

## Sidac

### K0900SD1 Series

#### Description

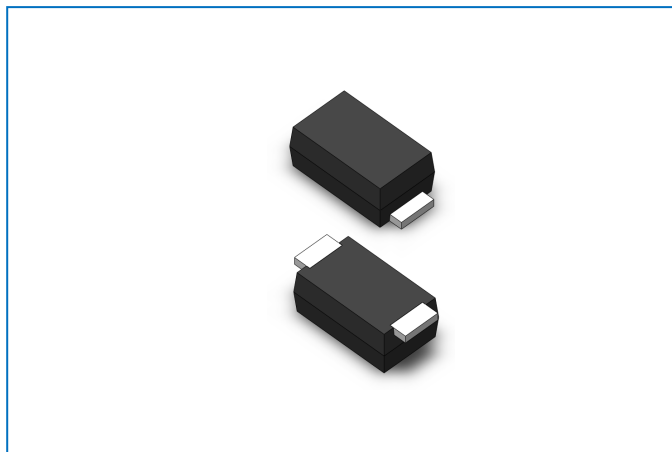
The sidac is a silicon bilateral voltage triggered switch with greater power-handling capabilities than standard diacs. Upon application of a voltage exceeding the sidac breakover voltage point, the sidac switches on through a negative resistance region to a low on-state voltage. Conduction continues until the current is interrupted or drops below the minimum holding current of the device.

#### Feature

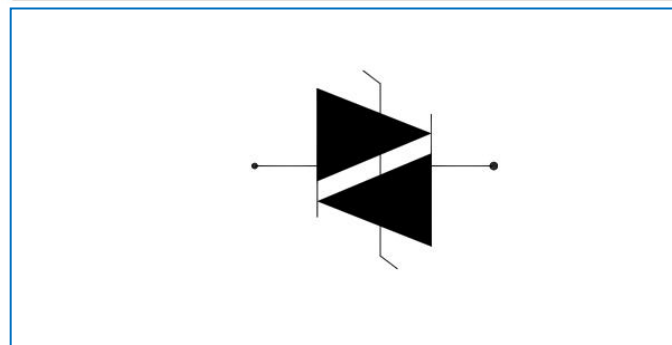
- ◆ Excellent capability of absorbing transient surge
- ◆ Quick response to surge voltage (ns Level)
- ◆ Glass passivated junctions
- ◆ High voltage lcmp ignitors

#### Applications

- ◆ High-voltage lamp ignitors
- ◆ Natural gas ignitors
- ◆ Gas oil ignitors
- ◆ High-voltage power supplies
- ◆ Xenon ignitors
- ◆ Over voltage protector
- ◆ Pulse generators
- ◆ Fluorescent lighting ignitors HID lighting ignitors



#### Functional Diagram



#### Mechanical Characteristics ( $T_A=25^\circ\text{C}$ , RH=45%-75%, unless otherwise noted)

Symbol	Parameter	Value	Units
$I_{TSM}$	Maximum surge on-state current non-repetitive one cycle peak value (50Hz)	8	A
$di_T/dt$	Critical rate-of-rise of on-state current	50	A
$I_T$	On-state RMS Current	1	A
$T_{stg}$	Storage temperature range	-40 to +125	$^\circ\text{C}$
$T_j$	Operating junction temperature range	-40 to +125	$^\circ\text{C}$

**Sidac**

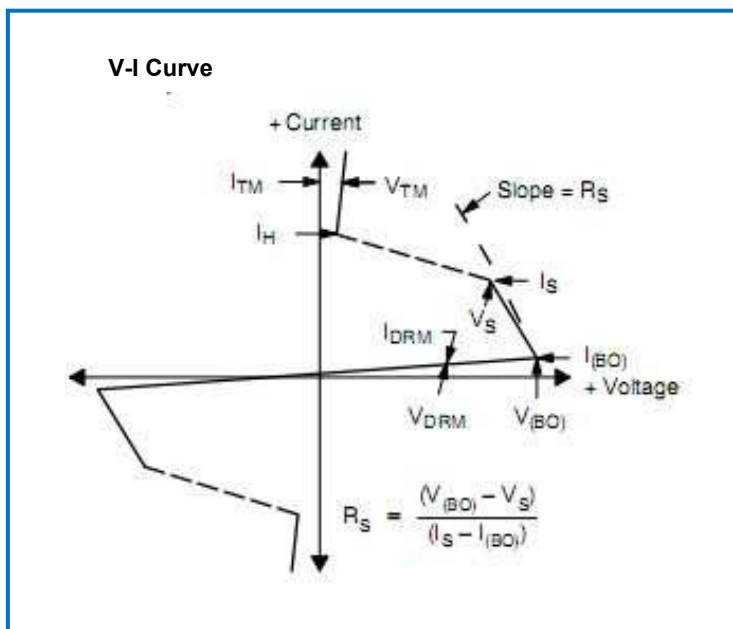
**K0900SD1 Series**

**Electrical Characteristics (@ 25°C Unless Otherwise Specified )**

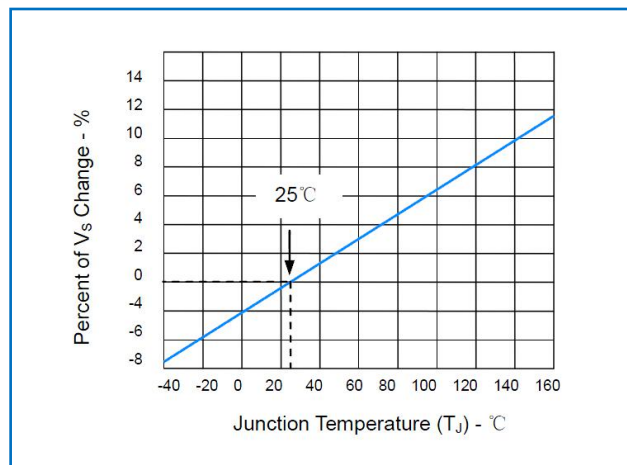
Part Number	V <sub>DRM</sub> @ I <sub>DRM</sub>		V <sub>BO</sub>		I <sub>BO</sub>	V <sub>T</sub> @ I <sub>T</sub> =1A	R <sub>s</sub>	I <sub>H</sub>	Body Marking
	V		V		uA	V	kΩ	mA	
	Min	Max	Min	Max	Max	Max	Min	Min	
K0900SD1	70	1	80	97	50	2	0.1	10	K09S
K1050SD1	90	1	95	113	50	2	0.1	10	K10S
K1200SD1	100	1	110	125	50	2	0.1	10	K12S
K1300SD1	110	1	120	138	50	2	0.1	10	K13S
K1400SD1	120	1	130	146	50	2	0.1	10	K14S
K1500SD1	130	1	140	170	50	2	0.1	10	K15S
K1800SD1	160	1	170	195	50	2	0.1	10	K18S
K2000SD1	180	1	190	215	50	2	0.1	10	K20S
K2200SD1	190	1	205	230	50	2	0.1	10	K22S
K2400SD1	200	1	220	250	50	2	0.1	10	K24S
K2600SD1	220	1	240	270	50	2	0.1	10	K26S

**Electrical Characteristics (@ 25°C Unless Otherwise Specified )**

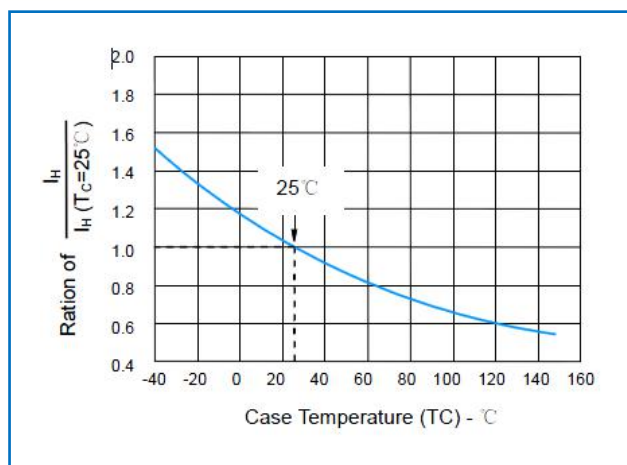
Symbol	Parameter
V <sub>DRM</sub>	Peak off-state voltage
I <sub>DRM</sub>	Off-state current
V <sub>s</sub>	Switching voltage
I <sub>s</sub>	Switching current
R <sub>s</sub>	Switching resistance
V <sub>T</sub>	On-state voltage
I <sub>H</sub>	Holding current
V <sub>BO</sub>	Break over Voltage
I <sub>BO</sub>	Break over current



**Figure 1- Normalized V<sub>s</sub> change vs. junction temperature**



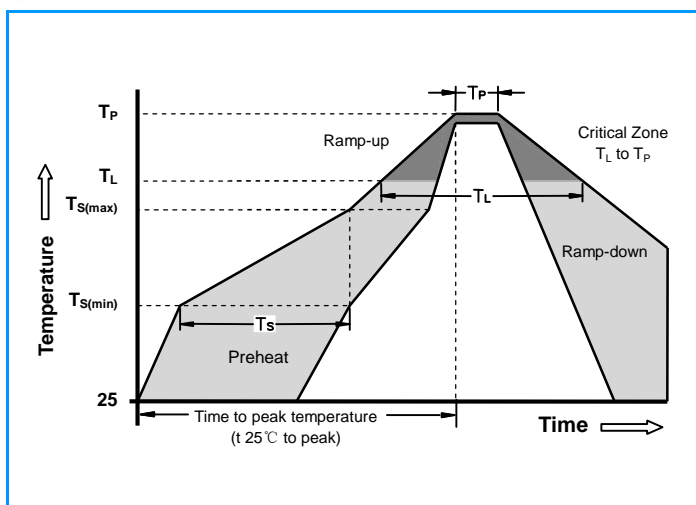
**Figure 2- Normalized DC holding current vs. case temperature**



**Sidac**

**K090SD1 Series**

**Soldering Parameters**



<b>Reflow Condition</b>		Lead-free assembly
<b>Pre Heat</b>	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max ( $T_{s(max)}$ )	+200°C
	-Time (min to max) ( $t_s$ )	60 -180 Seconds
<b>Average ramp up rate ( Liquidus Temp <math>T_L</math>) to peak</b>		3°C/Second Max
<b><math>T_{s(max)}</math> to <math>T_L</math> - Ramp-up Rate</b>		3°C/Second Max
<b>Reflow</b>	- Temperature ( $T_L$ ) (Liquidus)	+217°C
	- Time (min to max) ( $t_s$ )	60 -150 Seconds
<b>Peak Temperature (<math>T_P</math>)</b>		260 +0/-5°C
<b>Time within 5°C of actual peak Temperature (<math>t_p</math>)</b>		8-15 Seconds
<b>Ramp-down Rate</b>		6°C/Second Max
<b>Time 25°C to peak Temperature (<math>T_P</math>)</b>		8 minutes Max
<b>Do not exceed</b>		+260°C

**Ordering Information**

<p><b>K</b> Series code K:Sidac</p>	<p><b>090</b> Median voltage</p>	<p><b>0</b> 0: Bi-direction 1: Uni-direction</p>	<p><b>SD1</b> Package type:SOD123</p>
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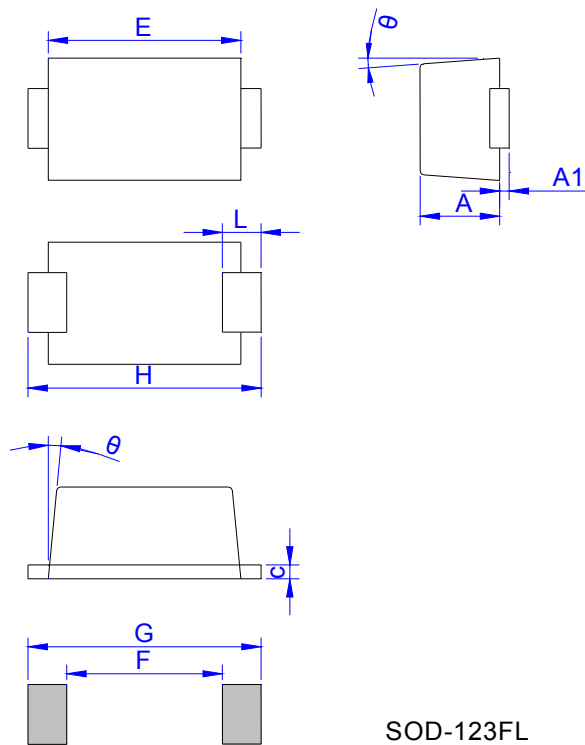
**TAPE AND REEL SPECIFICATION**

Part Number	REEL DIAMETERS (mm)	REEL(PCS)	PER CARTON (PCS)
SOD-123FL	178	3000	96000

**Sidac**

**K0900SD1 Series**

**PACKAGE MECHANICAL DATA**



SOD-123FL

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.20	0.035	0.047
A1	0	0.10	0	0.004
b	0.70	1.10	0.028	0.043
c	0.10	0.20	0.004	0.008
D	1.50	1.80	0.059	0.071
E	2.50	2.90	0.098	0.114
F	2.36	-	0.093	-
G	4.19	-	0.165	-
H	3.40	3.80	0.134	0.150
L	0.55	0.95	0.022	0.037
$\theta$	0	8°	0	8°