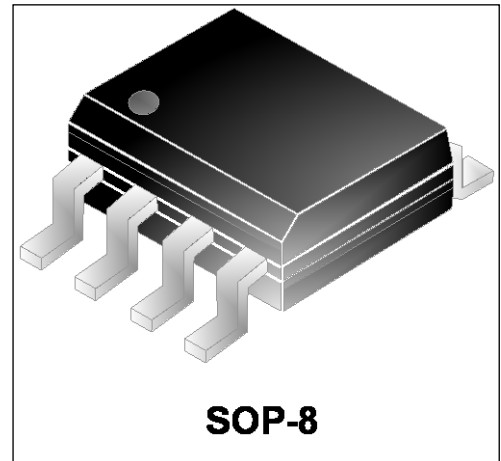


WEOS 61089

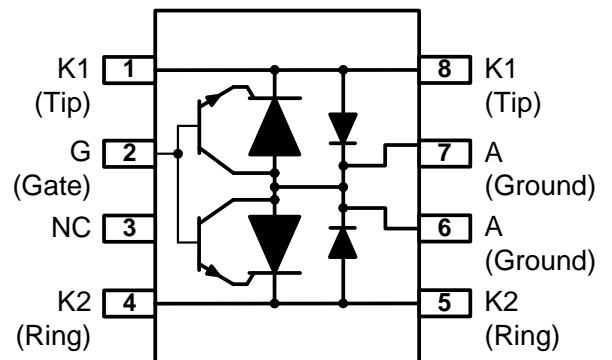
Features

- Dual programmable transient suppressor.
- Wide negative firing voltage range:
 $V_{GKRM} = -85V$ 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 10/1000us surge
- Holding current:
 $I_H = 150mA$ min.



Description

This device has been especially designed to protect subscriber line card interfaces (SLIC) against transient over-voltages. 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 configuration ensures reliable protection, eliminating the overvoltage introduced by the parasitic inductances of the wiring (Ldi/dt), especially for very fast transients.



Complies with The Following Standards

YD/T 950-1998
ITU-T K.20
FCC part 68
GR-1089-CORE

'1089 TEST CLAUSE AND TEST #	Voltage waveform (μ s)	Required peak current (A)
4.5.8 Second-Level 1	2/10 μ s	120
4.5.7 first-Level 3	10/1000 μ s	30

'1089 TEST CLAUSE AND TEST #	60 Hz power fault time	Required peak current (A)
4.5.13 Second-Level 2	100ms	11
4.5.13 Second-Level 2	1s	4.5
4.5.13 Second-Level 2	5s	2.4
4.5.13 Second-Level 1	300s	0.95
4.5.13 Second-Level 1	900s	0.93

Absolute Maximum Ratings

Symbol	Parameter	Value	Unit
I_{PP}	Non-repetitive peak on-state pulse current		
	10/1000 μ s	30	A
	5/310 μ s	40	
2/10 μ s	120		
I_{TSM}	Non repetitive surge peak on-state current (sinusoidal) 60Hz		A
	0.1s	11	
	1s	4.5	
	5s	2.4	
	300s	0.95	
900s	0.93		
V_{DRM}	Maximum voltage LINE/GROUND	-100	V
V_{GKRM}	Maximum voltage GATE/LINE	-85	
T_A	Operating free-air temperature range	-40~85	$^{\circ}$ C
T_{STG}	Storage temperature range	-40~150	
T_J	Junction temperature	-40~150	
T_L	Maximum lead temperature for soldering during 10S	260	
RTH(j-a)	Junction to ambient	170	$^{\circ}$ C/W

Electrical Characteristics ($T_{amb}=25^{\circ}\text{C}$)

Symbol	Parameter
ID	Off-state current
IH	Holding current
V(BO)	Breakover voltage
VF	Forward voltage
VFRM	Peak forward recovery voltage
VGK(BD)	Gate-cathode impulse breakover voltage
IGKS	Gate reverse current
IGT	Gate trigger current
VGT	Gate-cathode trigger voltage
CKA	Cathode-anode off-state capacitance

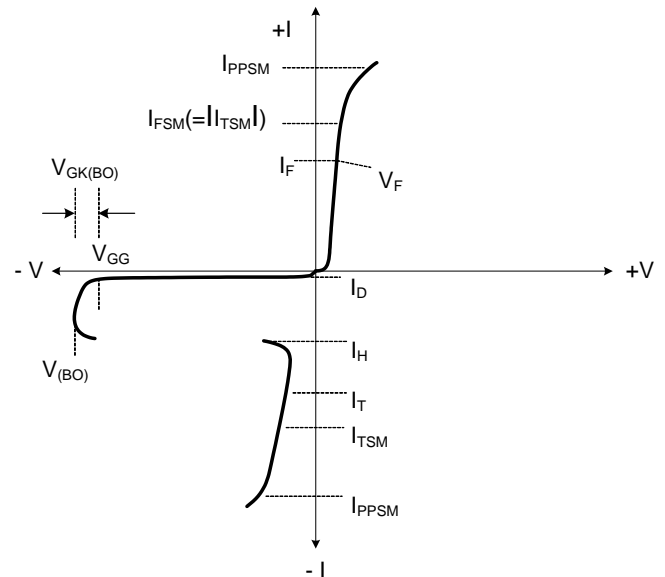


Figure 1. Voltage-Current Characteristic
Unless Otherwise Noted, All Voltages are
Referenced to the Anode

Parameters Related to The Diode ($T_{amb}=25^{\circ}\text{C}$)

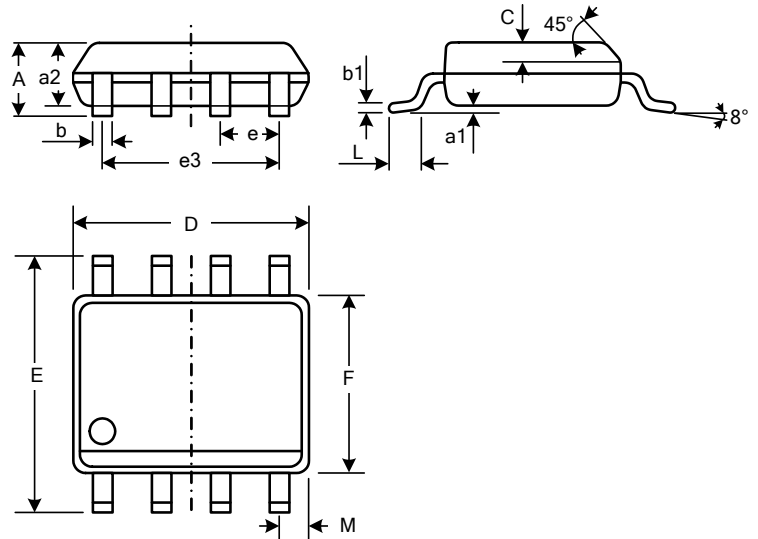
Parameter	Test conditions	Min.	Typ.	Max.	Unit.
V _F forward voltage	I _F =5A, t _w =200μs			3	V
V _{FRM} peak forward recovery voltage	10/700μs, 1.5kV, R _P =10Ω 2/10μs, I _F =56A, R _S =45Ω, V _{GG} =-48V, C _G =220nF 2/10μs, I _F =100A, R _S =50Ω, V _{GG} =-48V, C _G =220nF 1.2/50μs, I _F =53A, R _S =47Ω, V _{GG} =-48V, C _G =220nF 1.2/50μs, I _F =96A, R _S =52Ω, V _{GG} =-48V, C _G =220nF		6 8 8 12	5	V

Parameters Related to The Protection Thyristor ($T_{amb}=25^{\circ}\text{C}$)

Parameter	Test conditions	Min.	Typ.	Max.	Unit.
I _D off-state current	V _D =-85V, V _{GK} =0			-5 -50	μA μA
V _{BO} breakover voltage	10/700μs, 1.5kV, R _P =10Ω, I _{pp} =30A 2/10μs, I _T =-56A, R _S =45Ω, V _{GG} =-48V, C _G =220nF 2/10μs, I _T =-100A, R _S =50Ω, V _{GG} =-48V, C _G =220nF 1.2/50μs, I _T =-53A, R _S =47Ω, V _{GG} =-48V, C _G =220nF 1.2/50μs, I _T =-96A, R _S =52Ω, V _{GG} =-48V, C _G =220nF		-57 -60 -60 -64	-58	V
I _H holding current	I _T =-1A, di/dt=1A/ms, V _{GG} =-48V	-150			mA
I _{GAS} gate reverse current	V _{GG} =V _{GK} =-75V, V _{KA} =0			-5 -50	μA 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
Q _{GS} gate switching charge	1.2/50μs, I _T =-53A, R _S =47Ω, V _{GG} =-48V, C _G =220nF		0.1		μC
C _{AK} anode-cathode off-state capacitance	f=1MHz, V _d =1V, I _G =0			110 55	pF pF

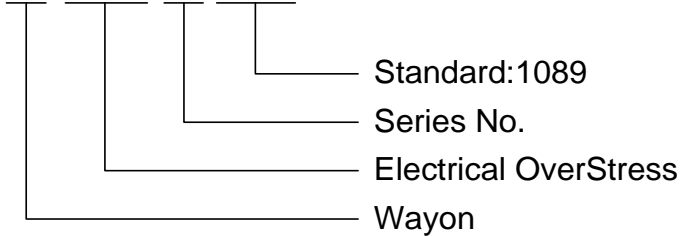
Product Dimensions

Ref. (mm)	Min.	Typ.	Max.
A			1.75
a1	0.10		0.25
a2			1.65
b	0.35		0.48
b1	0.19		0.25
C		0.50	
D	4.80		5.00
E	5.80		6.20
e		1.27	
e3		3.81	
F	3.80		4.00
L	0.40	0.85	1.27
M			0.6



Order Code for Protectors

W EOS 6 1089



MARKING:

L69W

Package Information

Tape & Real: 2500 pcs.