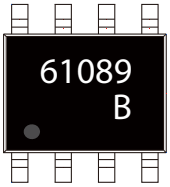
FEATURES

- 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 10/1000μs surge.
- Holding current: I_H=150mA min.

SOP-8



Marking

APPLICATIONS

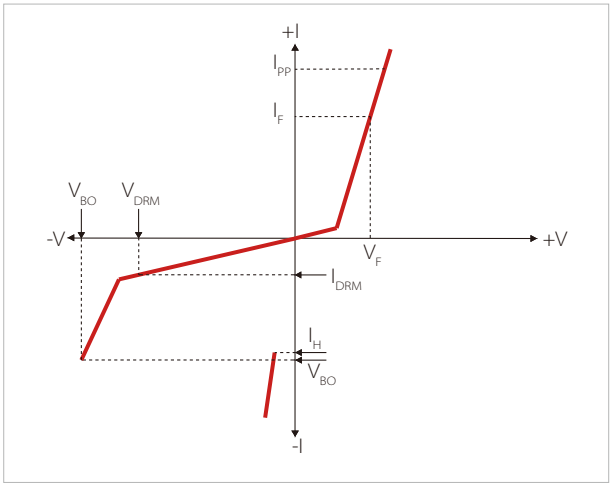
- Switch Line Card
- Access Network Line Card
- PBX
- VoIP

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

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°C)

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

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

TESTING STANDARDS

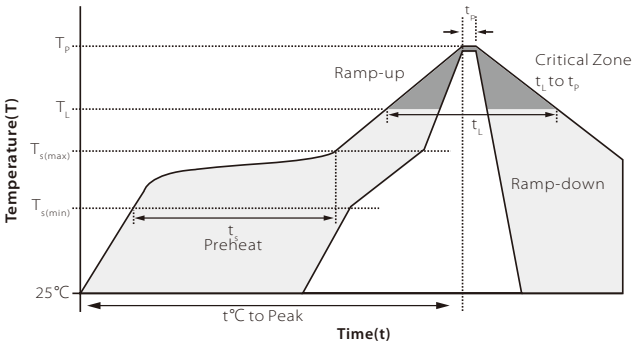
Type	Wave Sharp		V_{PP}/I_{PP}
ITU-T K.20/21and K.45	Voltage	10/700μs	3000V
	Current	5/310μs	70A

ELECTRICAL CHARACTERISTICS (T_A=25°C)

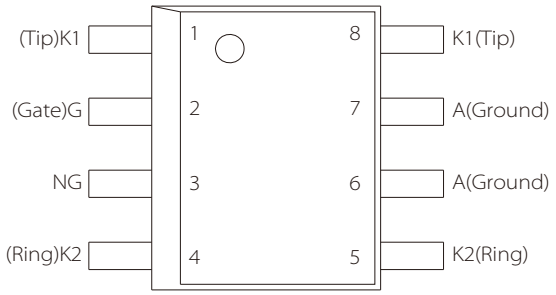
Symbol	Parameter	Test conditions	Value			Unit
			Min.	Typ.	Max.	
Parameters related to the diode						
V_F	Forward voltage	I_F=5A, t_W=200μs	-	-	3	V
V_{FRM}	Peak forward recovery voltage	2/10μs,I_F=100A,R_S=50Ω, di/dt=80A/μs	-	-	10	
Parameters related to the protection thyristor						
I_{DRM}	Off-state 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℃	-	-	-5	μA
I_{GT}	Gate trigger current	I_T=-3A, t_p(g)≥20μs, V_{GG}=-48V	-	-	5	mA
V_{GT}	Gate trigger voltage		-	-	2.5	V
C_{AK}	Anode-cathode off-state capacitance	f=1MHz, V_D=1V, I_G=0A, V_D=-3V	-	-	100	pF

REFLOW PROFILE

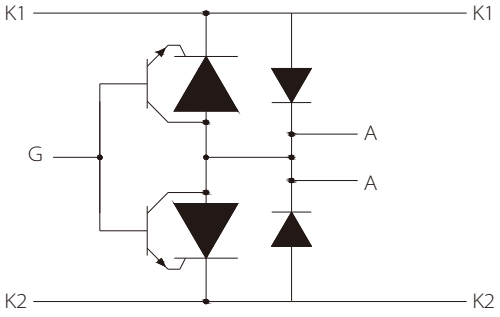
Reflow Condition		Lead-free assembly
Pre Heat	Temperature Min	150°C
	Temperature Max	200°C
	Time(min to max)	60~180 secs
Average ramp up rate (Liquidus)Temp (T_L) to peak		3°C/second max
T_s(max)to T_L - Ramp-up Rate		
Reflow	Temperature (T_L) (Liquidus)	217℃
	Time(min to max)(t_S)	60~150 seconds
Peak Temperature (T_p)		260 °C
Time within 5°C of actual peak Temperature (tp)		20~40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_p)		8 minutes max.
Do not exceed		260°C



SOP PACKAGE TOP VIEW AND DEVICE SYMBOL

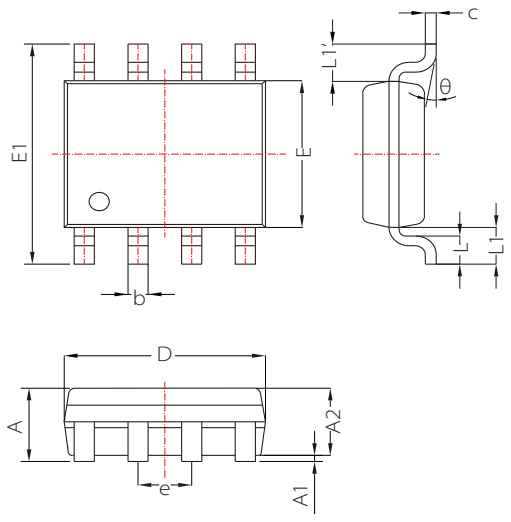


Package (Top view)



Device symbol

PACKAGE MECHANICAL DATA



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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	0.012		0.020
c	0.17		0.25	0.007		0.010
D	4.70		5.10	0.185		0.201
E	3.80		4.00	0.150		0.157
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	0.040	0.041
L1-L1'			0.12			0.005
θ	0°		8°	0°		8°

ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel
STP61089B	SOP-8	4000PCS	13"

Headquarters
No.3387 Shendu Road Pujiang
I&E Park
Minhang Shanghai China
201000

Hotline
400-021-5756

Web
Https://www.semiware.com

Sales Center
Tel: 86-21-3463-7458
Email: sales18@semiware.com

Customer Service
Tel: 86-21-5484-1001
Email: sales17@semiware.com

Technical Support
Tel: 86-21-3463-7654
Email: fae01@semiware.com

Complaint & Suggestions
Tel: 86-21-3463-7172
Ext: 8868
Email: cs03@semiware.com

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