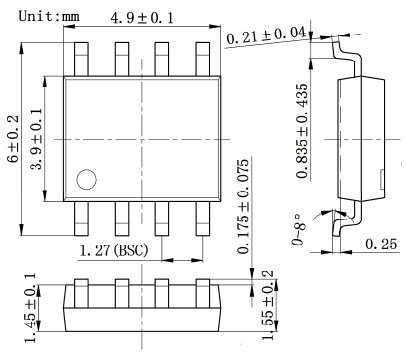
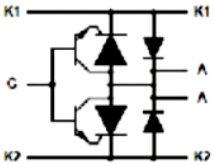
SOP-8 Plastic-Encapsulate Transistors

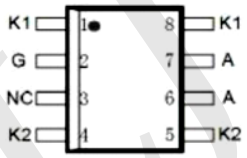
ALJP61089B

High Voltage Ringing SLIC Protector





Package & Device Symbol



Pin configuration (Top view)

Features

- Dual programmable transient suppressor
- Wide battery voltage supports
- Low gate triggering current
- High holding current.
- ESD Immunity(HBM): JESD22 Class 3B, ≥8KV
- MLS: Lever 1 – unlimited

Applications

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

Marking: ALJP61089B

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.

Pin configuration

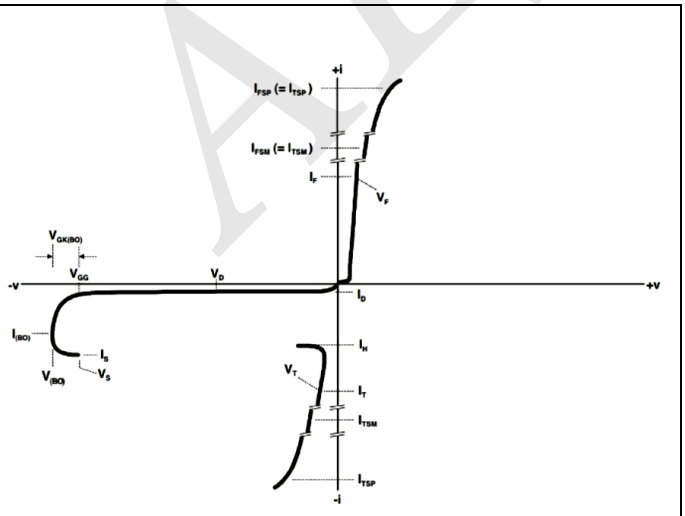
Pin #	Pin Name	Description
1,4,5,8	K1, K2	Connect to subscriber lines (Tip/Ring)
2	G	Connect to battery (Reference voltage)
6,7	A	Connect ground
3	NC	Not connected

Maximum Ratings (T_a=25°C unless otherwise noted)

Symbol	Parameter		Value	Unit
I_{PPSM}	Non-repetitive peak on-state pulse current	10/1000us (Telcordia (Bellcore) GR-1089-CORE, Issue 3）	30	A
		5/310us (TU-T K.20, K.21& K.45, K.44 open-circuit voltage wave shape 10/700 μs）	40	A
		2/10us (Telcordia (Bellcore) GR-1089-CORE, Issue 3)	120	A
I_{TSM}	Non repetitive peak on-state current (sinusoidal) 60Hz	0.1s	6.5	A
		1s	4.5	A
		5s	2.4	A
		30s	1.3	A
		900s	0.72	A
V_{DRM}	Repetitive peak off-state voltage, V_{GK} = 0		-170	V
V_{GKRM}	Repetitive peak gate-cathode voltage, VKA=0		-120	V
T_A	Operating free-air temperature range		-40 ~ 85	°C
T_{stg}	Storage temperature range		-40 ~ 150	°C
T_j	Junction temperature		-40 ~ 150	°C
T_L	Maximum lead temperature for soldering during 10s		260	°C
$R_{\theta JA}$	Junction to free air thermal resistance		120	°C/W

Parameter Measurement Information

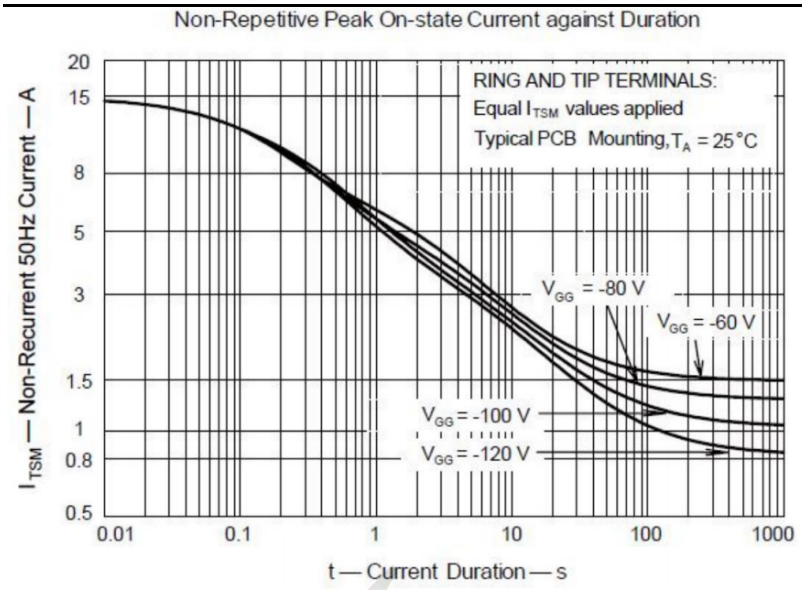
Symbol	Parameter
I_D	Off-state current
I_H	Holding current
$V_{(BO)}$	Breakover voltage
V_F	Forward voltage
V_{FRM}	Peak forward recovery voltage
$V_{GK(BD)}$	Gate-cathode impulse breakover voltage
I_{GKS}	Gate reverse current
I_{GT}	Gate trigger current
V_{GT}	Gate-cathode trigger voltage
C_{KA}	Cathode-anode off-state capacitance

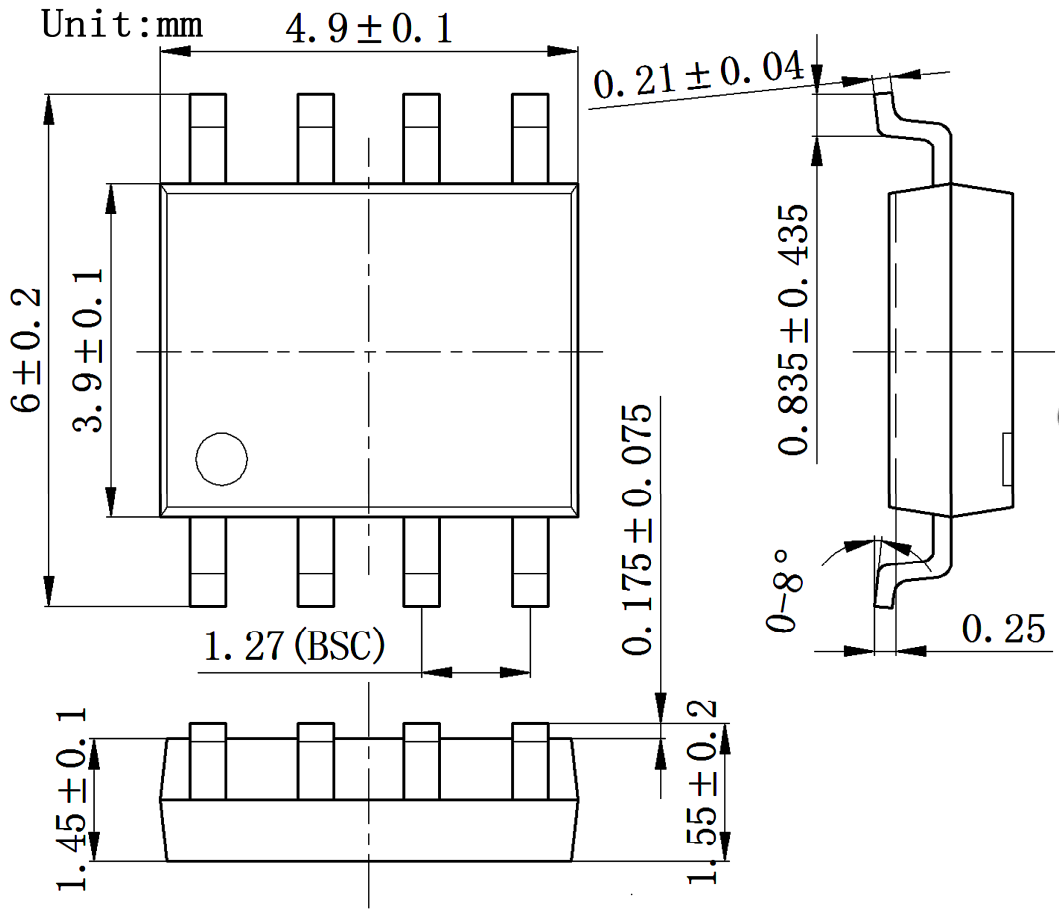


Electrical Characteristics (T_a=25°C unless otherwise specified)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V_F	Forward voltage	I_F = 5A, t_W = 200μs			3	V
V_{FRM}	Impulse peak forward recovery voltage	2/10μs, I_F = 100A, R_S = 50Ω, di/dt=80A/us			10	V
I_D	Off-state current	V_D= -120V, V_{GK}=0, T_J = 25°C			-5	μA
		V_D= -120V, V_{GK}=0, T_J = 85°C				
$V_{(BO)}$	Impulse breakover voltage	2/10μs, I_{TM} = 100A, R_S = 50Ω di/dt = -80A/μs, V_{GG} = -100V			-112	V
I_H	Holding current	I_T = -1A, di/dt = 1A/ms, V_{GG} = -100V	-150			mA
I_{GAS}	Gate reverse current	V_{GG}=V_{GK}= -167V, V_{KA}=0, T_J = 25 °C			-5	μA
		V_{GG}=V_{GK}= -167V, V_{KA}=0, T_J = 85 °C				
I_{GT}	Gate trigger current	I_T=3A, $t_{p(g)}$≥20us, V_{GG}=-100V			5	mA
V_{GT}	Gate trigger voltage	I_T=3A, $t_{p(g)}$≥20us, V_{GG}=-100V			2.5	V
C_{KA}	Anode-cathode offstate capacitance	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	

Typical Characteristics




Unit:mm
4.9±0.1
0.21±0.04
6±0.2
3.9±0.1
0.835±0.435
0.175±0.075
0-8°
0.25
1.27 (BSC)
1.45±0.1
1.55±0.2

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