

FEATURES

- Dual programmable transient suppressor.
- Wide negative firing voltage range: $V_{GKRM} = -16V$ 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.



SOP-8

APPLICATIONS

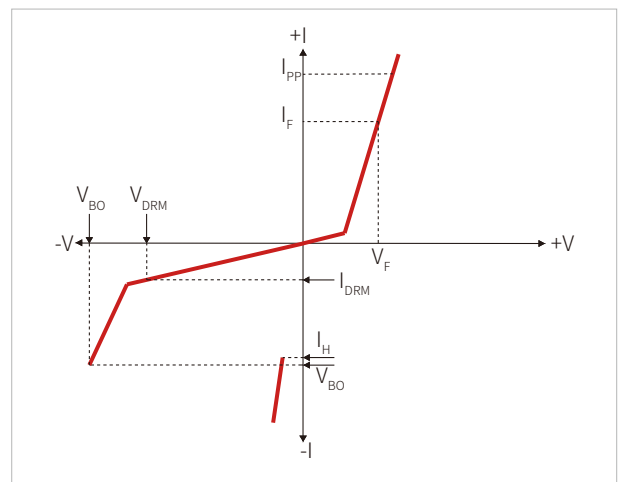
- Switch Line Card
- Access Network Line Card
- PBX
- VoIP

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 ($T_A=25^{\circ}\text{C}$)

Symbol	Parameter		Value	Unit
T _{STG}	Storage temperature range		-40 to +150	°C
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	50	
	(Telcordia (Bellcore) GR-1089-CORE, Issue 2, February)	1.2/50μs	120	
V _{PP}	Non-repetitive peak pulse voltage(10/700μs)		2000	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: 5/310 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 .

TESTING STANDARDS

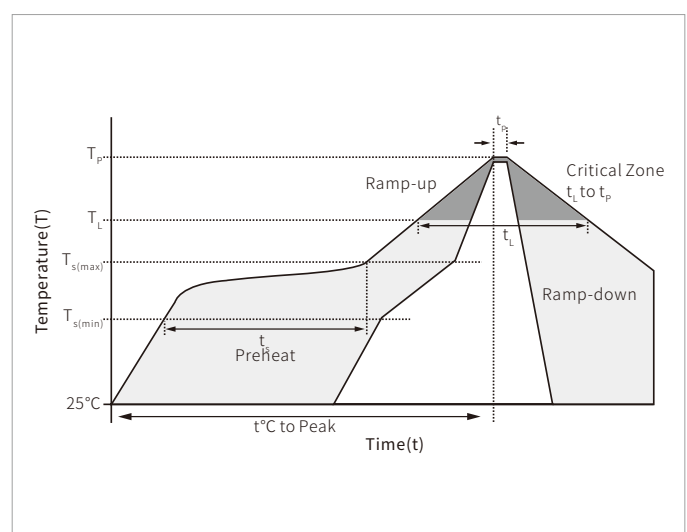
Type	Wave Sharp		$V_{\text{PP}}/I_{\text{PP}}$
ITU-T K.20/21and K.45	Voltage	10/700 μs	2000V
	Current	5/310 μs	50A

ELECTRICAL CHARACTERISTICS (T_A=25°C)

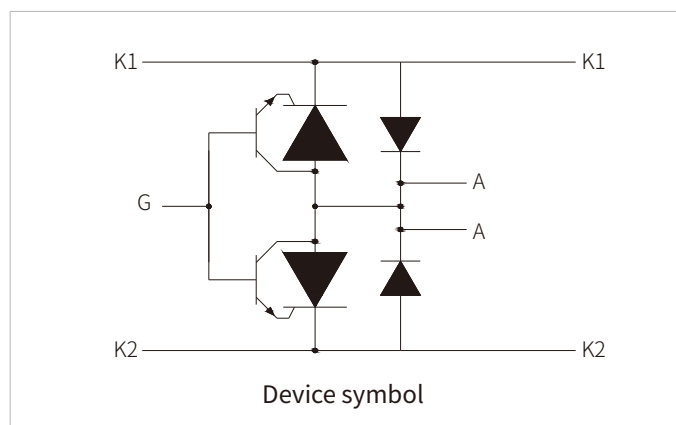
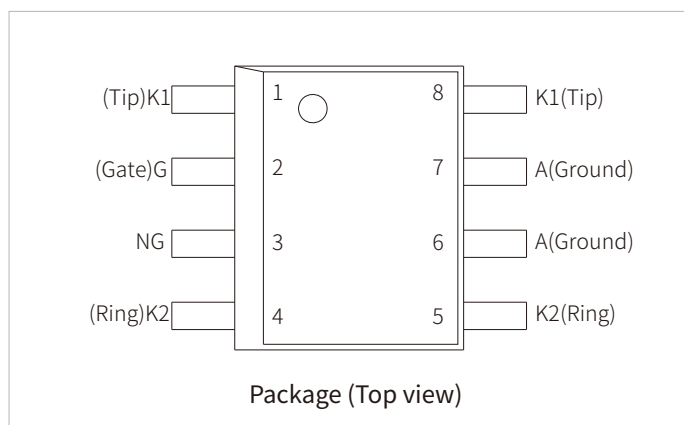
Symbol	Parameter	Test conditions	Value			Unit
			Min.	Typ.	Max.	
Parameters related to the diode						
V _F	Forward voltage	I _F =5A, t _w =200μs	-	-	3	V
V _{FRM}	Peak forward recovery voltage	2/10μs, I _F =100A, R _S =50Ω, di/dt=80A/μs	-	-	10	
Parameters related to the protection thyristor						
I _{DRM}	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°C	-	-	-5	μA
I _{GT}	Gate trigger current	V _{GND} /I _{INE} =-100V	-	-	7	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

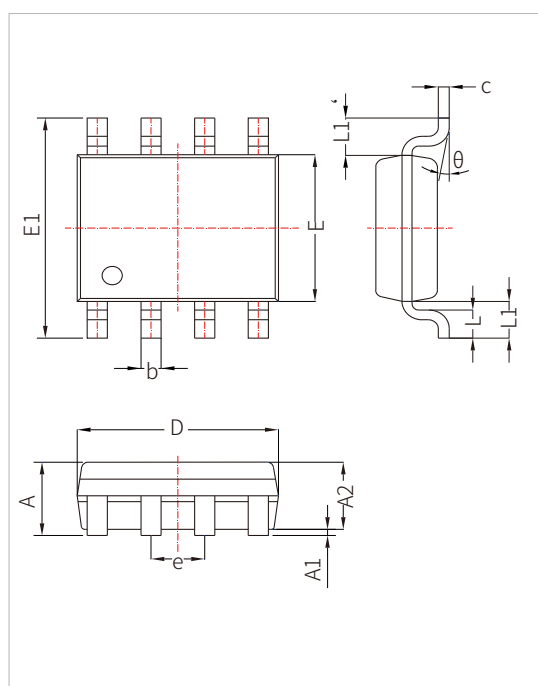
Reflow Condition		Lead-free assembly
Pre Heat	Temperature Min	150°C
	Temperature Max	200°C
	Time(min to max)	60~180 secs
Average ramp up rate (Liquidus) Temp (T _L) to peak T _s (max) to T _L - Ramp-up Rate		3°C/second max
Reflow	Temperature (T _L) (Liquidus)	217°C
	Time(min to max)(t _s)	60~150 seconds
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



SOP-8 PACKAGE MECHANICAL DATA



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		5.30	0.185		0.209
E	3.80		4.20	0.150		0.165
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
STP61089BL	SOP-8	4000PCS	13''

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