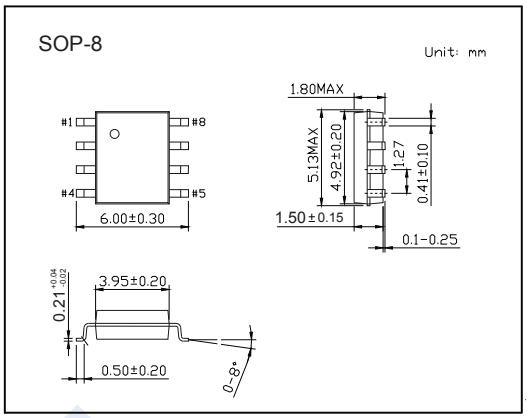
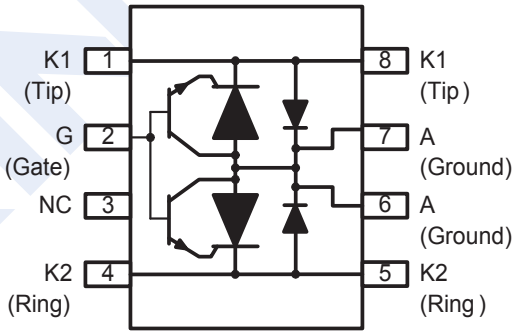
Thyristor Programmable Overvoltage Protector

1KE61089DY

■ 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 10/1000us surge
- Holding current:
  I_H=150mA min.
- Complies with The Following Standards
  YD/T 950-1998
  ITU-T K.20
  FCC part 68
  GR-1089-CORE





■ Absolute Maximum Ratings

Parameter		Symbol	Value	Unit
Non-repetitive peak on-state pulse current	10/1000μs	I_{PP}	30	A
	5/310μs		40	
	2/10μs		120	
Non repetitive surge peak on-state current (sinusoidal) 60Hz	0.5s	I_{TSM}	6.5	
	1s		4.5	
	5s		2.3	
	30s		1.3	
	900s		0.72	
Maximum voltage LINE/GROUND		V_{DRM}	-170	V
Maximum voltage GATE/LINE		V_{GKRM}	-167	
Junction to ambient		$R_{TH(j-a)}$	120	℃/W
Operating free-air temperature range		T_A	-40 to +85	℃
Lead soldering temperature		T_L	260	
Operating temperature		T_J	-40 to +150	
Storage temperature range		T_{STG}	-40 to +150	

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■ Electrical Characteristics (Tamb=25℃)

Symbol	Parameter
I_D	Off-state current
I_H	Holding current
$V_{(BO)}$	Breakover voltage
V_F	Forward voltage
V_{FRM}	Peak forward recovery voltage
$V_{GK(BO)}$	Gate-cathode impulse breakover voltage
I_{GKS}	Gate reverse current
I_{GT}	Gate trigger current
V_{GT}	Gate-cathode trigger voltage
C_{KA}	Cathode-anode off-state capacitance

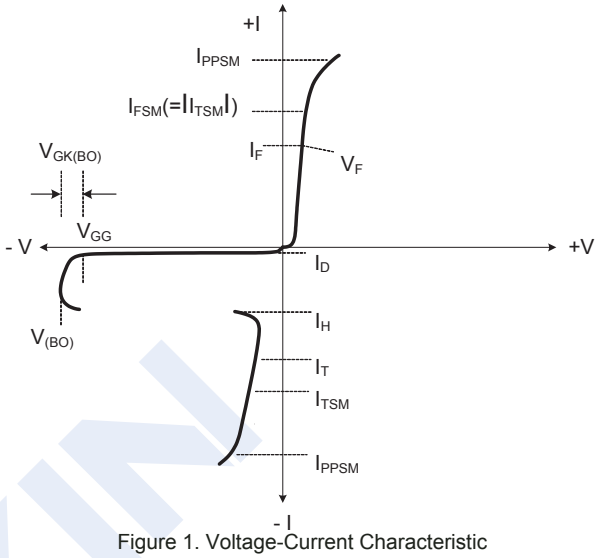

Figure 1. Voltage-Current Characteristic
Unless Otherwise Noted, All Voltages are Referenced to the Anode

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Off-state current	I_D	V_D=-170V, V_{GK}=0	T_J=25℃			-5	μA
			T_J=85℃			-50	
Breakover voltage	V_{BO}	2/10μs, I_T=-100A, R_S=50Ω, V_{GG}=-100V, C_G=220nF				-112	V
Holding current	I_H	I_T=-1A, di/dt=1A/ms, V_{GG}=-100V		-150			mA
Gate reverse current	I_{GKS}	V_{GG}=V_{GK}=-100V, V_{KA}=0	T_J=25℃			-5	μA
			T_J=85℃			-50	
Gate trigger current	I_{GT}	I_T=3A, tp(g)≥20μs,V_{GG}=-100V				5	mA
Gate trigger voltage	V_{GT}	I_T=3A, tp(g)≥20μs,V_{GG}=-100V				2.5	V
Gate switching charge	Q_{GS}	1.2/50μs, I_T=-53A,R_S=47Ω, V_{GG}=-100V,C_G=220nF			0.1		μC
Cathode-anode off-state capacitance	C_{KA}	f=1MHz,Vd=1V,I_G=0	V_D=-3V			100	pF
			V_D=-48V			50	
Diode forward voltage	V_F	I_F=5A, tw=200μs				3	V
Diode peak forward recovery voltage	V_{FRM}	2/10μs, I_F=100A, R_S=50Ω, V_{GG}=-100V, C_G=220nF				10	

■ Marking

Marking	61089