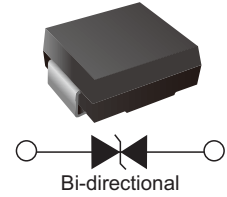
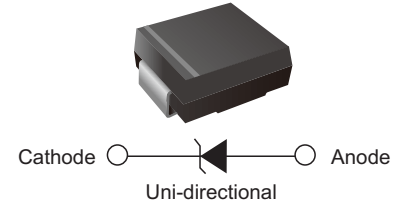


Transient Voltage Suppressors (TVS) Data Sheet

Features

- 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
- Low profile package
- Glass passivated junction
- Excellent clamping capability
- Lead free in comply with EU RoHS 2011/65/EU directives



Mechanical Data

- Case: SMC
- 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
- Standard Packaging: 16mm tape (EIA STD RS-481)

Applications

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

Ordering Information

Part Number	Shipping	Reel
LTVCxxA(C)N-TR3	3000PCS Tape&Reel	13 inchs

Maximum Ratings and Characteristics

Ratings at 25 $^{\circ}$ 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 $T_A=50^{\circ}$ 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	$^{\circ}$ C
Typical thermal resistance junction to lead	$R_{\theta JL}$	15	$^{\circ}$ C/W
Typical thermal resistance junction to ambient	$R_{\theta JA}$	75	$^{\circ}$ 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 8.0mm \times 8.0mm (0.03mm thick) 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.



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)
		Uni	Bi		Min	Max				
LTVC5.0AN	LTVC5.0CN	GDE or 5N	BDE or 5N	5.0	6.40	7.00	10	9.2	163.0	600
LTVC6.0AN	LTVC6.0CN	GDG or 6N	BDG or 6N	6.0	6.67	7.37	10	10.3	145.7	500
LTVC6.5AN	LTVC6.5CN	GDK or 6N5	BDK or 6N5	6.5	7.22	7.98	10	11.2	134.0	400
LTVC7.0AN	LTVC7.0CN	GDM or 7N	BDM or 7N	7.0	7.78	8.60	10	12.0	125.0	200
LTVC7.5AN	LTVC7.5CN	GDP or 7N5	BDP or 7N5	7.5	8.33	9.21	1	12.9	116.3	100
LTVC8.0AN	LTVC8.0CN	GDR or 8N	BDR or 8N	8.0	8.89	9.83	1	13.6	110.3	50
LTVC8.5AN	LTVC8.5CN	GDT or 8N5	BDT or 8N5	8.5	9.44	10.40	1	14.4	104.2	20
LTVC9.0AN	LTVC9.0CN	GDV or 9N	BDV or 9N	9.0	10.00	11.10	1	15.4	97.4	10
LTVC10AN	LTVC10CN	GDX or 10N	BDX or 10N	10.0	11.10	12.30	1	17.0	88.3	5
LTVC11AN	LTVC11CN	GDZ or 11N	BDZ or 11N	11.0	12.20	13.50	1	18.2	82.5	1
LTVC12AN	LTVC12CN	GEE or 12N	BEE or 12N	12.0	13.30	14.70	1	19.9	75.4	1
LTVC13AN	LTVC13CN	GEG or 13N	BEG or 13N	13.0	14.40	15.90	1	21.5	69.8	1
LTVC14AN	LTVC14CN	GEK or 14N	BEK or 14N	14.0	15.60	17.20	1	23.2	64.7	1
LTVC15AN	LTVC15CN	GEM or 15N	BEM or 15N	15.0	16.70	18.50	1	24.4	61.5	1
LTVC16AN	LTVC16CN	GEP or 16N	BEP or 16N	16.0	17.80	19.70	1	26.0	57.7	1
LTVC17AN	LTVC17CN	GER or 17N	BER or 17N	17.0	18.90	20.90	1	27.6	54.4	1
LTVC18AN	LTVC18CN	GET or 18N	BET or 18N	18.0	20.00	22.10	1	29.2	51.4	1
LTVC20AN	LTVC20CN	GEV or 20N	BEV or 20N	20.0	22.20	24.50	1	32.4	46.3	1
LTVC22AN	LTVC22CN	GEX or 22N	BEX or 22N	22.0	24.40	26.90	1	35.5	42.3	1
LTVC24AN	LTVC24CN	GEZ or 24N	BEZ or 24N	24.0	26.70	29.50	1	38.9	38.6	1
LTVC26AN	LTVC26CN	GFE or 26N	BFE or 26N	26.0	28.90	31.90	1	42.1	35.7	1
LTVC28AN	LTVC28CN	GFG or 28N	BFG or 28N	28.0	31.10	34.40	1	45.4	33.1	1
LTVC30AN	LTVC30CN	GFK or 30N	BFK or 30N	30.0	33.30	36.80	1	48.4	31.0	1
LTVC33AN	LTVC33CN	GFM or 33N	BFM or 33N	33.0	36.70	40.60	1	53.3	28.2	1
LTVC36AN	LTVC36CN	GFP or 36N	BFP or 36N	36.0	40.00	44.20	1	58.1	25.9	1
LTVC40AN	LTVC40CN	GFR or 40N	BFR or 40N	40.0	44.40	49.10	1	64.5	23.3	1
LTVC43AN	LTVC43CN	GFT or 43N	BFT or 43N	43.0	47.80	52.80	1	69.4	21.7	1
LTVC45AN	LTVC45CN	GFV or 45N	BFV or 45N	45.0	50.00	55.30	1	72.7	20.6	1
LTVC48AN	LTVC48CN	GVX or 48N	BFX or 48N	48.0	53.30	58.90	1	77.4	19.4	1
LTVC51AN	LTVC51CN	GFZ or 51N	BFZ or 51N	51.0	56.70	62.70	1	82.4	18.2	1
LTVC54AN	LTVC54CN	GGE or 54N	BGE or 54N	54.0	60.00	66.30	1	87.1	17.3	1
LTVC58AN	LTVC58CN	GGG or 58N	BGG or 58N	58.0	64.40	71.20	1	93.6	16.1	1
LTVC60AN	LTVC60CN	GGK or 60N	BGK or 60N	60.0	66.70	73.70	1	96.8	15.5	1
LTVC64AN	LTVC64CN	GGM or 64N	BGM or 64N	64.0	71.10	78.60	1	103.0	14.6	1
LTVC70AN	LTVC70CN	GGP or 70N	BGP or 70N	70.0	77.80	86.00	1	113.0	13.3	1
LTVC75AN	LTVC75CN	GGR or 75N	BGR or 75N	75.0	83.30	92.10	1	121.0	12.4	1
LTVC78AN	LTVC78CN	GGT or 78N	BGT or 78N	78.0	86.70	95.80	1	126.0	11.9	1
LTVC85AN	LTVC85CN	GGV or 85N	BGV or 85N	85.0	94.40	104.00	1	137.0	11.0	1
LTVC90AN	LTVC90CN	GGX or 90N	BGX or 90N	90.0	100.00	111.00	1	146.0	10.3	1
LTVC100AN	LTVC100CN	GGZ or 100N	BGZ or 100N	100.0	111.00	123.00	1	162.0	9.3	1
LTVC110AN	LTVC110CN	GHE or 110N	BHE or 110N	110.0	122.00	135.00	1	177.0	8.5	1
LTVC120AN	LTVC120CN	GHG or 120N	BHG or 120N	120.0	133.00	147.00	1	193.0	7.8	1
LTVC130AN	LTVC130CN	GHK or 130N	BHK or 130N	130.0	144.00	159.00	1	209.0	7.2	1
LTVC150AN	LTVC150CN	GHM or 150N	BHM or 150N	150.0	167.00	185.00	1	243.0	6.2	1
LTVC160AN	LTVC160CN	GHP or 160N	BHP or 160N	160.0	178.00	197.00	1	259.0	5.8	1
LTVC170AN	LTVC170CN	GHR or 170N	BHR or 170N	170.0	189.00	209.00	1	275.0	5.5	1
LTVC180AN	LTVC180CN	GHT or 180N	BHT or 180N	180.0	201.00	222.00	1	292.0	5.1	1
LTVC190AN	LTVC190CN	GHU or 190N	BHU or 190N	190.0	211.00	233.00	1	308.0	4.8	1
LTVC200AN	LTVC200CN	GHV or 200N	BHV or 200N	200.0	224.00	247.00	1	324.0	4.6	1
LTVC210AN	LTVC210CN	GHW or 210N	BHW or 210N	210.0	237.00	263.00	1	340.0	4.4	1
LTVC220AN	LTVC220CN	GHX or 220N	BHX or 220N	220.0	246.00	272.00	1	356.0	4.2	1
LTVC250AN	LTVC250CN	GHZ or 250N	BHZ or 250N	250.0	279.00	309.00	1	405.0	3.7	1
LTVC300AN	LTVC300CN	GJE or 300N	BJE or 300N	300.0	335.00	371.00	1	486.0	3.1	1
LTVC350AN	LTVC350CN	GJG or 350N	BJG or 350N	350.0	391.00	432.00	1	567.0	2.6	1
LTVC400AN	LTVC400CN	GJK or 400N	BJK or 400N	400.0	447.00	494.00	1	648.0	2.3	1
LTVC440AN	LTVC440CN	GJM or 440N	BJM or 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

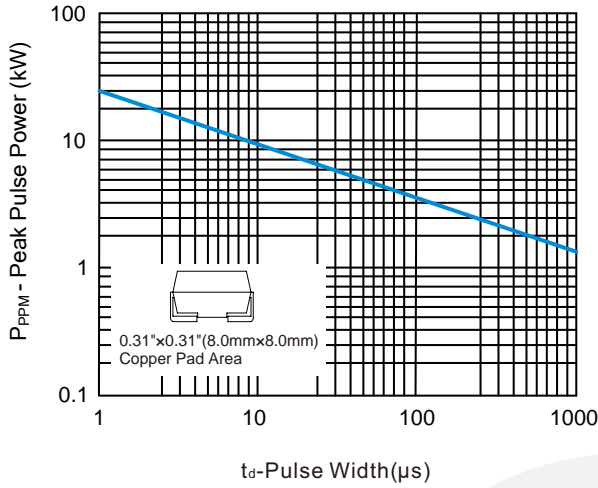


Fig.4 Typical Junction Capacitance

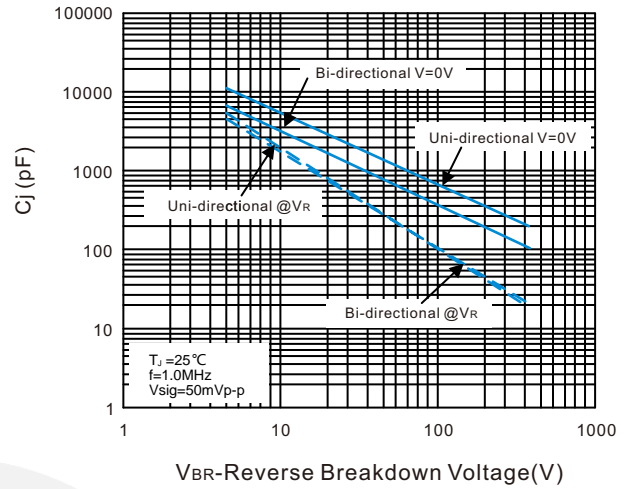


Fig.2 Pulse Derating Curve

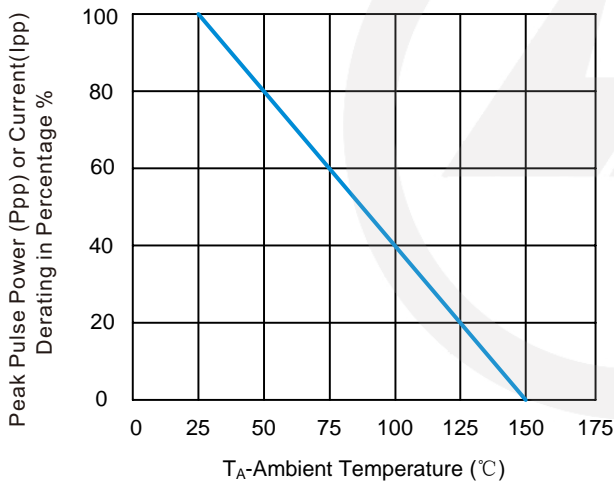


Fig.5 Steady State Power Dissipation Derating Curve

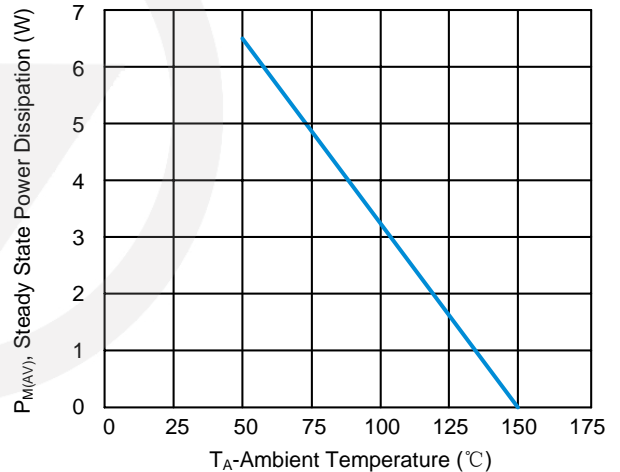


Fig.3 Pulse Waveform

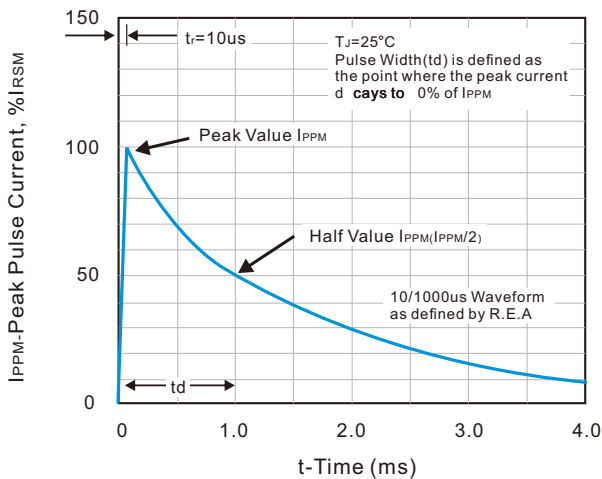
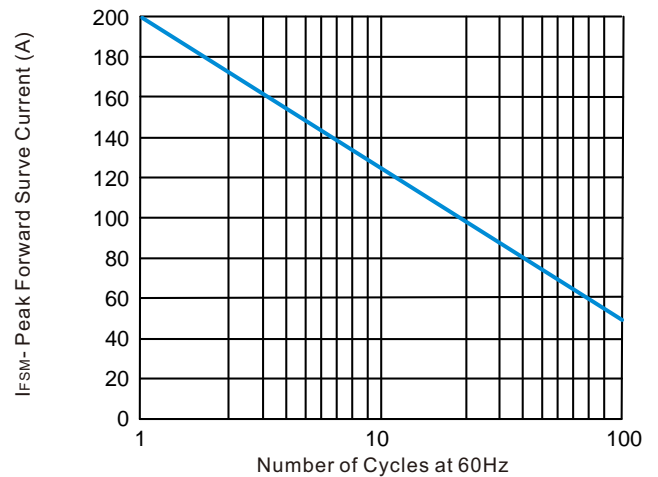
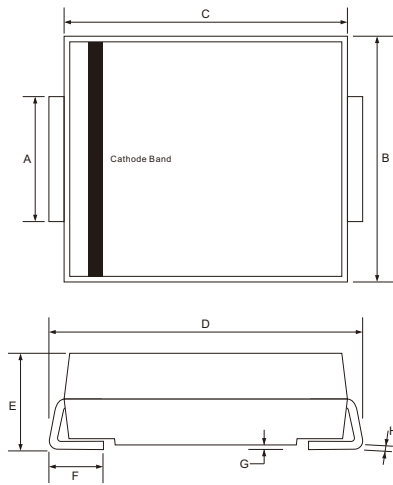


Fig.6 Maximum Non-Repetitive Forward Surge Current Uni-Directional Only



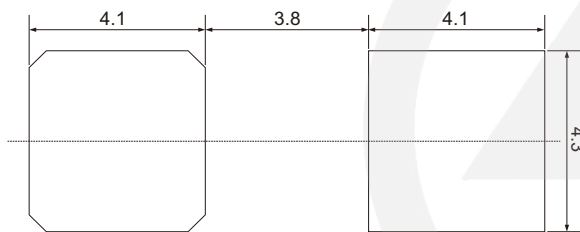
SMC Package Outline



Unit: mm

SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	2.75	3.27
B	5.59	6.22
C	6.50	7.11
D	7.60	8.13
E	1.99	2.80
F	0.76	1.60
G	0.05	0.31
H	0.10	0.31

SMC Suggested Pad Layout

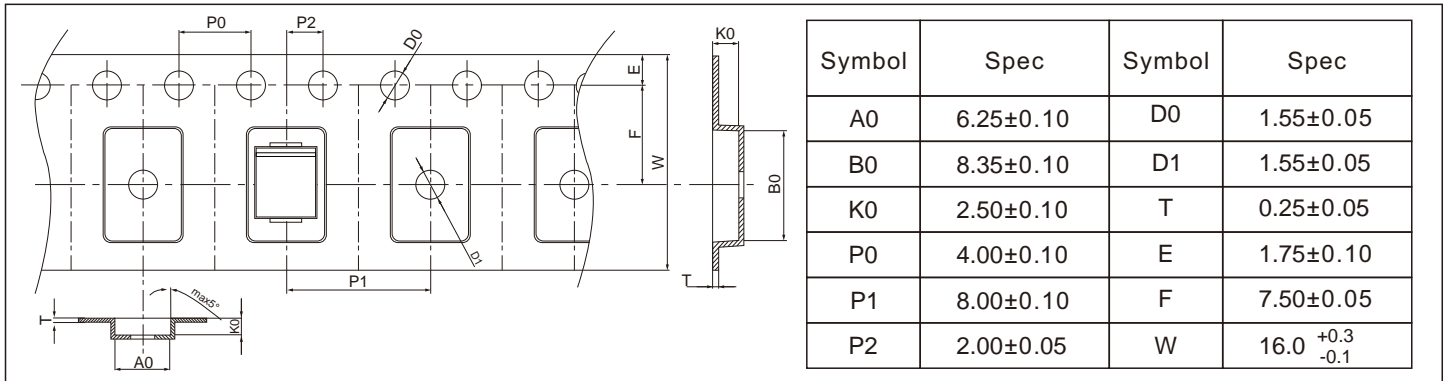


Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$
3. The pad layout is for reference purpose only.

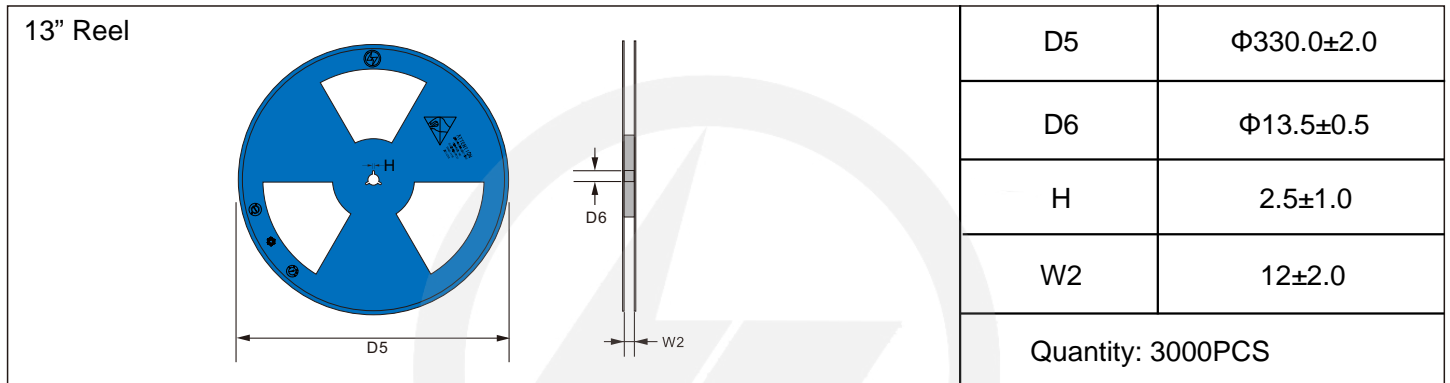
Carrier Tape Dimensions

Unit : mm

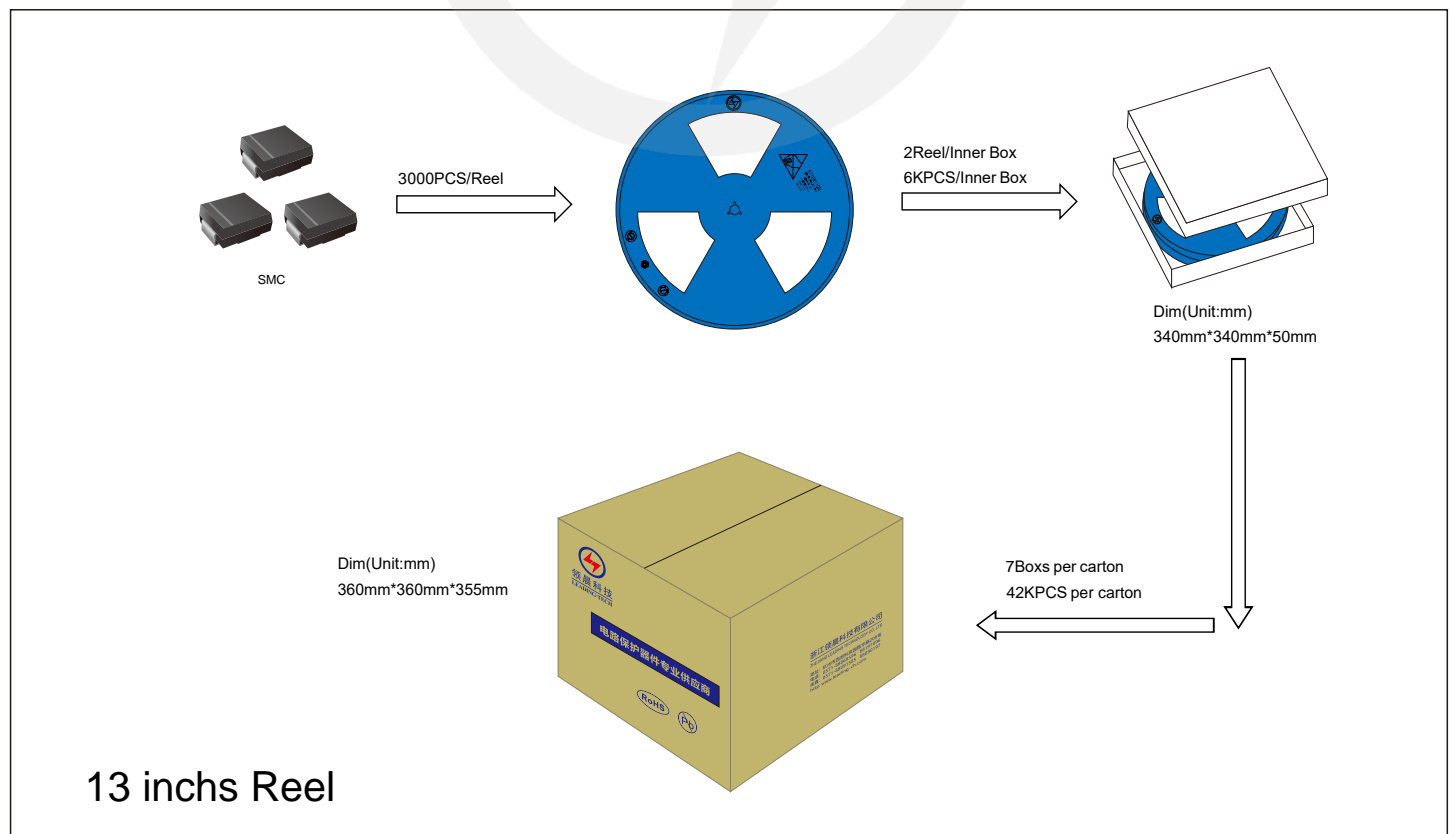


Reel Dimensions

Unit : mm



Packaging





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.

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Version Update information

Series NO.	Enactment/Revision Date	Effective Date	Version	Revision content	Revision Reason	Revision Person	Note
01	2024.3.18	2024.3.18	3.0	New File	/	Ding	
02	2025.06.11	2025.06.11	3.1	Update packaging information	/	Ding	
03	2025.08.26	2025.08.26	3.2	Change in packaging quantity	/	Ding	