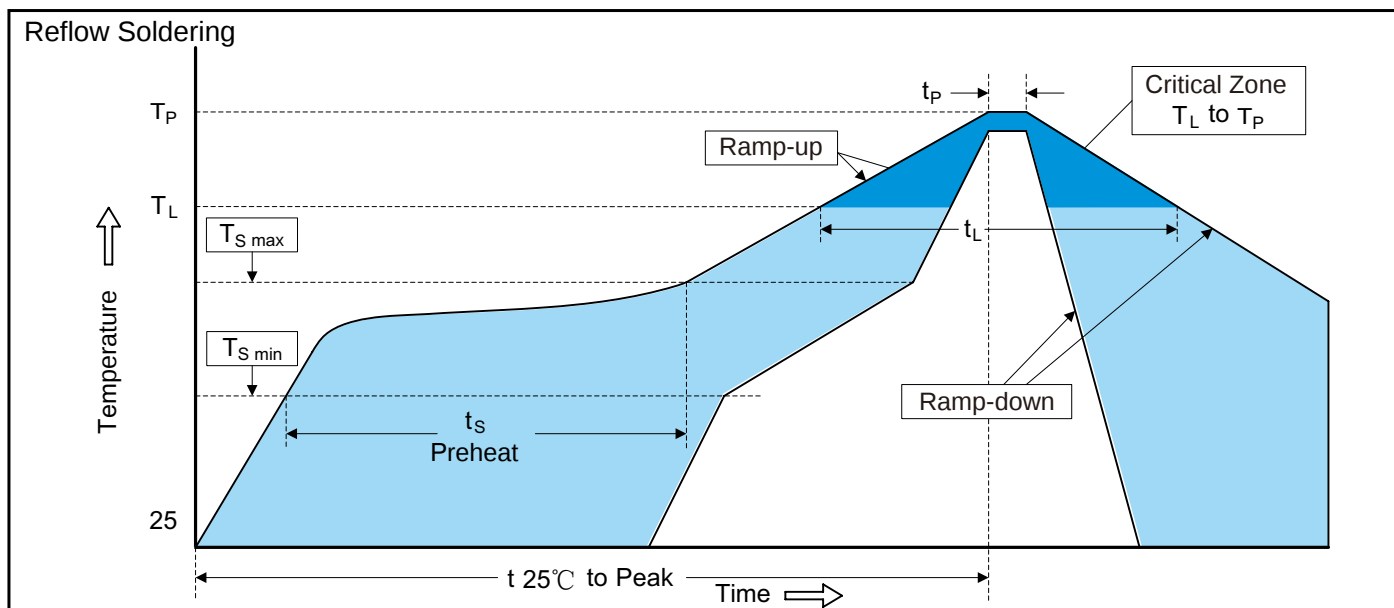
Dim(Unit:mm)
360mm*360mm*355mm

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.