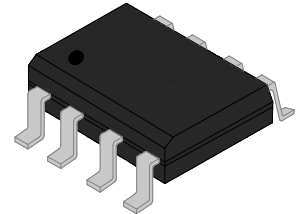


JIP61089B Dual Programmable Thyristor Transient Voltage Suppressor Rev.3.4

DESCRIPTION:

This device is especially designed to protect subscriber line card interfaces (SLIC) against transient overvoltages. Positive overloads are clipped with 2 diodes. Negative surges are suppressed by 2 thyristors, their breakdown voltage being referenced to $-V_{BAT}$ through the gate. This component presents a very low gate triggering current (I_{GT}) in order to reduce the current consumption on printed circuit board during the firing phase. A particular attention has been given to the internal wire bonding. The “4-point” configuration ensures reliable protection, eliminating the overvoltage introduced by the parasitic inductances of the wiring (Ldi/dt), especially for very fast transients.



Device package type SOP-8

FEATURES:

- ✧ Dual programmable transient suppressor.
- ✧ Wide negative firing voltage range: $V_{GKRM} = -167V$ max.
- ✧ Low dynamic switching voltage: V_{FRM} and $V_{GK(BD)}$
- ✧ Low gate triggering current: $I_{GT} = 5mA$ max.
- ✧ Peak pulse current: $I_{PP} = 30A$ for 10/1000 μs surge.
- ✧ Holding current: $I_H = 150mA$ min.

APPLICATION:

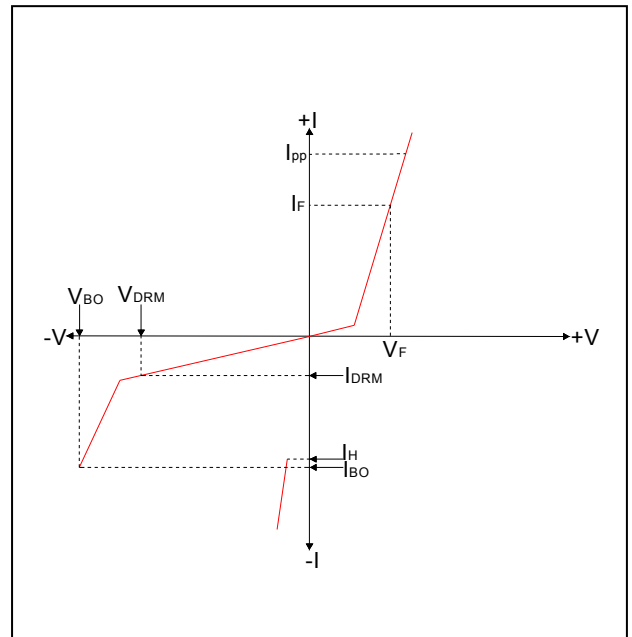
JIP61089B is designed to protect communication equipment such as SPC exchanger from being damaged by transient overvoltages at the second level.

TESTING STANDARDS

Type	Wave Sharp		V_{PP}/I_{PP}
ITU-T K.20/21 and K.45	Voltage	10/700 μs	3000V
	Current	5/310 μs	70A

ELECTERICAL CAHRACTERISTIC

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



ABSOLUTE MAXIMUM RATINGS ($T_A=25^{\circ}C$, RH=45%-75%, unless otherwise noted)

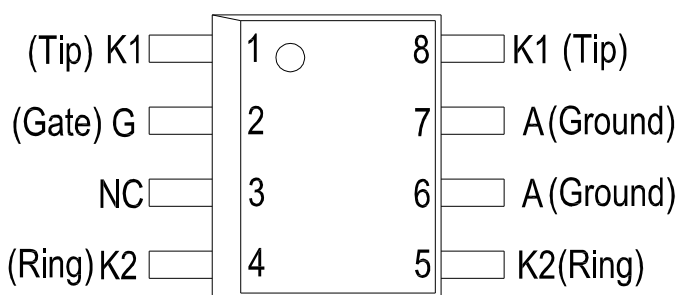
Parameter		Symbol	Value	Unit
Storage temperature range		T_{STG}	-40 to +150	$^{\circ}C$
Junction temperature		T_J	-40 to +150	$^{\circ}C$
Operating free-air temperature range		T_A	-40 to +85	$^{\circ}C$
Non-repetitive peak on-state pulse current				
10/1000 μs	(Telcordia (Bellcore) GR-1089-CORE, Issue 2, February)	I_{TSP}	30	A
5/310 μs	(ITU-T K.20/21& K.45/44 open-circuit voltage 10/700 μs)		70	
1.2/50 μs	(Telcordia (Bellcore) GR-1089-CORE, Issue 2, February)		120	
Non-repetitive peak pulse voltage(10/700 μs)		V_{PP}	3000	V
Non repetitive surge peak on-state current (sinusoidal) 60Hz	0.1s	I_{TSM}	11	A
	1s		4.5	
	5s		2.4	
	300s		0.95	
	900s		0.93	
Maximum voltage LINE/GROUND		V_{DRM}	-170	V
Maximum voltage GATE/LINE		V_{GKRM}	-167	V

Note1: 5/310 μs means current wave, and its rise time is 5 μs , fall time is 310 μs .
 10/700 μs means voltage wave, and its rise time is 10 μs , fall time is 700 μs .

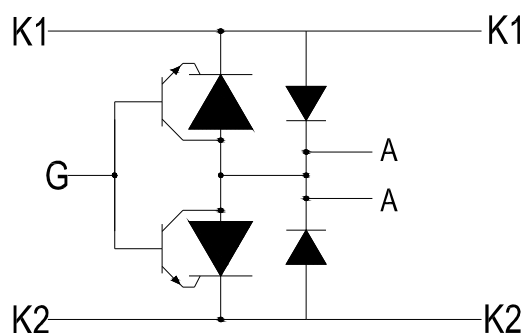
ELECTRICAL CHARACTERISTICS (T_A=25°C)

Symbol	Parameter	Test conditions	Value			Unit
			Min.	Typ.	Max.	
Parameters related to the diode						
V _F	Forward voltage	I _F =5A, t _w =200μs	-	-	3	V
V _{FRM}	Peak forward recovery voltage	2/10μs, I _F =100A, R _s =50Ω, di/dt=80A/μs	-	-	10	V
Parameters related to the protection thyristor						
I _{DRM}	Off-state current	V _{DRM} =-170V, V _{GK} =0V	-	-	-5	μA
V _{BO}	Break-over 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 _{GKS}	Gate reverse current	V _{GG} =V _{GK} =-167V, V _{KA} =0, T _J =25°C	-	-	-5	μA
I _{GT}	Gate trigger current	I _T =-3A, t _P (g)≥20μs, V _{GG} =-48V	-	-	5	mA
V _{GT}	Gate trigger voltage	I _T =3A, t _P (g)≥20μs, V _{GG} =-48V	-	-	2.5	V
C _{AK}	Anode-cathode off-state capacitance	f=1MHz, V _D =1V, I _G =0A, V _D =-3V	-	-	100	pF

SOP PACKAGE TOP VIEW AND DEVICE SYMBOL



Package (Top view)

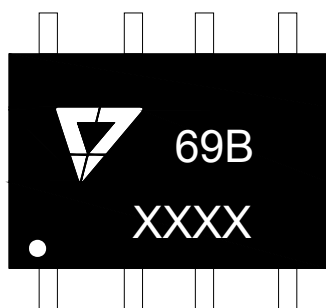


Device symbol

ORDERING INFORMATION

J	IP	61089	B
JieJie Microelectronics CO. , Ltd		Surge ratings:10/700μs 3KV	
Integrated protection device		Product number	

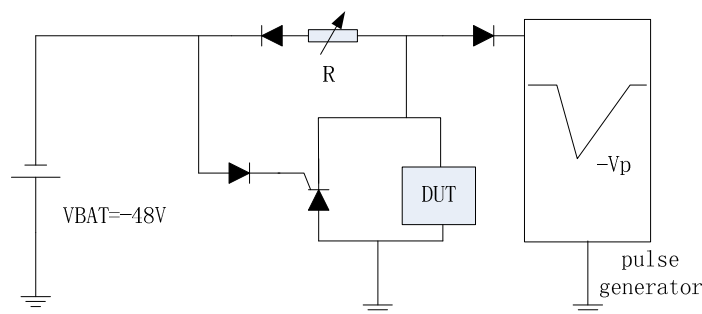
MARKING



69B: Device marking code
 XXXX: Date of manufacture

TEST METHOD AND CIRCUIT

Holding current test circuit(test circuit 1)



This is a conduction-cutoff test. The test circuit can ascertain the size of holding current.

Test method :

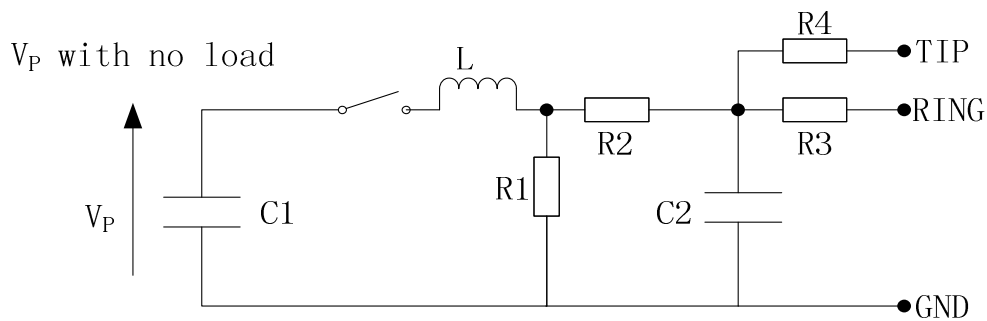
1. Short out DUT, regulating current in I_H range;
2. Triggering DUT with $I_{PP}=10A$, 10/1000μs surge current;
3. DUT needs to return to the off-state in the maximum 50ms.

This is a conduction-cutoff test. The test circuit can ascertain the size of holding current.

Test method :

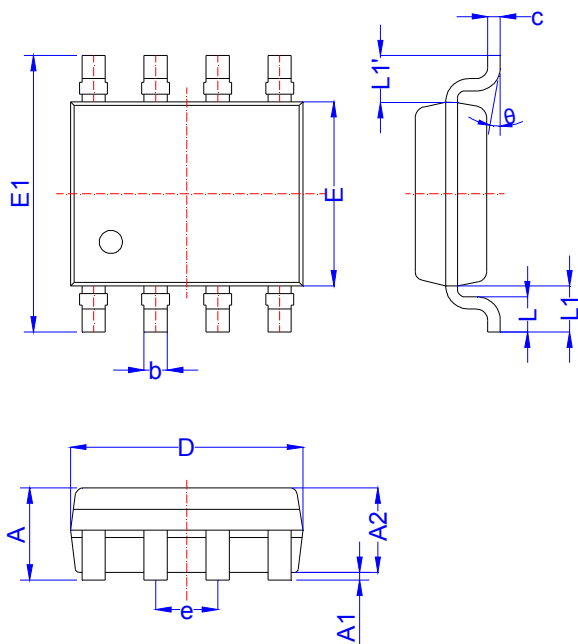
4. Shortout DUT, regulating current in I_H range;
5. Triggering DUT with $I_{PP}=10A$, 10/1000μs surge current;
6. DUT needs to return to the off-state in the maximum 50ms.

V_{FP} and V_{DGL} test circuit(test circuit 2)



Pulse(μs)		V _P (V)	C1 (μF)	C2 (nF)	L (μH)	R1 (Ω)	R2 (Ω)	R3 (Ω)	R4 (Ω)	I _{PP} (A)	R _P (Ω)
T _{rise}	T _{fall}										
10	700	1500	20	200	0	50	15	25	25	30	10
1.2	50	1500	1	33	0	76	13	25	25	30	10
2	10	2500	10	0	1.1	1.3	0	3	3	38	62

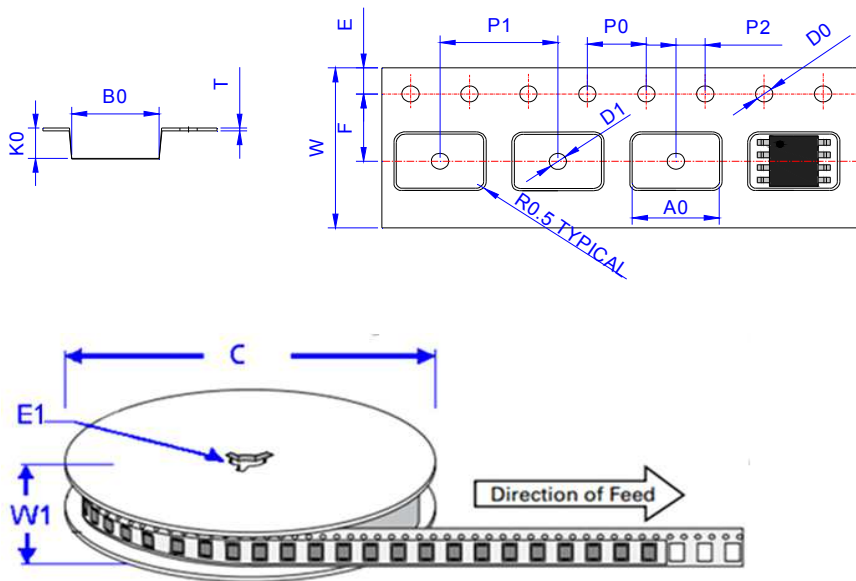
PACKAGE MECHANICAL DATA



SOP-8

Ref.	Dimensions					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	1.40		1.70	0.055		0.067
A1	0.05		0.15	0.002		0.006
A2	1.35		1.55	0.053		0.061
b	0.31		0.51	0.015		0.017
c	0.17		0.25	0.007		0.010
D	4.70		5.10	0.185		0.200
E	3.88		3.93	0.153		0.155
E1	5.80		6.20	0.228		0.244
e	1.14	1.27	1.40	0.045	0.050	0.055
L	0.62		0.77	0.024		0.030
L1	1.00	1.02	1.04	0.039	0.04	0.048
L1-L1'			0.12			0.005
θ	0°		8°	0°		8°

TAPE AND REEL SPECIFICATION-SOP-8



Ref.	Dimensions	
	Millimeters	Inches
A0	6.6±0.10	0.260 ± 0.004
B0	5.3±0.10	0.209 ± 0.004
C	330	13.0
D0	1.50±0.10	0.059 + 0.004
D1	1.50±0.10	0.059 + 0.004
E1	13.3±0.3	0.524± 0.012
E	1.75±0.1	0.069± 0.004
F	5.5±0.05	0.217 ± 0.002
K0	2.1±0.1	0.083 ± 0.004
P0	4.0±0.1	0.157± 0.004
P1	8.0±0.1	0.315± 0.004
P2	2.0±0.05	0.079 ± 0.002
T	0.24±0.1	0.009 ± 0.002
W	12.0±0.3	0.472 ± 0.012
W1	15.7±2.0	0.618 ± 0.079


PART No.	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	PER CARTON (PCS)	DESCRIPTION
JIP61089B	0.077	4,000	64,000	13 inch reel pack

Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co.,Ltd assumes no responsibility for the consequences of use without consideration for such information nor use beyond it.

Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement.

Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information.

This document is the 3.4th version which is made in 28-Feb.-2019. This document supersedes and replaces all information previously supplied.

 is a registered trademark of Jiangsu JieJie Microelectronics Co.,Ltd.

Copyright©2019 Jiangsu JieJie Microelectronics Co.,Ltd. Printed All rights reserved.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Gas Discharge Tubes - GDTs / Gas Plasma Arrestors](#) category:

Click to view products by [JieJie](#) manufacturer:

Other Similar products are found below :

[M51-A90X](#) [PMT1023004](#) [PMT1040004](#) [CG2800](#) [GTCR37-231M-R10](#) [WPGT-2N145B6L](#) [WPGT-2N230B6L](#) [WPGT-2N470B6L](#) [WPGT-2RM230A6L](#) [WPGT-2RM350A6L](#) [WPGT-2RM70A6L](#) [WPGT-2RM90A6L](#) [WPGT-2S145](#) [WPGT-2S350](#) [WPGT-2S470](#) [WPGT-3R350CF](#) [WPGT-3R350G1](#) [WPGT-3R90G1](#) [WPGT-3R75G1](#) [WPGT-3R470G1](#) [WPGT-3R250C](#) [WPGT-3R230G1](#) [WPGT-2S230](#) [WPGT-2RM145A6L](#) [WPGT-2R1000B8L](#) [WPGT-2N70B6L](#) [WPGT-2N350B6L](#) [WPGT-2N230B6L1](#) [CG2145](#) [T61-C350X](#) [9071.99.0547 \(73_Z-0-0-547\)](#) [B88069X6940B152](#) [RF1219-000](#) [A9L16618](#) [RF2339-000](#) [9071.99.0052\(73_Z-0-0-52\)](#) [9071.99.0054](#) [CG32.7L](#) [CG6400SM](#) [CG6470SM](#) [CG7250MS](#) [CG7400MS](#) [SPBT12-280/1](#) [SPCT2-280/3](#) [SPCT2-280/4](#) [T2 20KA 4P](#) [2003-09-SM-RPLF](#) [2026-07-A1](#) [2026-25-C3](#) [2039-80-BLF](#)