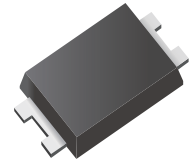


## Transient Voltage Suppressors (TVS) Data Sheet

### Features

- For surface mounted applications in order to optimize board space
- Low profile package
- Glass passivated junction
- Low inductance
- Plastic package has Underwriters Laboratory Flammability
- Lead free in comply with EU RoHS 2011/65/EU directives



### Mechanical Data

- Case: PDFN3620
- Terminal: Leads solderable per MIL-STD-750 Method 2026
- Polarity: For uni-directional types the band denotes cathode end, no marking on bi-directional types

### Ordering Information

Part Number	Marking	Shipping	Reel
LTVxxA(C)D	See the Table	12000PCS Tape&Reel	13 inches

### Maximum Ratings and Characteristics

Ratings at 25°C ambient temperature unless otherwise specified.

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on TA=25°C (Note 1,2,5, Fig1)	$P_{PPM}$	Minimum 200	W
Peak Forward Surge Current (Note 3)	$I_{FSM}$ (UNI)	20	A
Peak Pulse Current on 10/1000 us waveform (Note 1) Fig 2	$I_{PPM}$	see Table 1	A
Steady State Power Dissipation (Note 4)	$P_{M(AV)}$	1	W
Operating Junction and Storage Range	$T_J, T_{STG}$	-55 to +150	°C
Typical Thermal Resistance	$R_{\theta JA}$	180	°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 5mm<sup>2</sup> copper pads to each terminal.

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

(4) lead temperature at  $T_L=75^\circ\text{C}$ .

(5) Peak pulse powe. waveform is  $t_p=10/1000\text{us}$ .

(6) A transient suppressor is selected according to the working peak reverse voltage( $V_{RWM}$ ), Which Should be equal to or greater than the DC or continuous peak operating voltage level.



**Electrical Characteristics (TA=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 $I_R$ @ $V_R$ ( $\mu$ A)
				Min	Max				
LTV5.0AD	LTV5.0CD	5D	5	6.4	7	10	9.2	21.7	400
LTV6.0AD	LTV6.0CD	6D	6	6.67	7.37	10	10.3	19.4	400
LTV6.5AD	LTV6.5CD	6D5	6.5	7.22	7.98	10	11.2	17.9	250
LTV7.0AD	LTV7.0CD	7D	7	7.78	8.6	10	12	16.7	100
LTV7.5AD	LTV7.5CD	7D5	7.5	8.33	9.21	1	12.9	15.5	50
LTV8.0AD	LTV8.0CD	8D	8	8.89	9.83	1	13.6	14.7	25
LTV8.5AD	LTV8.5CD	8D5	8.5	9.44	10.4	1	14.4	13.9	10
LTV9.0AD	LTV9.0CD	9D	9	10	11.1	1	15.4	13.0	5
LTV10AD	LTV10CD	10D	10	11.1	12.3	1	17	11.8	2.5
LTV11AD	LTV11CD	11D	11	12.2	13.5	1	18.2	11.0	2.5
LTV12AD	LTV12CD	12D	12	13.3	14.7	1	19.9	10.1	2.5
LTV13AD	LTV13CD	13D	13	14.4	15.9	1	21.5	9.3	1
LTV14AD	LTV14CD	14D	14	15.6	17.2	1	23.2	8.6	1
LTV15AD	LTV15CD	15D	15	16.7	18.5	1	24.4	8.2	1
LTV16AD	LTV16CD	16D	16	17.8	19.7	1	26	7.7	1
LTV17AD	LTV17CD	17D	17	18.9	20.9	1	27.6	7.2	1
LTV18AD	LTV18CD	18D	18	20	22.1	1	29.2	6.8	1
LTV20AD	LTV20CD	20D	20	22.2	24.5	1	32.4	6.2	1
LTV22AD	LTV22CD	22D	22	24.4	26.9	1	35.5	5.6	1
LTV24AD	LTV24CD	24D	24	26.7	29.5	1	38.9	5.1	1
LTV26AD	LTV26CD	26D	26	28.9	31.9	1	42.1	4.8	1
LTV28AD	LTV28CD	28D	28	31.1	34.4	1	45.4	4.4	1
LTV30AD	LTV30CD	30D	30	33.3	36.8	1	48.4	4.1	1
LTV33AD	LTV33CD	33D	33	36.7	40.6	1	53.3	3.8	1
LTV36AD	LTV36CD	36D	36	40	44.2	1	58.1	3.4	1
LTV40AD	LTV40CD	40D	40	44.4	49.1	1	64.5	3.1	1
LTV43AD	LTV43CD	43D	43	47.8	52.8	1	69.4	2.9	1
LTV45AD	LTV45CD	45D	45	50	55.3	1	72.7	2.8	1
LTV48AD	LTV48CD	48D	48	53.3	58.9	1	77.4	2.6	1
LTV51AD	LTV51CD	51D	51	56.7	62.7	1	82.4	2.4	1
LTV54AD	LTV54CD	54D	54	60	66.3	1	87.1	2.3	1
LTV58AD	LTV58CD	58D	58	64.4	71.2	1	93.6	2.1	1
LTV60AD	LTV60CD	60D	60	66.7	73.7	1	96.8	1.8	1
LTV64AD	LTV64CD	64D	64	71.1	78.6	1	103	1.7	1
LTV70AD	LTV70CD	70D	70	77.8	86	1	113	1.5	1
LTV75AD	LTV75CD	75D	75	83.3	92.1	1	121	1.4	1
LTV78AD	LTV78CD	78D	78	86.7	95.8	1	126	1.4	1
LTV85AD	LTV85CD	85D	85	94.4	104	1	137	1.3	1
LTV90AD	LTV90CD	90D	90	100	111	1	146	1.2	1
LTV100AD	LTV100CD	100D	100	111	123	1	162	1.1	1
LTV110AD	LTV110CD	110D	110	122	135	1	177	1.0	1
LTV120AD	LTV120CD	120D	120	133	147	1	193	0.9	1
LTV130AD	LTV130CD	130D	130	144	159	1	209	0.8	1
LTV150AD	LTV150CD	150D	150	167	185	1	243	0.82	1
LTV160AD	LTV160CD	160D	160	178	197	1	259	0.7	1
LTV170AD	LTV170CD	170D	170	189	209	1	275	0.73	1



Characteristics Curve

FIG.1 PEAK PULSE POWER RATING CURVE

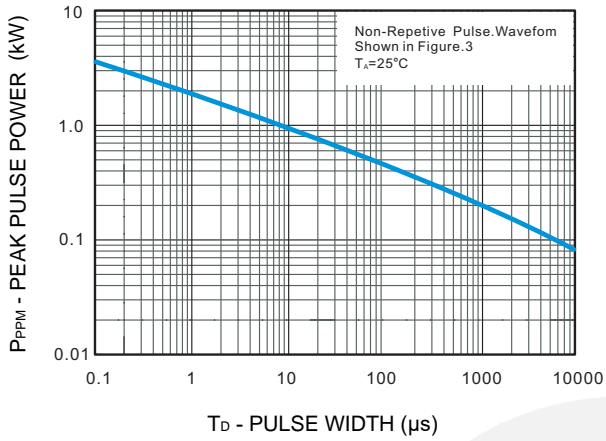


FIG.2 FORWARD CURRENT DERATING CURVE

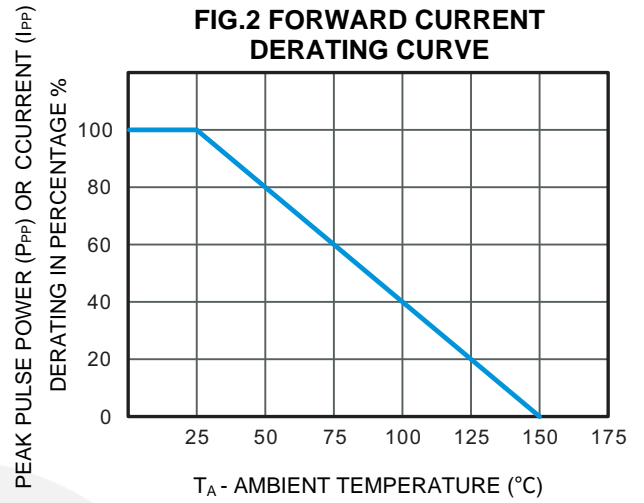


FIG.3 PULSE WAVEFORM

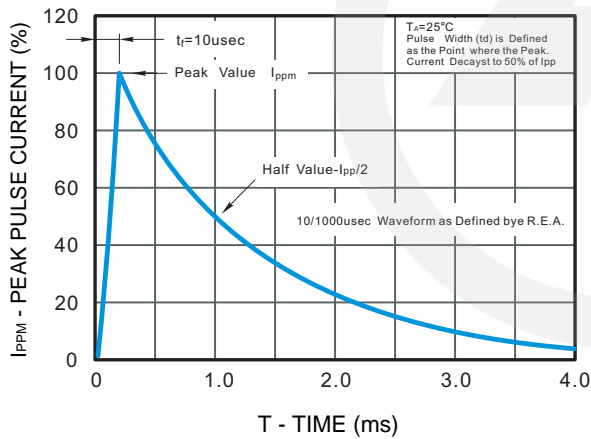
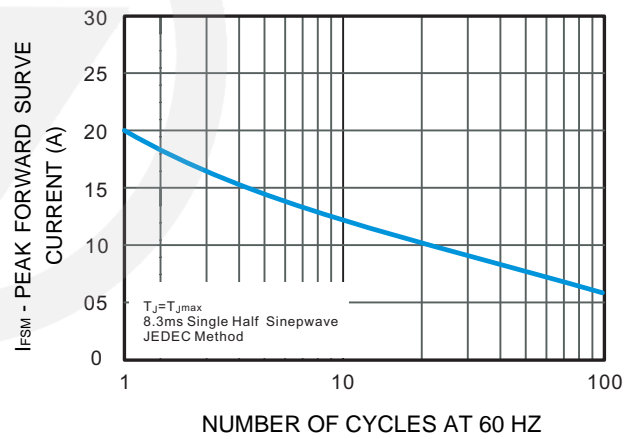
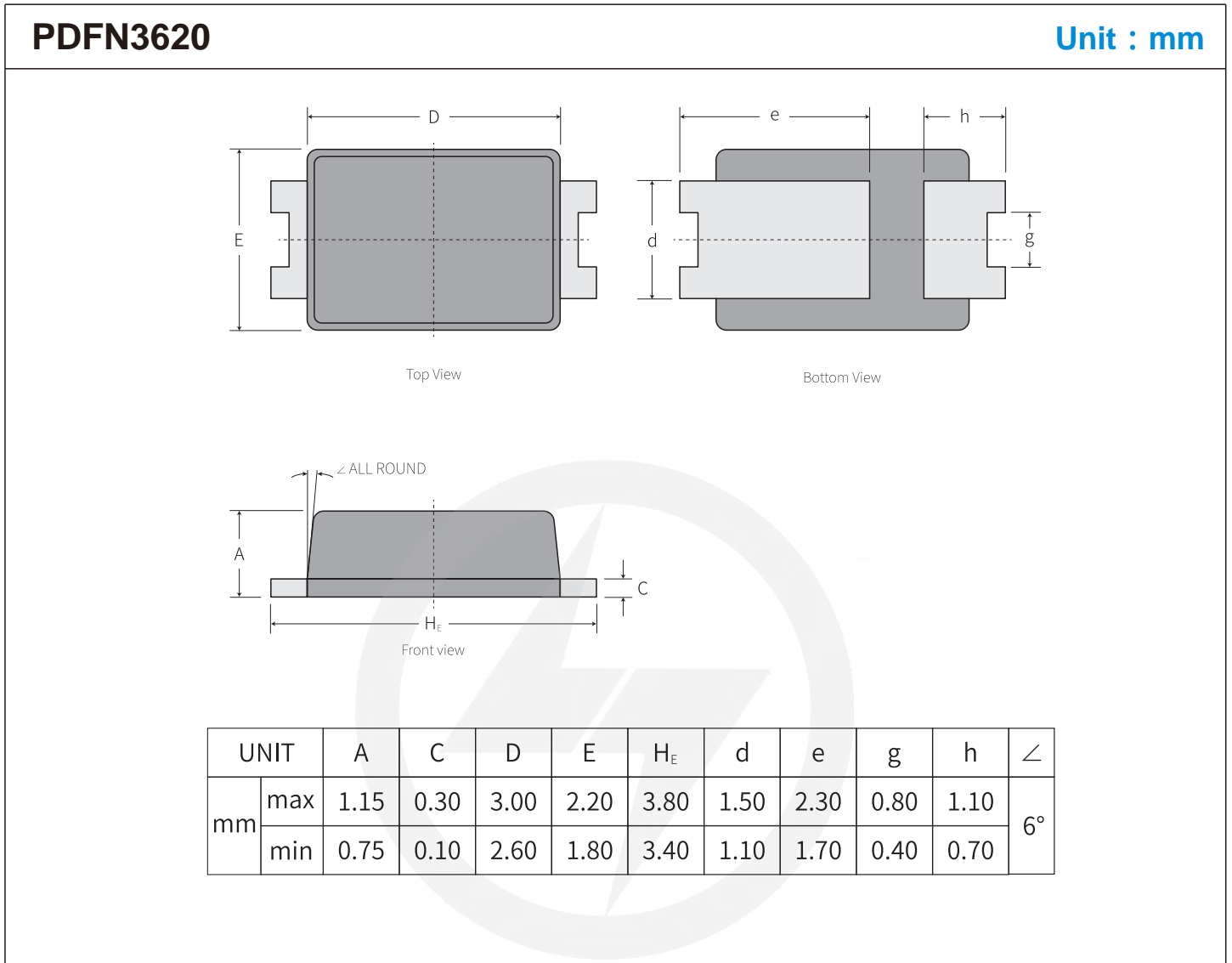
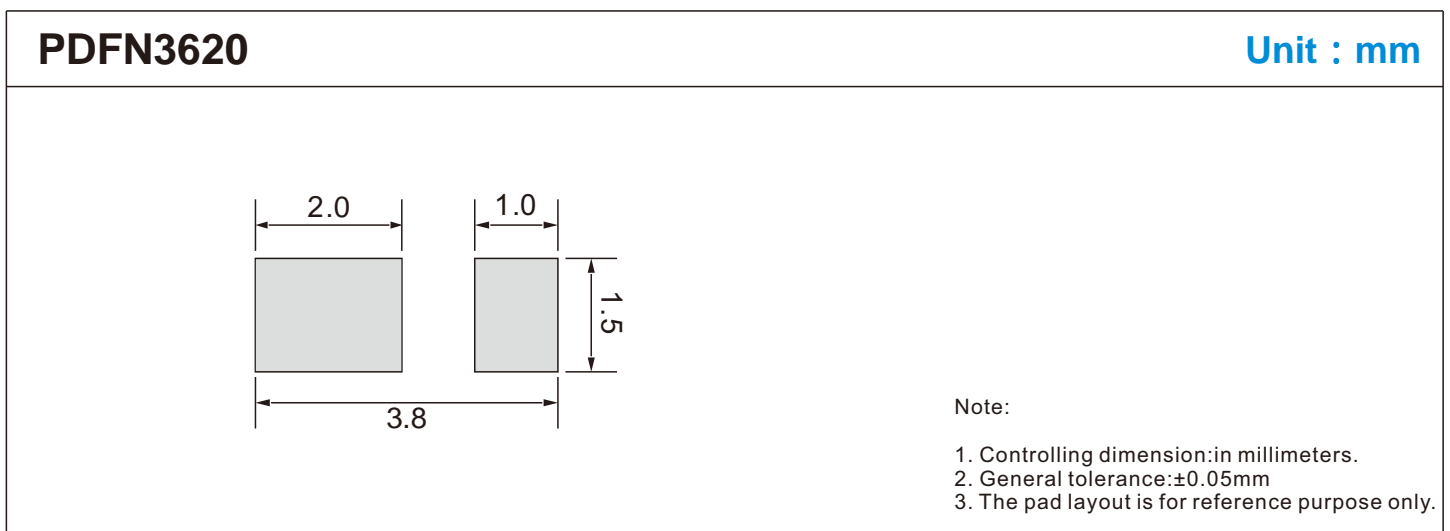


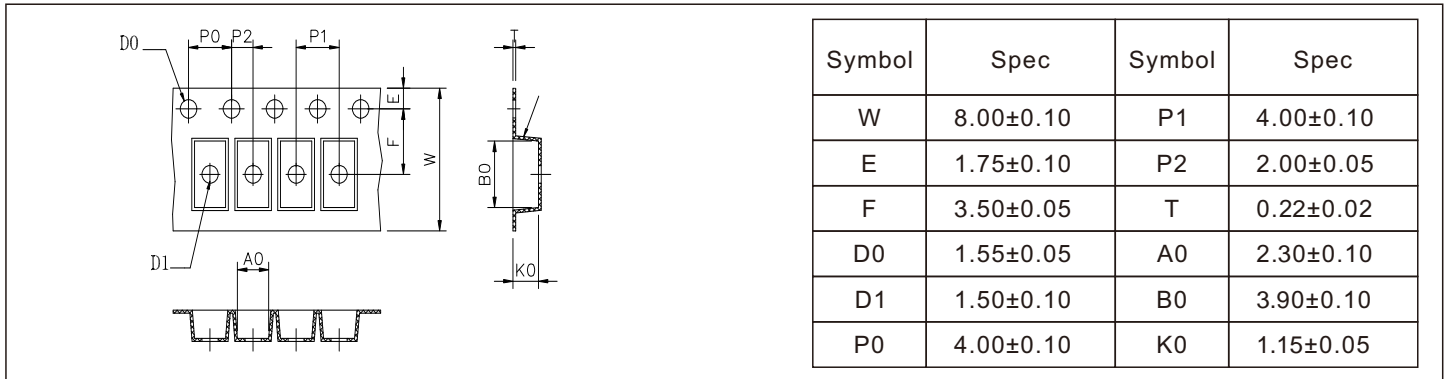
FIG.4 MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



**Package Outline**

**Suggested Pad Layout**


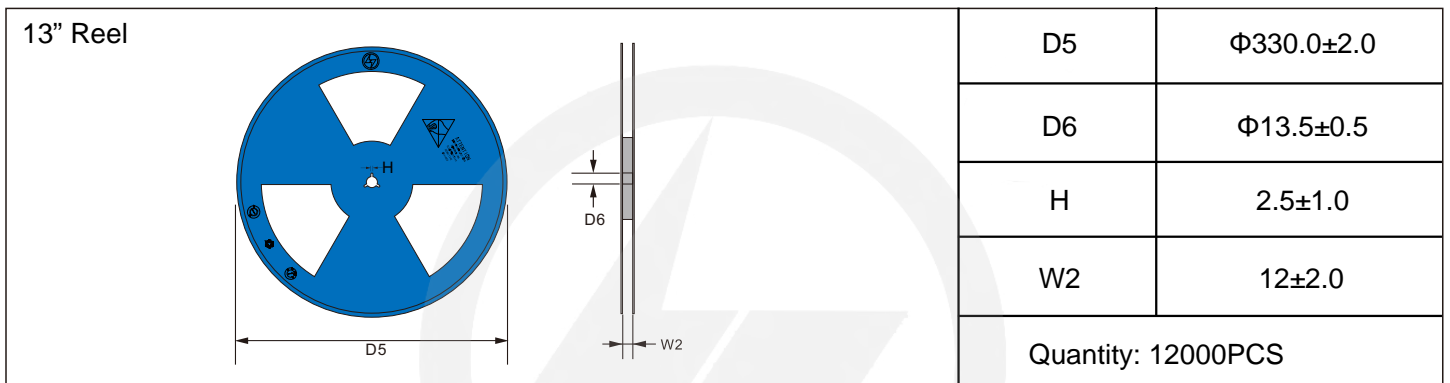
## Carrier Tape Dimensions

Unit : mm

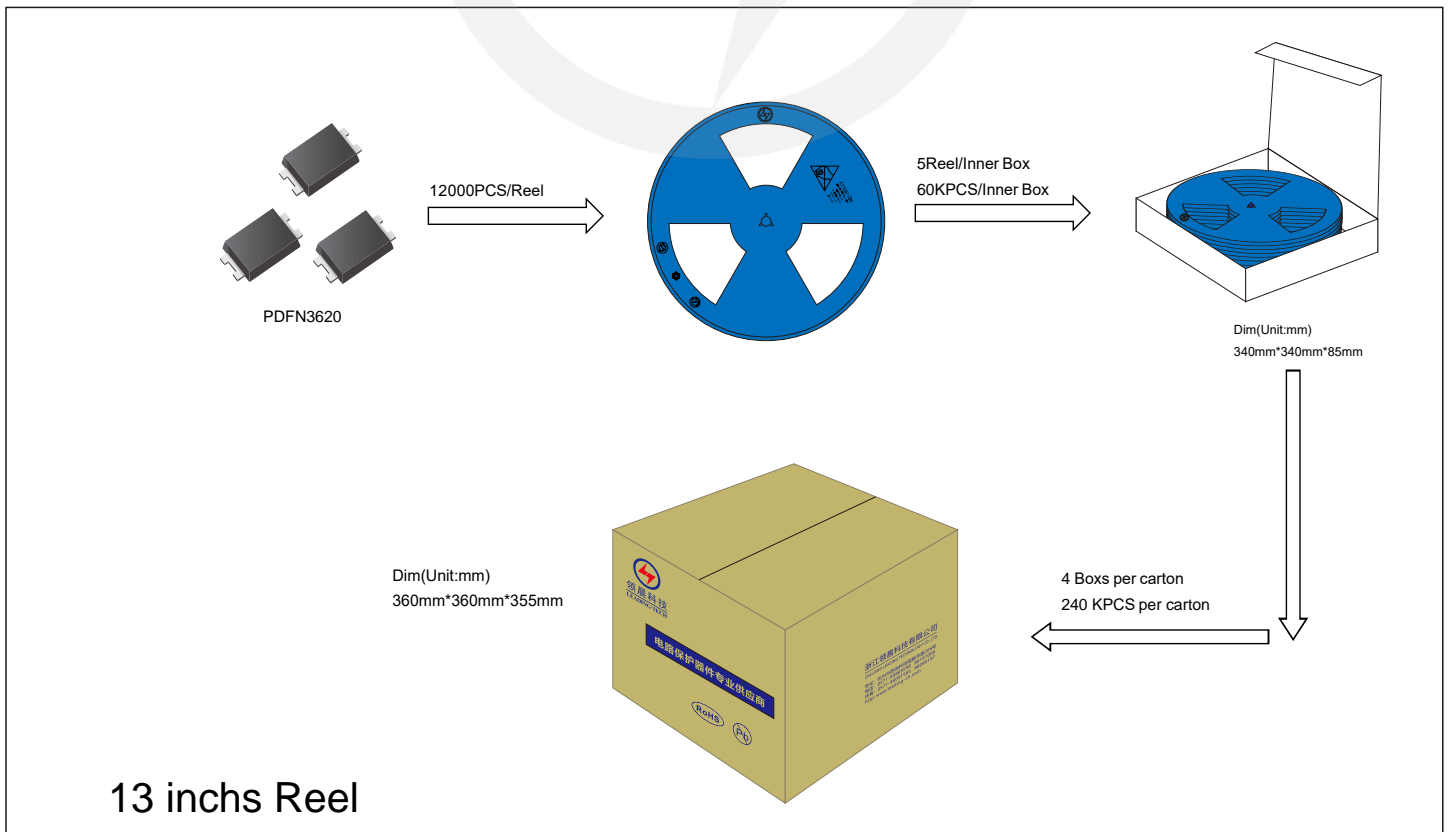


## Reel Dimensions

Unit : mm



## Packaging





Recommended Soldering Conditions



Recommended Conditions

Profile Feature	Pb-Free Assembly
Average ramp-up rate (T <sub>L</sub> to T <sub>P</sub> )	3°C/second max.
Preheat	
-Temperature Min (T <sub>S min</sub> )	150°C
-Temperature Max (T <sub>S max</sub> )	200°C
-Time (min to max) (t <sub>s</sub> )	60-180 seconds
T <sub>S max</sub> to T <sub>L</sub>	
-Ramp-up Rate	3°C/second max.
Time maintained above:	
-Temperature (T <sub>L</sub> )	217°C
-Time (t <sub>L</sub> )	60-150 seconds
Peak Temperature (T <sub>P</sub> )	260°C
Time within 5°C of actual Peak Temperature (t <sub>p</sub> )	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	2024.03.01	2024.03.01	1.0	New File	/	Ding	