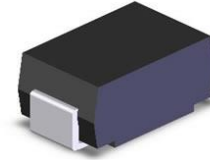


**SPD81581A**

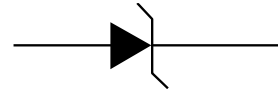
1-Line, 400W, TVS

[Http://www.sh-willsemi.com](http://www.sh-willsemi.com)
**Descriptions**

SPD81581A protect sensitive electronics against voltage transients induced by inductive load switching and lightning. Ideal for the protection of I/O interfaces, V<sub>CC</sub> bus and other integrated circuits.


**Features**

- For surface mount application
- Excellent clamping capability
- Low profile package
- Fast response time: Typically less than 1.0ps from 0V to 64.4V
- Low inductance
- GPP

**SMA (DO-214AC)**

**Schematic Diagram**
**Mechanical Data**

- Case: Molded plastic
- Mounting position: Any
- Weight: 0.063 grams



YY = Year Code  
 WW = Week Code  
 RG = Device Code

**Marking (Top View)**
**Order information**

Device	Package	Shipping
SPD81581A-2/TR	SMA	5000/Tape&Reel

**Absolute maximum ratings**

Rating	Symbol	Value	Units
Peak Pulse Power on 10/1000 $\mu$ s waveform	P <sub>PPM</sub>	400	W
Peak Pulse Current of on 10/1000 $\mu$ s waveform	I <sub>PPM</sub>	4.3	A
Peak Forward Surge Current , 8.3ms Single Half Sine-wave Superimposed on Rated Load,(JEDEC Method)	I <sub>FSM</sub>	40	A
Junction Temperature	T <sub>J</sub>	-55~150	°C
Operating Temperature	T <sub>OP</sub>	-40~125	°C
Storage Temperature Range	T <sub>STG</sub>	-55~150	°C

Notes :

1. Mounted on 5.0mm<sup>2</sup> (0.03mm thick) Copper Pads to each terminal

**Electrical characteristics (T<sub>A</sub>=25°C, unless otherwise noted)**

Part Number	Reverse Stand off Voltage V <sub>R</sub> (V)	Breakdown Voltage V <sub>BR</sub> @ I <sub>T</sub> (V)		Test Current I <sub>T</sub> (mA)	Maximum Clamping Voltage V <sub>C</sub> @I <sub>PP</sub> (V)	Maximum Peak Pulse Current I <sub>PP</sub> (A)	Maximum Reverse Leakage I <sub>R</sub> @ V <sub>R</sub> ( $\mu$ A)
		MIN	MAX				
SPD81581A	58	64.4	74.1	1.0	93.6	4.3	1.0

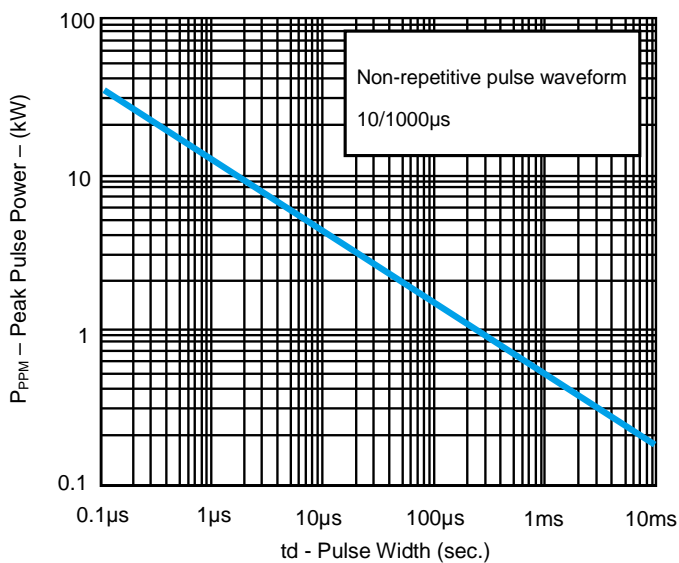
**Typical characteristics (T<sub>A</sub>=25°C, unless otherwise noted)**


Fig. 1 Peak Pulse Power

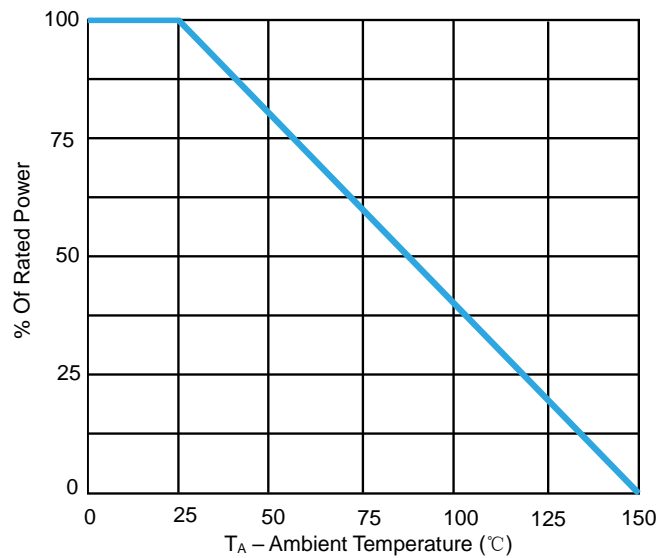
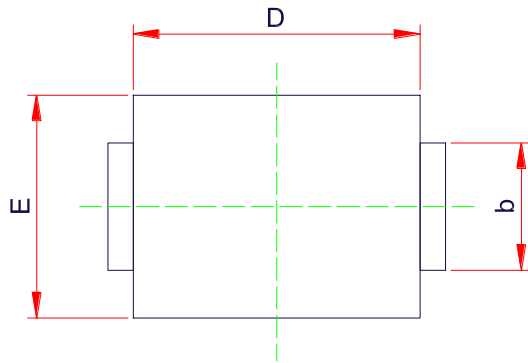
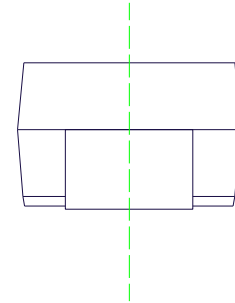
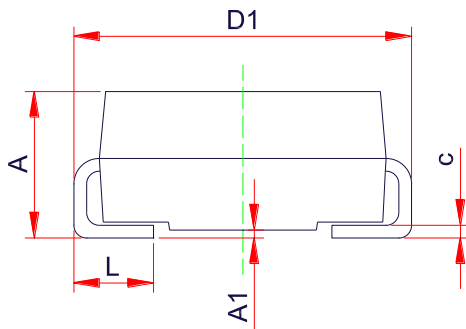
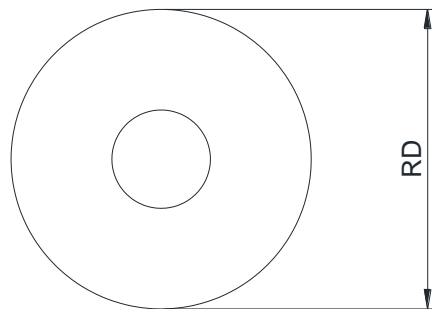
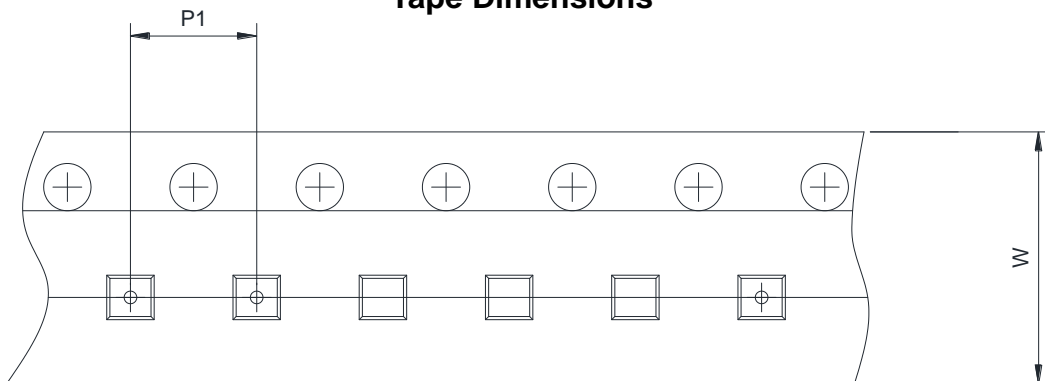
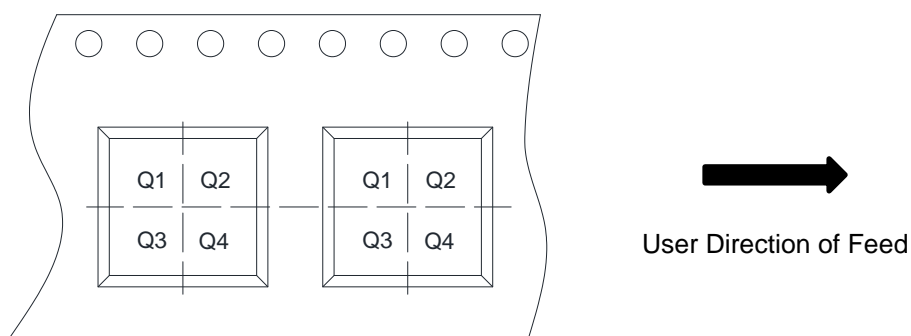


Fig. 2 Pulse Derating Curve

**PACKAGE OUTLINE DIMENSIONS**
**SMA**

**TOP VIEW**

**SIDE VIEW**

**SIDE VIEW**

Symbol	Dimensions in millimeters	
	Min.	Max.
A	1.90	2.50
A1	0.203 MAX	
c	0.14	0.31
D	3.85	4.60
D1	4.70	5.30
E	2.18	2.80
b	1.27	1.80
L	0.76	1.52

**TAPE AND REEL INFORMATION**
**Reel Dimensions**

**Tape Dimensions**

**Quadrant Assignments For PIN1 Orientation In Tape**


RD	Reel Dimension	<input type="checkbox"/> 7inch	<input checked="" type="checkbox"/> 13inch
W	Overall width of the carrier tape	<input type="checkbox"/> 8mm	<input checked="" type="checkbox"/> 12mm <input type="checkbox"/> 16mm
P1	Pitch between successive cavity centers	<input type="checkbox"/> 2mm	<input checked="" type="checkbox"/> 4mm <input type="checkbox"/> 8mm
Pin1	Pin1 Quadrant	<input checked="" type="checkbox"/> Q1	<input checked="" type="checkbox"/> Q2 <input type="checkbox"/> Q3 <input type="checkbox"/> Q4

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