

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

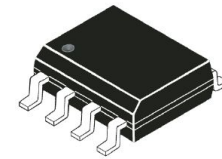
- Dual programmable transient suppressor
- Wide battery voltage supports
- Low gate triggering current
- High holding current
- ESD Immunity(HBM): JESD22 Class 3B, $\geq 8KV$
- MLS: Lever 1 - unlimited

Applications

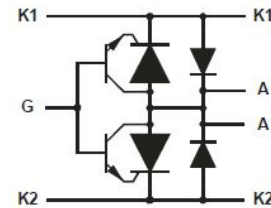
- Switch Line Card
- Access Network Line Card
- PBX
- VoIP

Pin Configuration

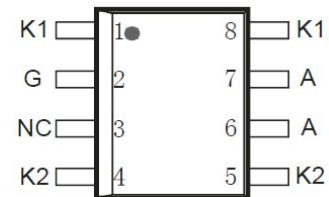
Pin #	Pin Name	Description
1, 4, 5, 8	K1, K2	Connect to subscriber lines (Tip/Ring)
2	G	Connect to battery (Reference Voltage)
6, 7	A	Connect ground
3	NC	Not connected



SOP-8



Schematic Diagram

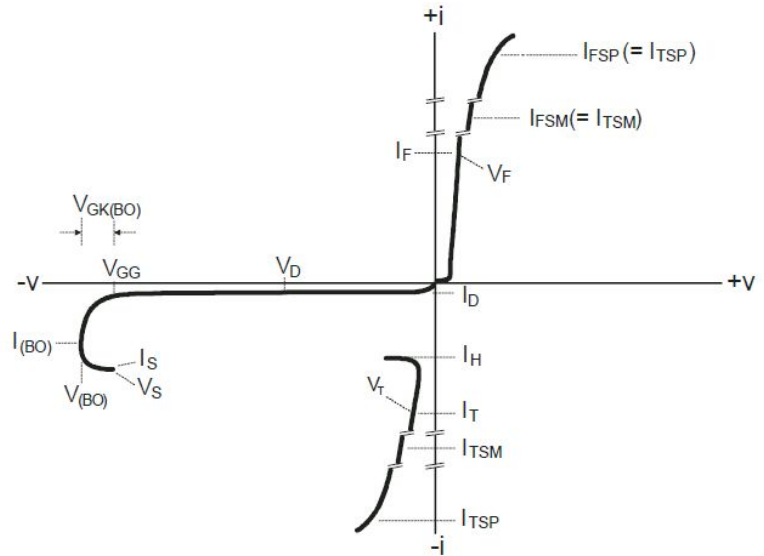


Absolute Maximum Ratings

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

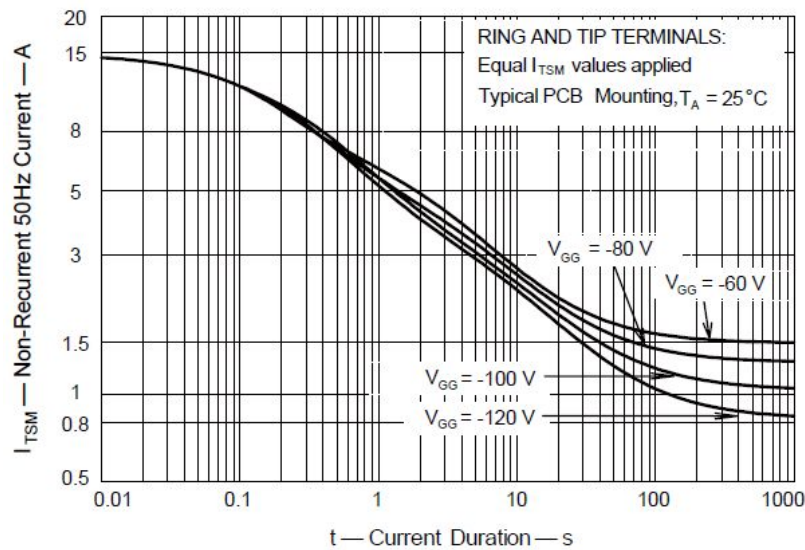
Parameter Measurement Information

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}



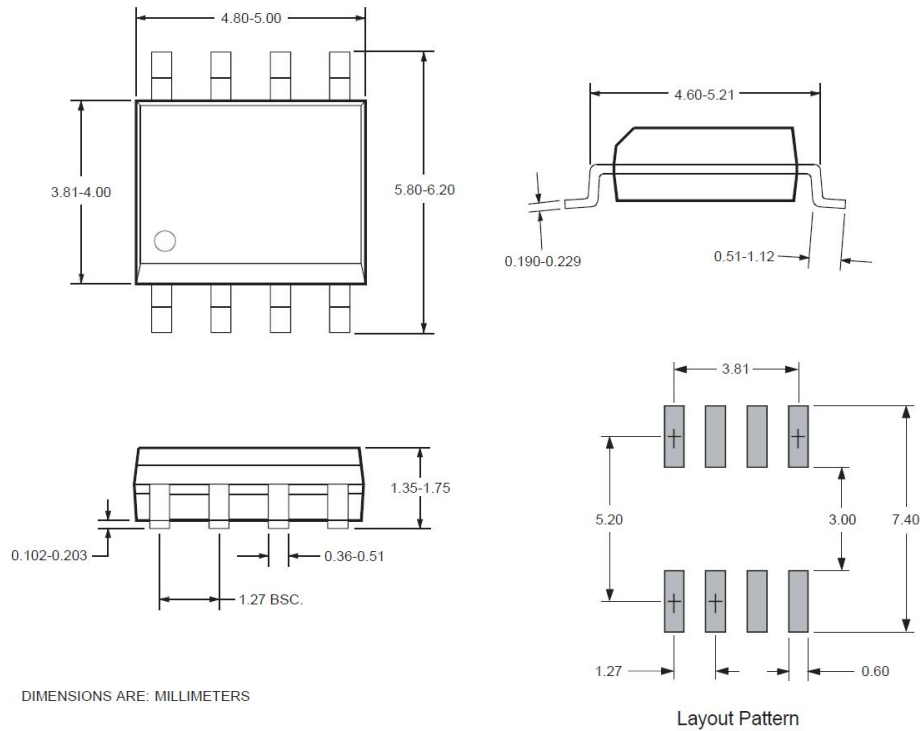
Electrical Characteristics ($T_A=25^\circ\text{C}$)

Non-Repetitive Peak On-state Current against Duration



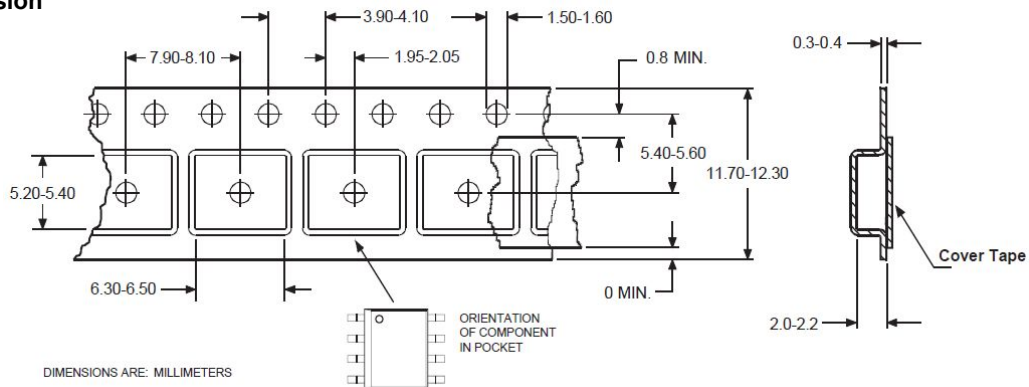
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
V_F Forward voltage	$I_F=5A, t_w=200\mu s$			3	V
V_{FRM} Peak forward recovery voltage	$2/10\mu s, I_F=100A, R_s=50\Omega, di/dt=80A/\mu s$			10	V
I_D Off-state current	$V_D=-170V, V_{GK}=0 \quad T_J=25^\circ\text{C}$ $V_D=-170V, V_{GK}=0 \quad T_J=85^\circ\text{C}$			-5	μA
$V_{(BO)}$ Breakover voltage	$2/10\mu s, I_{TM}=100A, R_s=50\Omega, di/dt=80A/\mu s, V_{GG}=-100V$			-112	V
I_H Holding current	$I_T=-1A, di/dt=1A/ms, V_{GG}=-100V$	-150			mA
I_{GAS} Gate reverse current	$V_{GG}=V_{GK}=-167V, V_{KA}=0 \quad T_J=25^\circ\text{C}$ $V_{GG}=V_{GK}=-167V, V_{KA}=0 \quad T_J=85^\circ\text{C}$			-5	μA
I_{GT} Gate trigger current	$I_T=3A, t_{p(g)}\geq 20\mu s, V_{GG}=-100V$			5	mA
V_{GT} Gate trigger voltage	$I_T=3A, t_{p(g)}\geq 20\mu s, V_{GG}=-100V$			2.5	V
C_{KA} Anode-cathode offstate capacitance	$f=1MHz, V_d=1V, I_G=0 \quad V_D=-3V$ $f=1MHz, V_d=1V, I_G=0 \quad V_D=-48V$			110 55	pF

Product Dimension

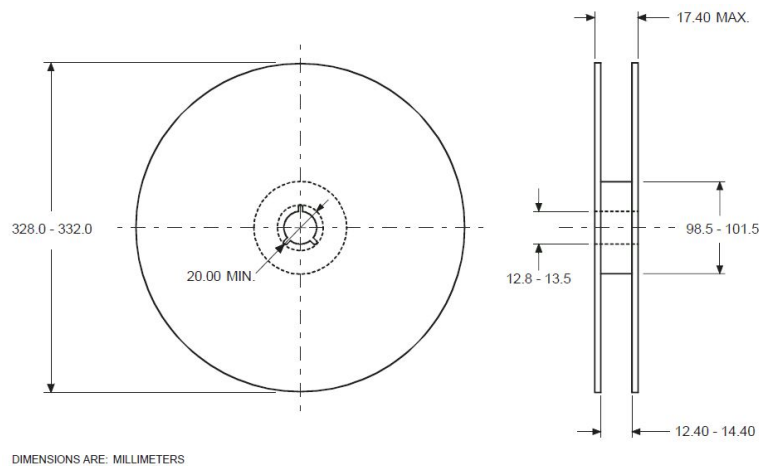


Package Information

Tape Dimension

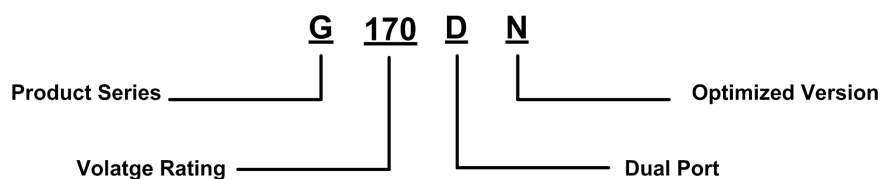


Reel Dimension



Marking and Order Information

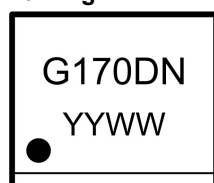
Part Number System



Order Information

Device	Package	Net Weight	Carrier	Quantity	HSF Status
G170DN	SOP-8	0.080g	Tape & Reel	2,500pcs/reel	RoHS compliant

Marking



YYWW = Date Code

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