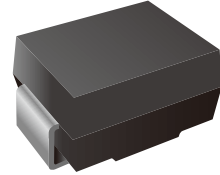


## Thyristor Surge Suppressors (TSS) Data Sheet

### Features

- Excellent capability of absorbing transient surge
- Quick response to surge voltage (nS Level)
- Eliminates overvoltage caused by fast rising transients
- Moisture sensitivity level: level 1
- Weight: 100mg
- Non degenerative
- Bi-directional
- Lead free in comply with EU RoHS 2011/65/EU directives



### Application

- AC PORT
- RJ11

### Ordering Information

Part Number	Marking	Shipping	Reel
LTPB2300D-TR3	P23D	3000PCS Tape&Reel	13 inches

### Part Number and Electrical Parameter

Part Number	I <sub>DRM</sub> @V <sub>DRM</sub>		V <sub>S</sub> <sup>①</sup> @I <sub>S</sub>		V <sub>T</sub> @I <sub>T</sub>		I <sub>H</sub>		Co <sup>②</sup>
	μA	V	V	mA	V	A	mA	mA	pF
	Max		Max		Max		Min	Max	Max
LTPB2300D	5	190	260	800	4	2.2	5	150	70

Absolute maximum ratings measured at T<sub>A</sub>= 25°C RH = 45%-75% (unless otherwise noted).

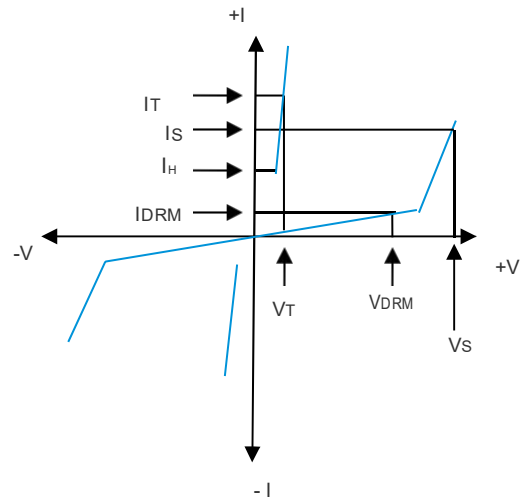
① V<sub>S</sub> is measured at 100KV/S

② Off-state Capacitance is measured at V<sub>DC</sub>=2V, V<sub>RMS</sub>=1V, f=1MHz



### V-I Curve

Parameters	Definition
V <sub>DRM</sub>	Peak Off-state Voltage
I <sub>DRM</sub>	Off-state Current
V <sub>S</sub>	Switching Voltage
I <sub>S</sub>	Switching Current
I <sub>H</sub>	Holding Current
V <sub>T</sub>	On-state Voltage
I <sub>T</sub>	On-state Current
C <sub>o</sub>	Off-state Capacitance



### Surge Ratings

Current Waveform	Voltage Waveform	I <sub>pp</sub>
8/20μs	1.2/50μs	Min: 800A
di/dt	/	Min: 1000A/μs

### Thermal Considerations

Symbol	Parameter	Value	Unit
T <sub>J</sub>	Operating Junction Temperature Range	-40 to +150	°C
T <sub>s</sub>	Storage Temperature Range	-60 to +150	°C

### Physical Characteristics

Lead Material	Copper Alloy
Terminal Finish	100% Matte-Tin Plated



### Characteristics Curves

Fig.1 Normalized holding current VS Junction Temperature

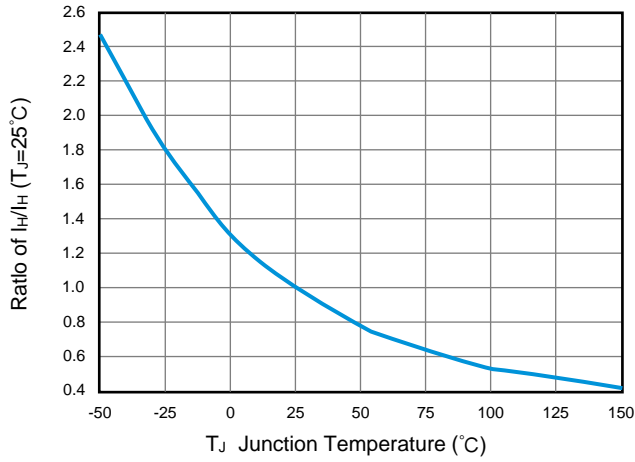


Fig.2 Off-state current VS Junction Temperature

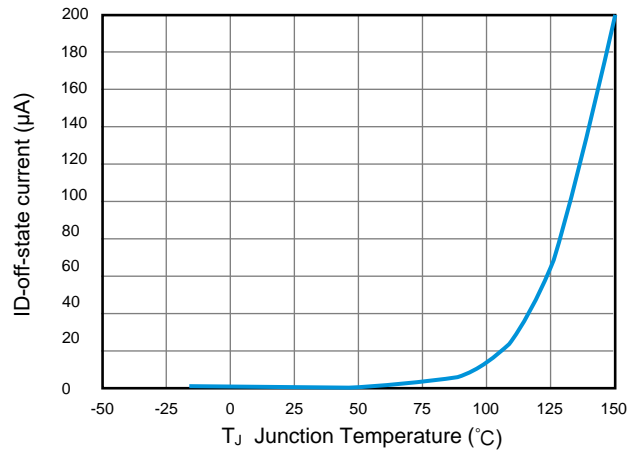


Fig.3 Switching Voltage VS Junction Temperature

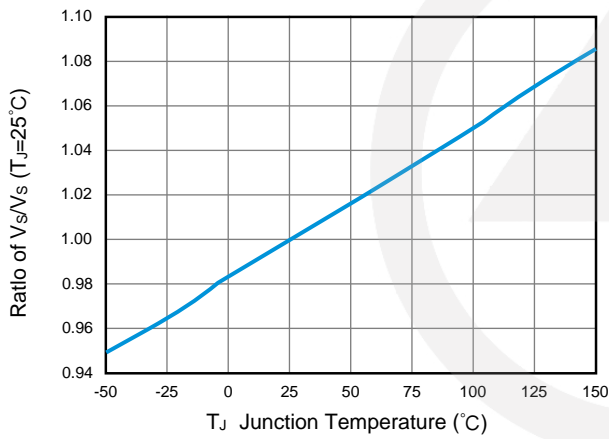


Fig.4 Typical Junction Capacitance( $f=1\text{MHz}$ )

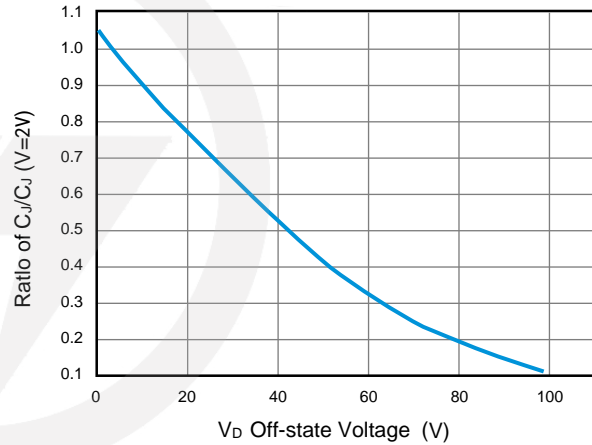
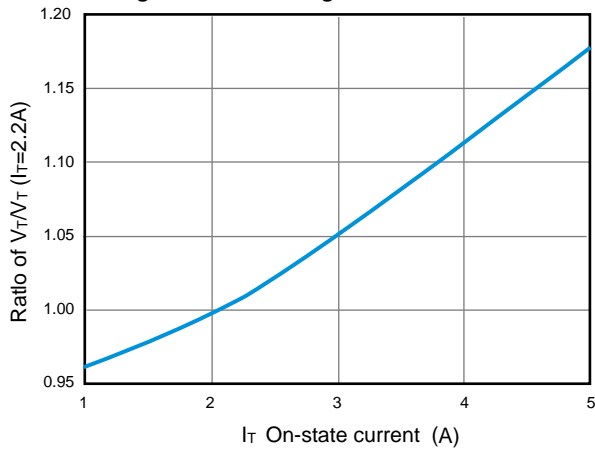
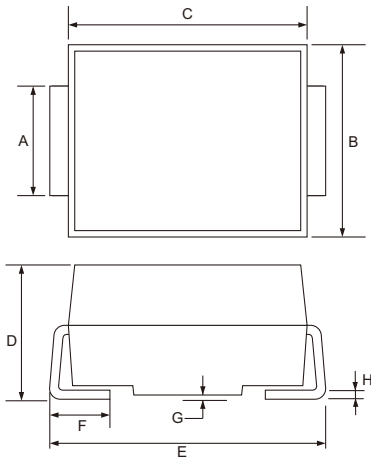


Fig.5 On-state voltage VS On-state current



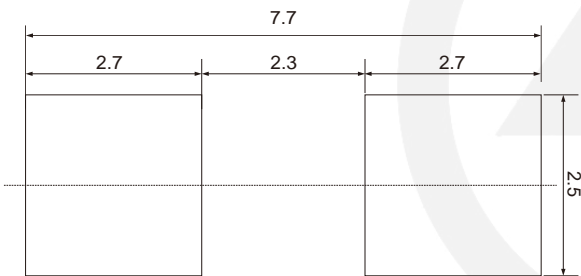
**SMB Package Outline**



Unit: mm

SYMBOL	DIMENSIONS	
	MIN.	MAX.
A	1.90	2.20
B	3.30	3.94
C	4.05	4.75
D	2.13	2.65
E	5.08	5.59
F	0.76	1.52
G	0.203 TYP.	
H	0.15	0.31

**SMB Suggested Pad Layout**

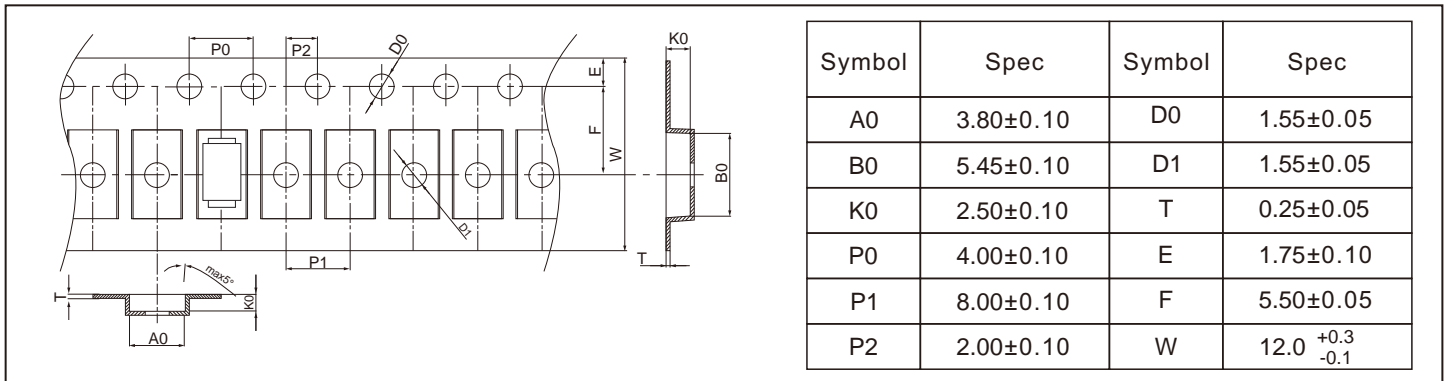


**Note:**

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

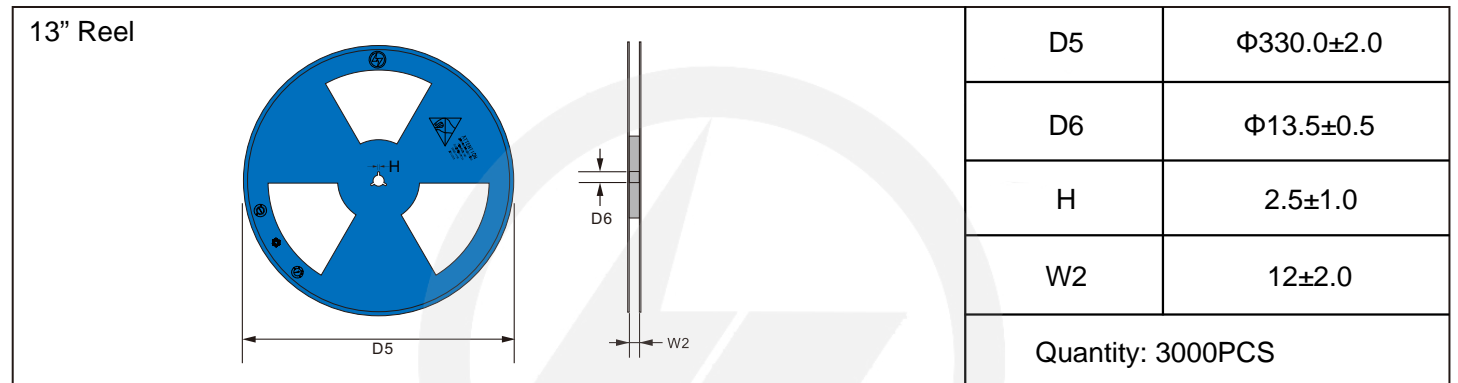
**Carrier Tape Dimensions**

Unit : mm

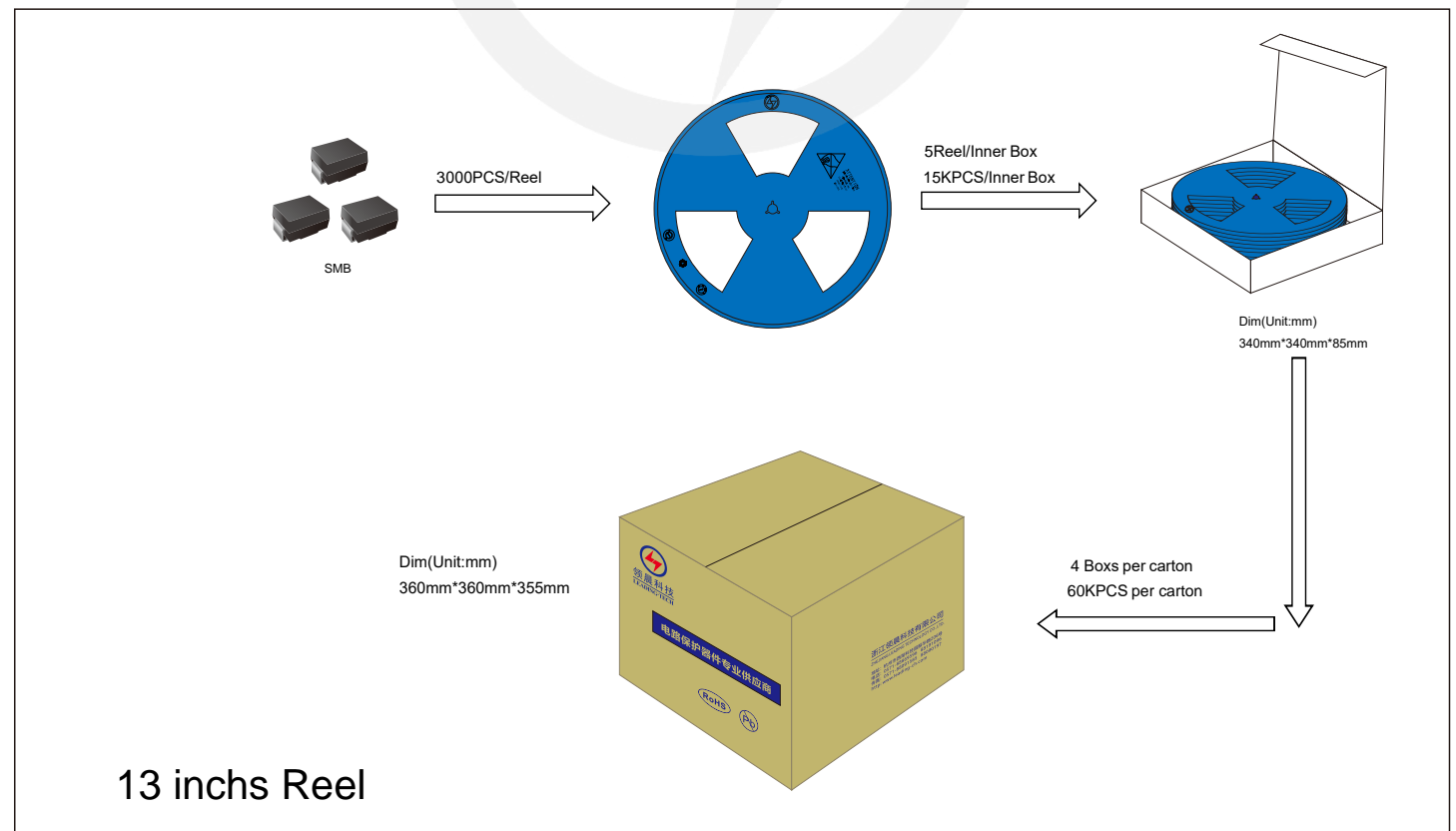


**Reel Dimensions**

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	2025.02.13	2025.02.13	3.0	New File	/	Ding	
02	2025.08.26	2025.08.26	3.1	Modify Marking	/	Ding	