

SOP-8 Plastic-Encapsulate Transistors

ALJP61089B

High Voltage Ringing SLIC Protector

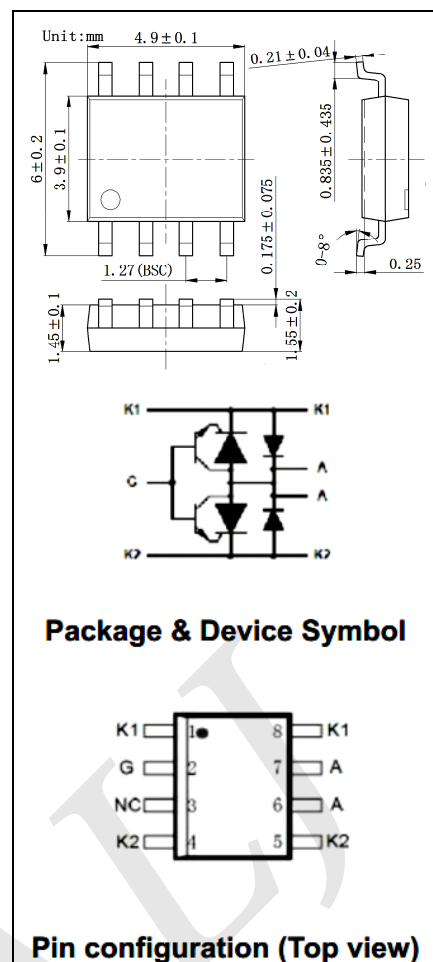
Features

- 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

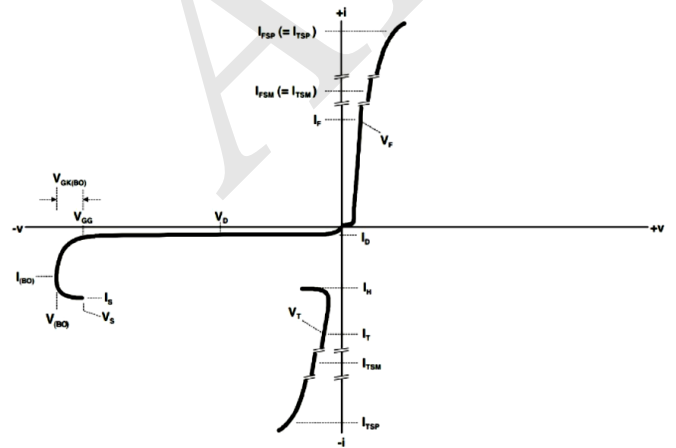
Pin #	Pin Name	Description
1,4,5,8	K1, K2	Connect to subscriber lines (Tip/Ring)
2	G	Connect to battery (Reference voltage)
6,7	A	Connect ground
3	NC	Not connected

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, V _{KA} =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 _{θJA}	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

Non-Repetitive Peak On-state Current against Duration

