

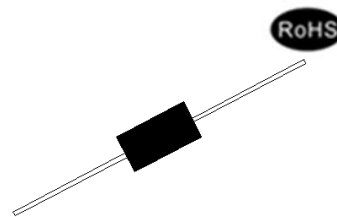


## P1800TE-G TSS

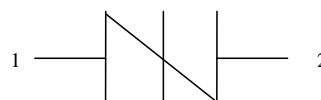
Rev.1.0

### DESCRIPTION:

P1800TE-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.



DO-27



Symbol

### FEATURES:

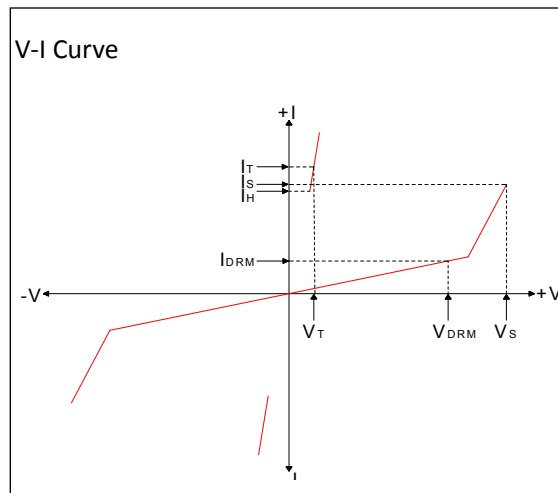
- Low profile package.
- Low on-state voltage.
- Glass passivated junction.
- Excellent capability of absorbing transient surge.
- Quick response to surge voltage (ns Level).
- Eliminates overvoltage caused by fast rising transients
- Non degenerative.
- Moisture sensitivity level: Level 1.
- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact).

### 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>	10000	V

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

Symbol	Parameter
$V_{\text{DRM}}$	Peak off-state voltage
$I_{\text{DRM}}$	Off-state current
$V_{\text{S}}$	Switching voltage
$I_{\text{S}}$	Switching current
$V_{\text{T}}$	On-state voltage
$I_{\text{T}}$	On-state current
$I_{\text{H}}$	Holding current
$C_{\text{O}}$	Off-state capacitance



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

Part Number	$I_{\text{DRM}}@V_{\text{DRM}}$		$V_{\text{S}}^{\text{①}}@I_{\text{S}}$		$V_{\text{T}}@I_{\text{T}}$		$I_{\text{H}}$	$C_{\text{O}}^{\text{②}}$
	$\mu\text{A}$	V	V	mA	V	A	mA	pF
	max		max	max	max	max	typ	max
P1800TE-G	5	1800	2800	800	4	2.2	10	50

①  $V_{\text{S}}$  is measured at 100kV/s

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

**SURGE RATINGS**

	1.2/50 $\mu\text{s}$ -8/20 $\mu\text{s}$ ( $R_i=12\Omega$ )	10/700 $\mu\text{s}$	8/20 $\mu\text{s}$	10/1000 $\mu\text{s}$
E	10KV	10KV	800A	200A

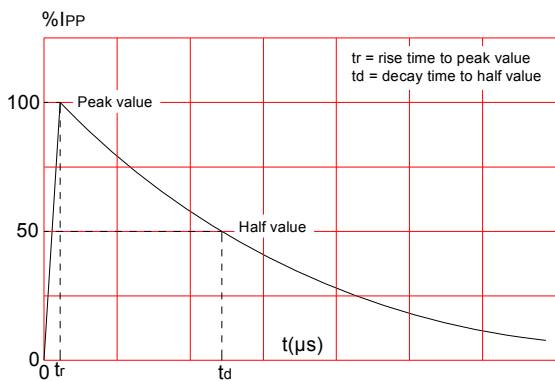
**ORDERING INFORMATION**

P	1800	T	E	-G
Series code P:SIDAC	Median voltage	Package type: DO-27	Surge ratings	Chip code

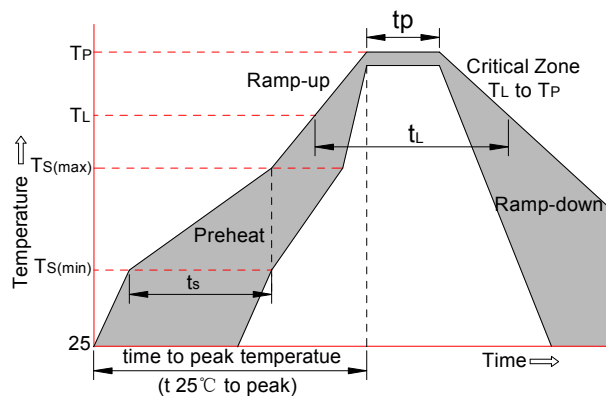
**SOLDERING PARAMETERS**

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 ( $t_p$ )		20-40 secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260°C

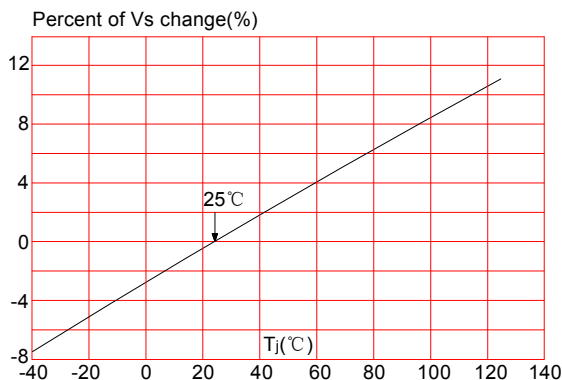
**FIG.1:** tr × td pulse waveform



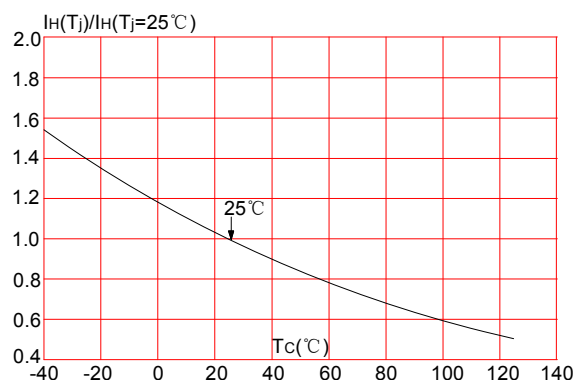
**FIG.2:** Reflow condition



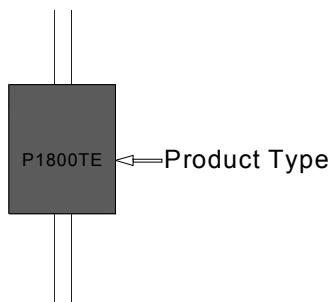
**FIG.3:** Normalized  $V_s$  change vs. junction temperature



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

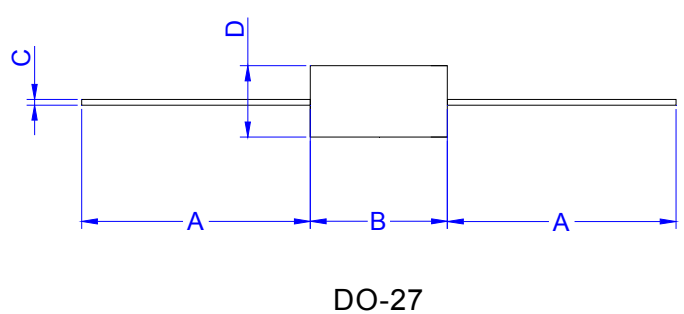


**MARKING & ORDERING INFORMATION**



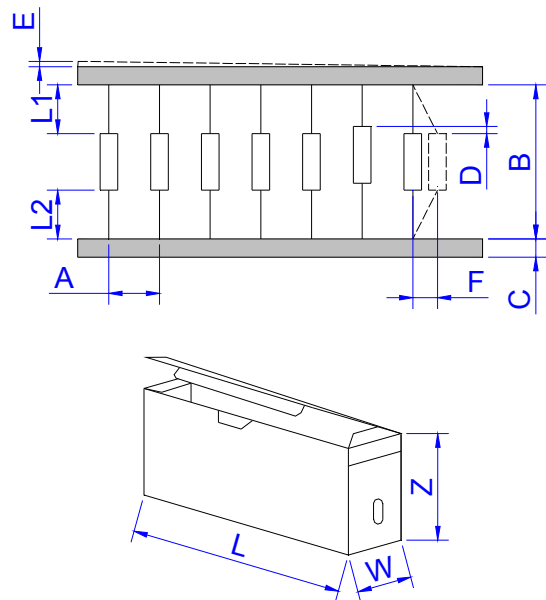
- P 1800 T E  
 (1) (2) (3) (4)  
 (1)Series code P: SIDAC  
 (2)Median voltage  
 (3)Package type: DO-27  
 (4)Surge ratings

**PACKAGE MECHANICAL DATA**



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	25.40	-	1.000	-
B	7.20	9.60	0.283	0.378
C	0.96	1.07	0.038	0.042
D	4.80	5.40	0.189	0.213


**TAPE AND BOX SPECIFICATION-DO-27**



Ref.	Dimensions	
	Millimeters	Inches
A	10.0±0.5	0.394±0.020
B	53.0±1.5	2.087±0.059
C	6.0±0.5	0.236±0.020
D	1.2(MAX)	0.047(MAX)
E	0.8(MAX)	0.031(MAX)
F	1.5(MAX)	0.059(MAX)
L1-L2	1.0(MAX)	0.039(MAX)
W	80±5.0	3.150±0.197
L	250±5.0	9.843±0.197
Z	115±5.0	4.528±0.197

PART No.	UNIT WEIGHT (g/PCS) typ.	PER BOX (PCS)	PER CARTON (PCS)	DESCRIPTION
P1800TE-G	1.11	1,000	10,000	Box

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