

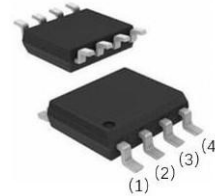


P61089B

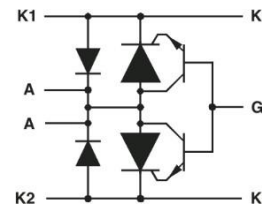
http://www.wdsemi.com

High Voltage Ringing SLIC Protector

Waveshape	I <sub>PPSM</sub>
5/320μs	50A
10/1000μs	40A
1.2/50μs	120A



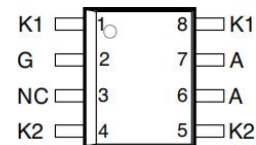
SOP-8L



Descriptions

This device is especially designed to protect Subscriber Line Interface Circuit (SLIC) against transient overvoltage. Positive overloads are clipped with 2 diodes. Negative surges are suppressed by 2 Thyristors, their breakdown voltage being referenced to VBAT through the gate. This component presents a very low gate triggering current and minimizes overvoltage stress on the SLIC.

Package & Device Symbol

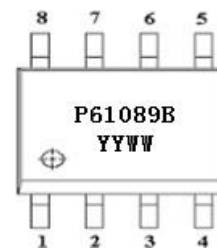


Pin configuration (Top view)

Features

- Dual programmable transient suppressor
- Wide battery voltage supports
- Low gate triggering current
- High holding current.
- MSL: Level 3

Pin	Pin Name	Description
1, 8	K1	Connect to subscriber lines (Tip/Ring)
4, 5	K2	
2	G	Connect to battery (Reference Voltage)
6, 7	A	Connect to ground
3	NC	Not connected



P61089B = Device Code  
 Y = Special Code  
 Y = Year  
 WW = Week

Marking

Applications

- Switch Line Card
- Access Network Line Card
- PBX
- VoIP

Order information

Device	Package	Shipping
P61089B	SOP-8L	4000/Reel&Tape

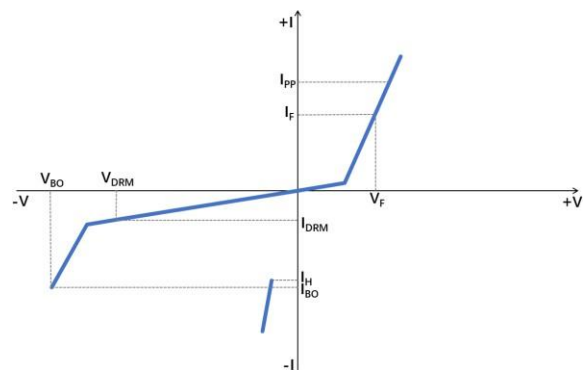


### Absolute Maximum ratings

Parameter		Symbol	Value	Unit
Non-repetitive peak on-state pulse current	10/1000 $\mu$ s (Telcordia (Bellcore) GR-1089-CORE, Issue 2, February 1999, Section 4)	I <sub>PPSM</sub>	40	A
	5/320 $\mu$ s (ITU-T K.20, K.21& K.45, K.44 open-circuit voltage wave shape 10/700 $\mu$ s)		50	
	1.2/50 $\mu$ s (Telcordia (Bellcore) GR-1089-CORE, Issue 2, February 1999, Section 4)		120	
Non repetitive peak on-state current (sinusoidal) 60Hz	0.5s	I <sub>TSM</sub>	6.5	A
	1s		4.5	
	5s		2.4	
	30s		1.3	
	900s		0.72	
Repetitive peak off-state voltage, V <sub>GK=0</sub>		V <sub>DRM</sub>	-170	V
Repetitive peak gate-cathode voltage, V <sub>KA=0</sub>		V <sub>GKRM</sub>	-167	V
Operating free-air temperature range		T <sub>A</sub>	-40-85	°C
Storage temperature range		T <sub>STG</sub>	-40-150	°C
Junction temperature		T <sub>J</sub>	-40-150	°C
Maximum lead temperature for soldering during 10s		T <sub>L</sub>	260	°C
Junction to free air thermal resistance		R <sub>θJA</sub>	120	°C /W

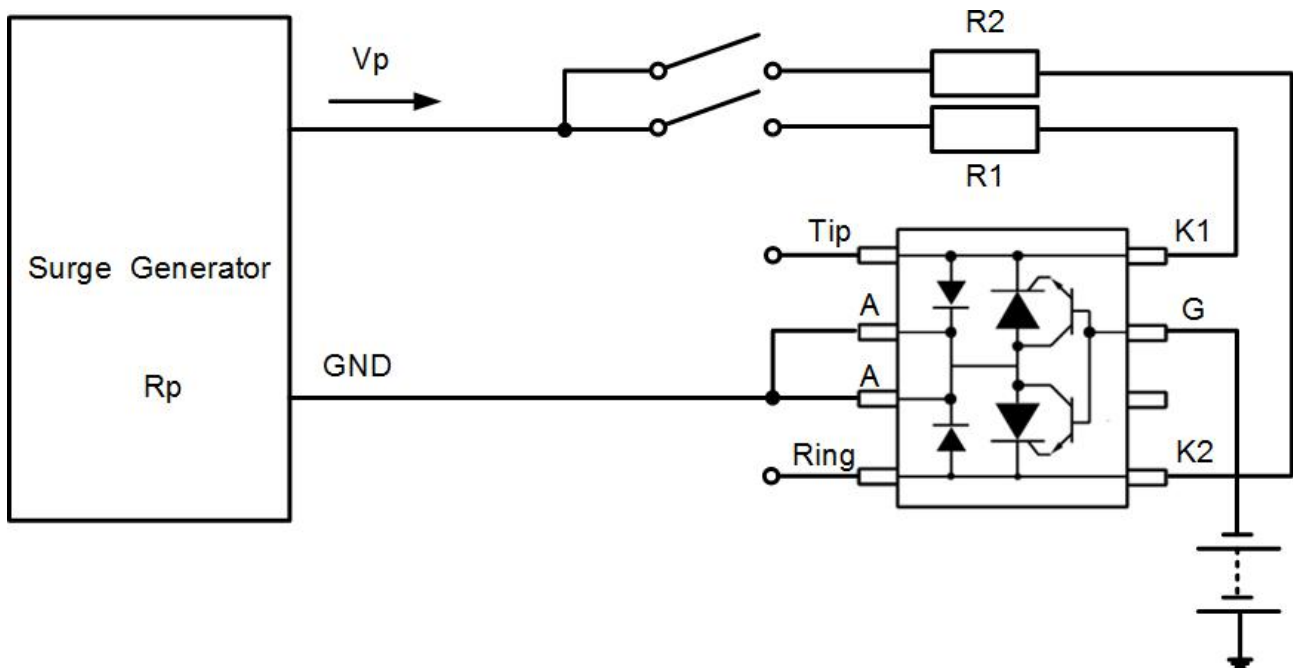
### Parameter Measurement Information

Parameter	Symbol
Off-state current	I <sub>DRM</sub>
Holding current	I <sub>H</sub>
Breakover voltage	V <sub>(BO)</sub>
Forward voltage	V <sub>F</sub>
Peak forward recovery voltage	V <sub>FRM</sub>
Gate-cathode impulse breakover voltage	V <sub>GK(BD)</sub>
Gate reverse current	I <sub>GKS</sub>
Gate trigger current	I <sub>GT</sub>
Gate-cathode trigger voltage	V <sub>GT</sub>
Cathode-anode off-state capacitance	C <sub>KA</sub>



**Electronics Characteristics (Ta=25°C, unless otherwise noted)**

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Forward voltage	$V_F$	$I_F=5A, t_W=200\mu s$			3	V
Impulse peak forward recovery voltage	$V_{FRM}$	$2/10\mu s, I_F=100A, R_S=50\Omega, di/dt=80A/\mu s$			10	V
Off-state current	$I_D$	$V_D=-170V, V_{GK}=0, T_J=25^\circ C$			-5	$\mu A$
		$V_D=-170V, V_{GK}=0, T_J=85^\circ C$				
Impulse breakover voltage	$V_{(BO)}$	$2/10\mu s, I_{TM}=100A, R_S=50\Omega, di/dt=80A/\mu s, V_{GK}=-100V$			-112	V
Holding current	$I_H$	$I_T=-1A, di/dt=1A/ms, V_{GK}=-100V$	-150			mA
Gate reverse current	$I_{GAS}$	$V_{GK}=V_{GK}=-167V, V_{KA}=0, T_J=25^\circ C$			-5	$\mu A$
		$V_{GK}=V_{GK}=-167V, V_{KA}=0, T_J=85^\circ C$				
Gate trigger current	$I_{GT}$	$V_{AK}=40V, Value=3.5V, t_W=10ms$			5	mA
Gate trigger voltage	$V_{GT}$	$V_{AK}=40V, Value=3.5V, t_W=10ms$			2.5	V
Anode-cathode offstate capacitance	$C_{KA}$	$f=1MHz, V_D=1V, I_G=0, V_D=-3V$			110	pF
		$f=1MHz, V_D=1V, I_G=0, V_D=-48V$			55	

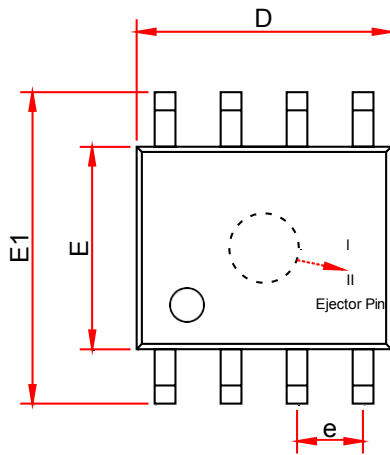
**Surge Test Circuit**


Pulse( $\mu s$ )		$V_p(V)$	$I_{pp}(A)$	$R_p(\Omega)$	$R_1(\Omega)$	$R_2(\Omega)$
$T_{rise}$	$T_{fall}$					
10	700	$\pm 2000$	$\pm 50$	40	0	0
10	1000	$\pm 400$	$\pm 40$	10	0	0
1.2	50	$\pm 5000$	$\pm 120$	2	40	40

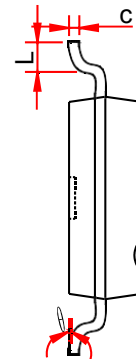


## Package Outline Dimensions

## SOP-8L



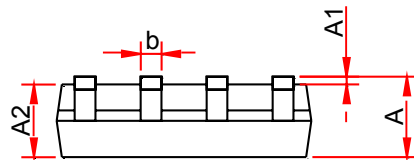
TOP VIEW



SIDE VIEW

I) NA

II)



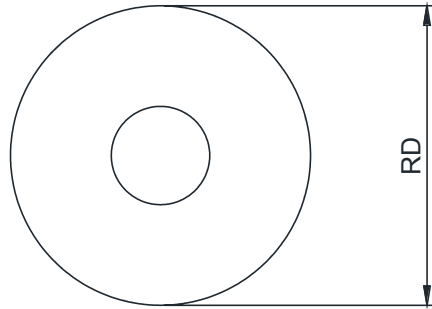
SIDE VIEW

Symbol	Dimensions In Millimeters (mm)		
	Min.	Typ.	Max.
A	1.35	1.55	1.75
A1	0.05	0.15	0.25
A2	1.25	1.40	1.65
b	0.33	-	0.51
c	0.15	-	0.26
D	4.70	4.90	5.10
E	3.70	3.90	4.10
E1	5.80	6.00	6.20
e	1.27BSC		
L	0.40	-	1.27
$\theta$	0°	-	8°

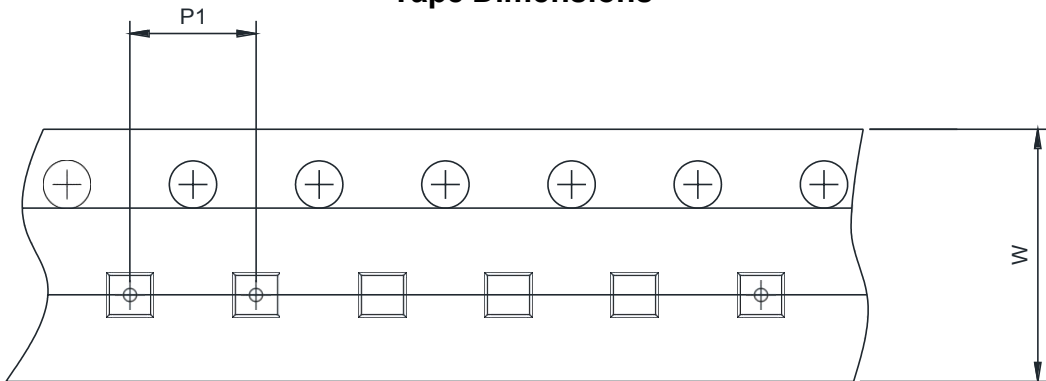


**Tape and Reel Information**

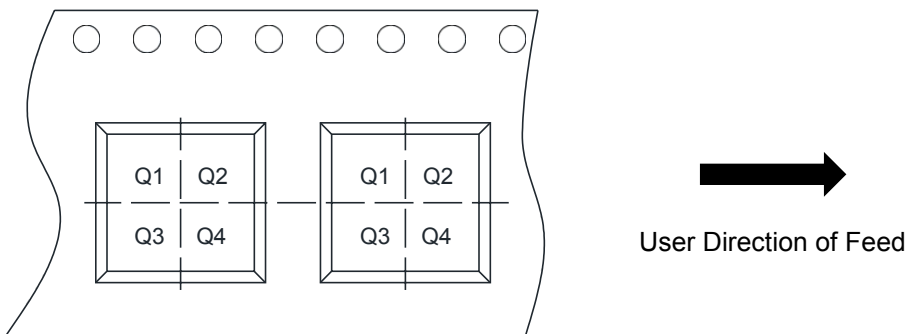
**Reel Dimensions**



**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		
P1	Pitch between successive cavity centers	<input type="checkbox"/> 2mm	<input type="checkbox"/> 4mm	<input checked="" type="checkbox"/> 8mm	
Pin1	Pin1 Quadrant	<input checked="" type="checkbox"/> Q1	<input type="checkbox"/> Q2	<input type="checkbox"/> Q3	<input type="checkbox"/> Q4

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