

# DATA SHEET

## THYRISTOR SURGE SUPPRESSORS MODEMS/LINE CARD

G170B series

RoHS compliant & Halogen free



Product specification— November 06, 2018 V.0



## Programmable Overvoltage Protector G170B

### General Description

This device is especially designed to protect Subscriber Line Interface Circuit (SLIC) against transient overvoltage. 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.

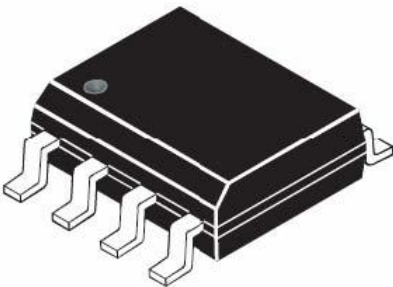
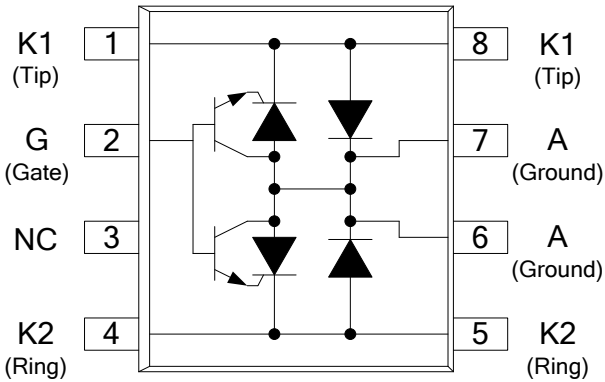
This component presents a very low gate triggering current and minimizes overvoltage stress on the SLIC.

### Features

- Dual programmable transient suppressor
- Wide battery voltage supports
- Low gate triggering current
- High holding current
- ESD Immunity(HBM): JESD22 Class 3B,  $\geq 8KV$
- MLS: Level 1-unlimited
- Marking: G170B

### Applications

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

Package	Device Symbol
 <p style="text-align: center; margin-top: 10px;">SOP-8</p>	

**Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$ )**

Parameter	Symbol	Value	Unit
Non-repetitive peak on-state current 10/1000 $\mu\text{s}$ 5/310 $\mu\text{s}$ 2/10 $\mu\text{s}$	$I_{PP}$	30 40 120	A
Non-repetitive peak on-state current (sinusoidal) 60Hz 0.5s 1s 5s 30s 900s	$I_{TSM}$	6.5 4.5 2.4 1.3 0.72	A
Maximum voltage Line/Ground	$V_{DRM}$	-170	V
Maximum voltage Gate/Line	$V_{GKRM}$	-167	V
Operating free-air temperature range	$T_A$	-40 to +85	$^\circ\text{C}$
Storage temperature range	$T_{STG}$	-40 to +150	$^\circ\text{C}$
Junction temperature range	$T_J$	-40 to +150	$^\circ\text{C}$
Maximum lead temperature for soldering during 10s	$T_L$	260	$^\circ\text{C}$
Junction to free air thermal resistance	$R_{\theta JA}$	120	$^\circ\text{C/W}$

**Parameter Measurement Information**

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

**Electrical Characteristics, Rating at 25°C unless otherwise specified**

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V <sub>F</sub> Forward voltage	I <sub>F</sub> =5A, t <sub>w</sub> =200μs			3	V
V <sub>FRM</sub> Peak forward recovery voltage	2/10μs, I <sub>F</sub> =100A, R <sub>S</sub> =50Ω, di/dt=80A/μs			10	V
I <sub>D</sub> Off-state current	V <sub>D</sub> =-170V, V <sub>GK</sub> =0 T <sub>J</sub> =25°C V <sub>D</sub> =-170V, V <sub>GK</sub> =0 T <sub>J</sub> =85°C			-5 -50	μA
V <sub>(BO)</sub> Breakover voltage	2/10μs, I <sub>TM</sub> =100A, R <sub>S</sub> =50Ω, di/dt=80A/μs, V <sub>GG</sub> =-100V			-112	V
I <sub>H</sub> Holding current	I <sub>T</sub> =-1A, di/dt=1A/ms, V <sub>GG</sub> =-100V	-150			mA
I <sub>GKS</sub> Gate reverse current	V <sub>GG</sub> =V <sub>GK</sub> =-167V, V <sub>KA</sub> =0 T <sub>J</sub> =25°C V <sub>GG</sub> =V <sub>GK</sub> =-167V, V <sub>KA</sub> =0 T <sub>J</sub> =85°C			-5 -50	μA
I <sub>GT</sub> Gate trigger current	I <sub>T</sub> =-3A, t <sub>p(g)</sub> ≥20μs, V <sub>GG</sub> =-100V			5	mA
V <sub>GT</sub> Gate-cathode trigger voltage	I <sub>T</sub> =-3A, t <sub>p(g)</sub> ≥20μs, V <sub>GG</sub> =-100V		2.5	4	V
C <sub>KA</sub> Cathode-anode off- state capacitance	f=1MHz, V <sub>d</sub> =1V, I <sub>G</sub> =0 V <sub>D</sub> =-3V f=1MHz, V <sub>d</sub> =1V, I <sub>G</sub> =0 V <sub>D</sub> =-48V			100 50	pF

**Dimensions (SOP-8)**

Symbol	Dimension (mm)		
	Min.	Typ.	Max.
A	-	-	1.75
A1	0.10	-	0.25
A2	1.35	1.55	1.75
B	0.35	0.42	0.49
C	0.19	-	0.25
D	4.80	4.90	5.00
E	5.80	6.00	6.20
E1	3.80	3.95	4.00
e	-	1.27	-
L	0.40	-	0.90
K	0°	-	8°

## Tape Package Information

