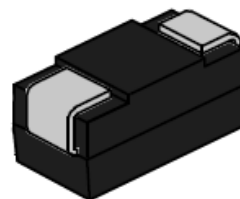




### DESCRIPTION:

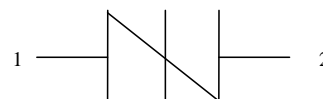
P1800SD-G is a type of semiconductor component. It can be used for digital SPC switch, gigabit IP router, equipment ground insulation, computer etc. It can also be connected with MOVs to protect requirements of AC power. Compared with the traditional GDT and MOVs combination, it has lower capacitance, higher reliability etc.



SMB

### FEATURES:

- Low profile package.
- Low on-state voltage.
- Glass passivated junction.
- 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.
- Non degenerative.



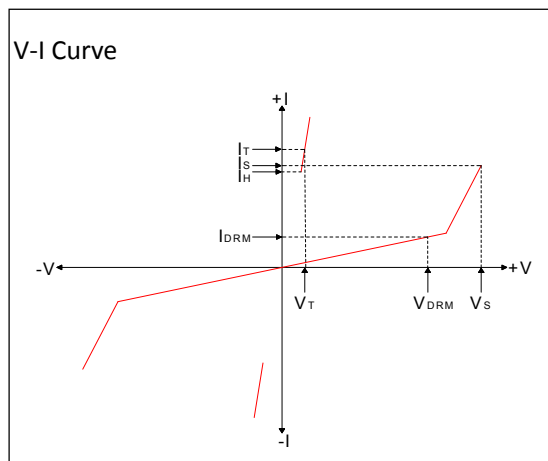
Symbol

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	T <sub>STG</sub>	-60 to +150	°C
Operating junction temperature range	T <sub>J</sub>	-40 to +125	°C
Peak pulse voltage at 1.2/50µs-8/20µs@12Ω waveform	V <sub>PP</sub>	8000	V
Maximum leakage current connected with MOV561~102		5.0 @1500VAC	mA

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

Symbol	Parameter
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
V <sub>T</sub>	On-state voltage
I <sub>T</sub>	On-state current
I <sub>H</sub>	Holding current
C <sub>O</sub>	Off-state capacitance



**MARKING**



P18VD : Device Marking Code  
1926: the 26th week, 2019

**ELECTRICAL CHARACTERISTICS**( $T_A=25^{\circ}\text{C}$ , continued)

Part Number	$I_{DRM}@V_{DRM}$		$V_s^{①}@I_s$		$V_T@I_T$		$I_H$	$C_o^{②}$	Marking
	$\mu\text{A}$	V	V	mA	V	A	mA	pF	
	max		max	max	max	max	typ	max	
P1800SD-G	5	1800	2800	800	4	2.2	10	45	P18VD

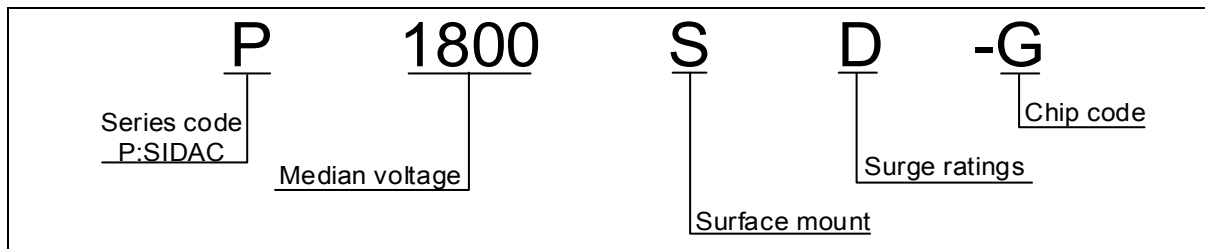
①  $V_s$  is measured at 100KV/s

② Off-state capacitance is measured in  $V_{DC}=2\text{V}, V_{RMS}=1\text{V}, f=1\text{MHz}$

**SURGE RATINGS**

	1.2/50 $\mu\text{s}$ -8/20 $\mu\text{s}$ ( $R_i=12\Omega$ )	8/20 $\mu\text{s}$	10/1000 $\mu\text{s}$
D	8KV	600A	150A

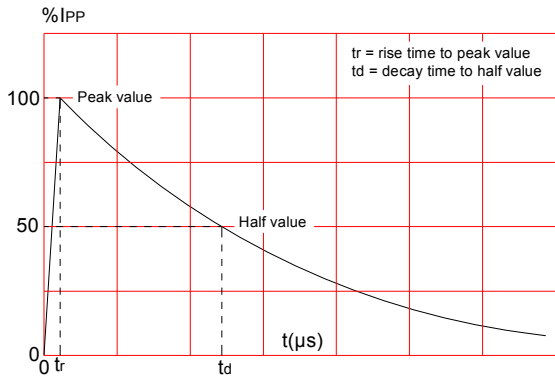
**ORDERING INFORMATION**



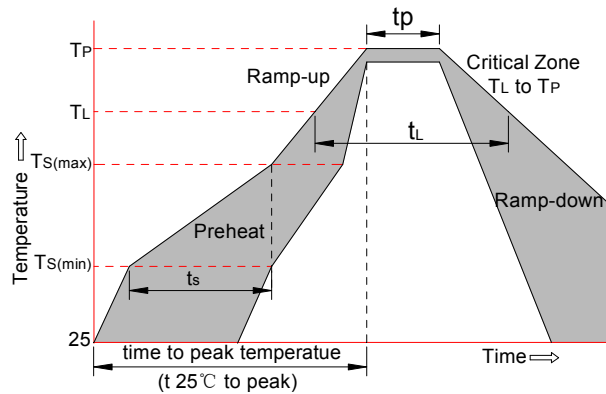
**SOLDERING PARAMETERS**

Reflow Condition		Pb-Free assembly (see FIG.2)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquidus Temp ( $T_L$ )to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature( $T_L$ ) (Liquidus)	+217°C
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_p$ )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp ( $t_p$ )		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260°C

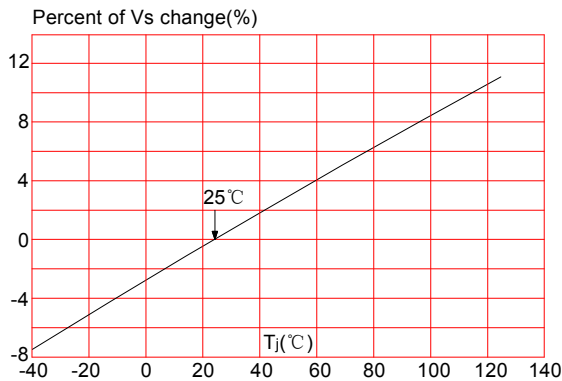
**FIG.1:** tr × td pulse waveform



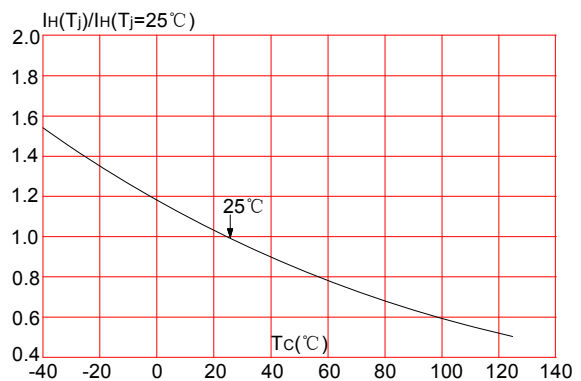
**FIG.2:** Reflow condition



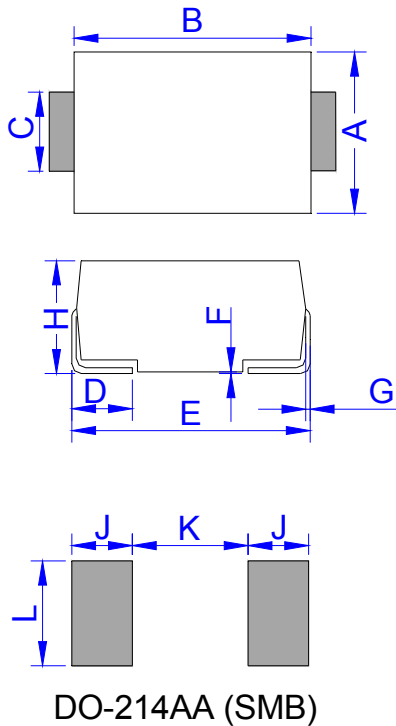
**FIG.3:** Normalized  $V_s$  change vs. junction temperature



**FIG.4:** Normalized DC holding current vs. case temperature

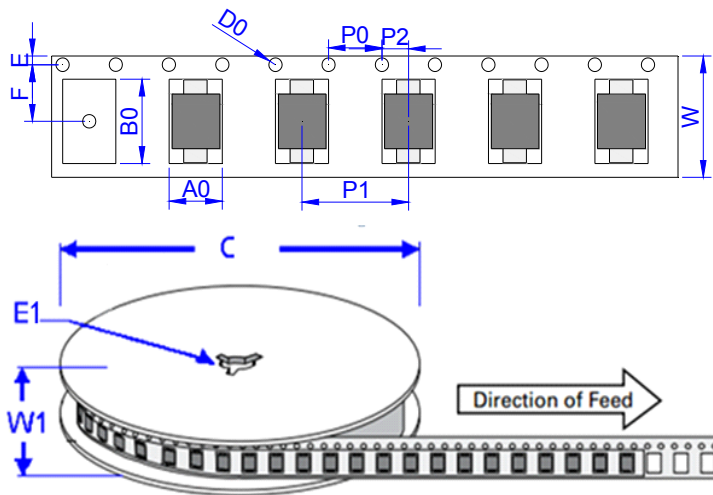


**PACKAGE MECHANICAL DATA**



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.30	3.94	0.130	0.155
B	4.30	4.80	0.169	0.189
C	1.90	2.20	0.075	0.087
D	0.95	1.52	0.037	0.060
E	5.20	5.60	0.205	0.220
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.10	2.40	0.083	0.094
J	2.20		0.087	
K		2.60		0.102
L	2.30		0.091	


**TAPE AND REEL SPECIFICATION-SMB**



Ref.	Dimensions	
	Millimeters	Inches
A0	3.76 ± 0.3	0.148 ± 0.012
B0	5.69 ± 0.3	0.224 ± 0.012
C	330.0	13.0
D0	1.55 ± 0.1	0.061 ± 0.004
E	1.75 ± 0.2	0.069 ± 0.008
E1	13.3 ± 0.3	0.524 ± 0.012
F	5.5 ± 0.2	0.217 ± 0.008
P0	4.00 ± 0.2	0.157 ± 0.008
P1	8.00 ± 0.2	0.3145 ± 0.008
P2	2.00 ± 0.2	0.079 ± 0.008
W	12.0 ± 0.2	0.472 ± 0.008
W1	15.7 ± 2.0	0.618 ± 0.079

PART No.	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	PER CARTON (PCS)	DESCRIPTION
P1800SD-G	0.098	3,000	48,000	13 inch reel pack

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