Dual Programmable Thyristor Transient Voltage Suppressor

Features

- Dual Voltage-Tracking Protectors
- Wide negative pressure range: V_{MGL}= -167 V max
- Low dynamic switching voltages: V_{FP} and V_{DGL}
- Low gate triggering current: I_{GT} = 5 mA max
- Peak pulse current: I_{PP} = 50 A (10/700μs)
- Hozlding current: I_H≥150 mA

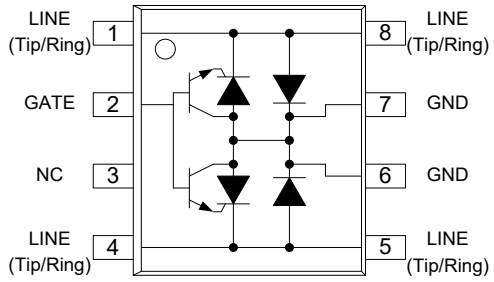
Applications

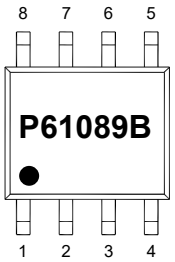
P61089B is designed to protect communication equipment such as SPC exchanger from damaging overvoltage transients in the second leve

Mechanical Date

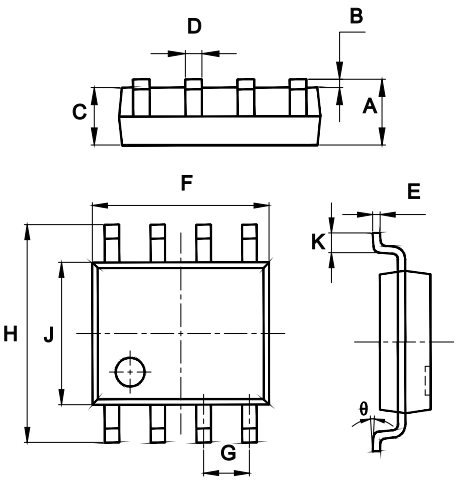
- Package: SOP-8
  Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102

Internal Structure and Marking Code



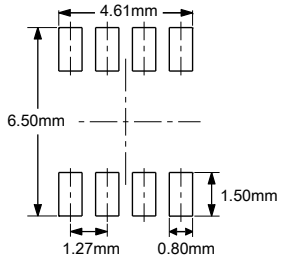


SOP-8



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.053	0.069	1.35	1.75	
B	0.004	0.010	0.10	0.25	
C	0.053	0.061	1.35	1.55	
D	0.013	0.020	0.33	0.51	
E	0.007	0.010	0.17	0.25	
F	0.185	0.200	4.70	5.10	
G	0.050		1.270		TYP.
H	0.228	0.244	5.80	6.20	
J	0.150	0.157	3.80	4.00	
K	0.016	0.050	0.40	1.27	
θ	0°	8°	0°	8°	

Suggested Solder Pad Layout



Testing Standards

Type	Vave sharp		ITSP
ITU-T K.20/21 and K.45	Voltage	10/700μs	50A
	Current	5/310μs	

Maximum Ratings

Parameter		Symbol	Value	Unit
Non-repetitive peak pulse voltage(Note1)	10/700μs	V_{PP}	2000	V
Non-repetitive peak pulse current(Note 2)	5/310μs	I_{PP}	50	A
Non repetitive surge peak on-state current (60 Hz sinusoidal)	tp =500ms	I_{TSM}	6.5	A
	t=1s		4.6	
Maximum voltage (Line to GND)		V_{MLG}	-170	V
Maximum voltage (Gate to Line)		V_{MGL}	-167	V
Storage temperature range		T_{stg}	-55~150	℃
Junction temperature		T_j	150	℃
Maximum temperature for soldering during 10s		T_L	260	℃

Note：1、10/700μs means voltage wave，and its rise time is 10μs，fail time is 700μs；
2、5/310μs means current wave，and its rise time is 5μs，fail time is 310μs。

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Symbol	Parameter
V_F	Line-ground voltage
V_{FP}	Line-ground peak voltage
I_{GT}	Gate trigger current
I_H	Holding current
V_{GT}	Gate-cathode trigger voltage
I_{RG}	Gate-line reverse leakage current
V_{DGL}	Gate-line dynamic switching voltage
I_R	Line-ground reverse leakage current
V_{GATE}	Gate-ground voltage
C	Line-ground off state capacitance

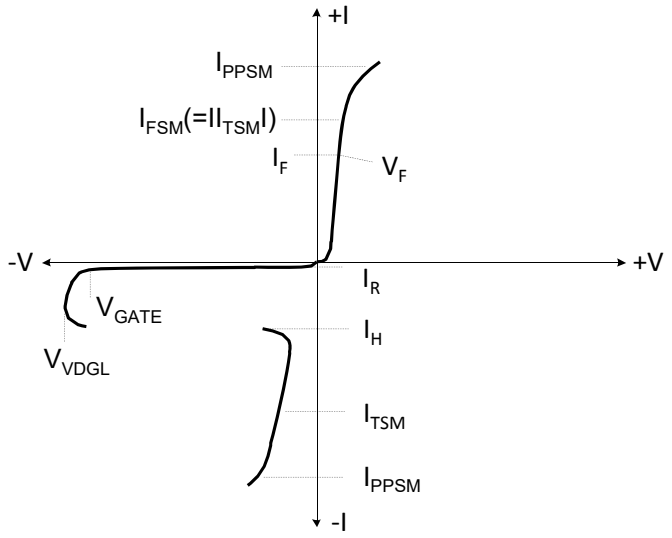


Figure 1. Voltage-Current Characteristic
Unless Otherwise Noted, All Voltages are Referenced to the Anode

Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Line-ground diode parameters						
Forward voltage	V_F	I_F=5A， T_P=500μs			3	V
Peak forward voltage(1)	V_{FP}	10/700μs，1.5kV，R_P=10Ω			5	V
Thyristor parameters						
Gate trigger current	I_{GT}	$V_{GND-LINE}$=-100V	0.1		5	mA
Holding current)	I_H	V_{GATE}=-100V	150			mA
Gate trigger voltage	V_{GT}	$V_{GND-LINE}$=-100V			2.5	V
Gate-Line Reverse leakage current	I_{RG}	T_C=25℃ V_{RG}=-170V			5	μA
		T_C=70℃ V_{RG}=-170V			50	
Gate-Line Dynamic switching voltage(2)	V_{DGL}	V_{GATE}=-100V 10/700μs，1.5kV，R_P=10Ω			10	V
Thyristor and diode parameters						
Line-GND Reverse leakage current	I_R	T_C=25°C $V_{GATE/LINE}$=-1V V_{RM}= -167V			5	μA
		T_C=70℃ $V_{GATE/LINE}$=-1V V_{RM}= -167V			50	
Line-GND off state capacitance	C	V_R= -3V, F=150KHz			100	pF
		V_R= -48V, F=150KHz			50	

Note：1、R_P is the protective resistance mounted on the card.
2、Don't make record if fluctuation time is less than 50ns.

Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 4Kpcs/Reel

Mouser Electronics

Authorized Distributor

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Micro Commercial Components (MCC):

P61089B-TP