



SPECIFICATION FOR APPROVAL

CUSTOMER'S APPROVAL CHOP

Approval's condition: _____

Approved date: _____

KINDLY RETURN A SET WITH YOUR COMPANY'S OFFICIAL
STAMP ON APPROVAL OF THIS ITEM

CUSTOMER'S NAME : _____

CUSTOMER'S MODEL NO. : _____

CUSTOMER'S PART NO. : _____

DESCRIPTION : Dual FXS Over Voltage Protec

SEMITELE'S MODEL NO. : SVG170QN

VERSION : B

DATE : 2017/2/24

Attachments:

- Product Specification
- Sample Qty.
- Test Data

Prepared By	Checked By	Approved By
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Revision Record

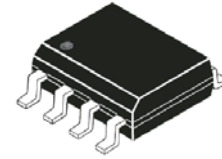
Version	Revision Date	Revision For Items	Reason For Revision
A	2016/1/25	New product release	-
B	2017/2/24	Adds 8/20 μ s , 220A	-

SEMITEG'S MODEL NO. :	SVG170QN	CUSTOMER'S MODEL NO. :	
VERSION :	B	CUSTOMER'S PART NO. :	
DATE :	2017/2/24		

Semitel International Ltd.,

Description

This device is especially designed for short loop system. It can be Independent tracking overvoltage protection for two SLICs (Subscriber Line Interface Circuit). Positive overvoltages are clipped to common by forward conduction of this device antiparallel diode. Negative overvoltages are initially clipped close to the SLIC negative supply by emitter follower action of this buffer transistor.



Features

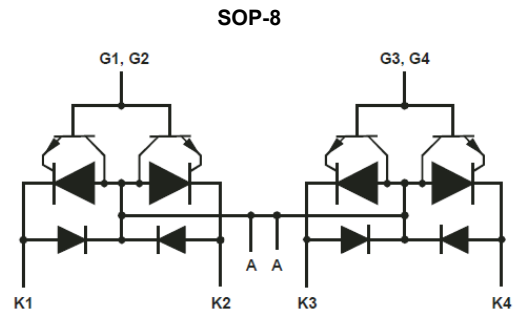
- Dual voltage-programmable protector
- Supports battery voltages down to -155 V
- Low gate triggering current 5 mA max.
- High holding current 150 mA min.
- Specified 2/10 limiting voltage
- ESD Immunity(HBM): JESD22 Class 3B, $\geq 8\text{KV}$
- MSL: Level 1 - unlimited

Applications

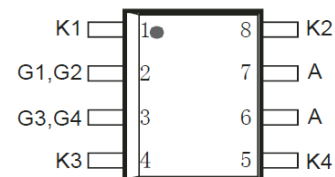
- Wireless In the Local Loop (WILL)
- Fibre In The Loop (FITL)
- Digital Added Main Line, Pair Gain (DAML)
- Small Office Home Office (SOHO)
- Integrated Services Digital Network – Terminal Adaptors (ISDN-TA)

Pin Configuration

Pin #	Pin Name	Description
1, 4, 5, 8	K1, K3, K4, K2	Connect to subscriber lines (Tip/Ring)
2, 3	G1, G2, G3, G4	Connect to battery (Reference Voltage)
6, 7	A	Connect ground



Schematic Diagram

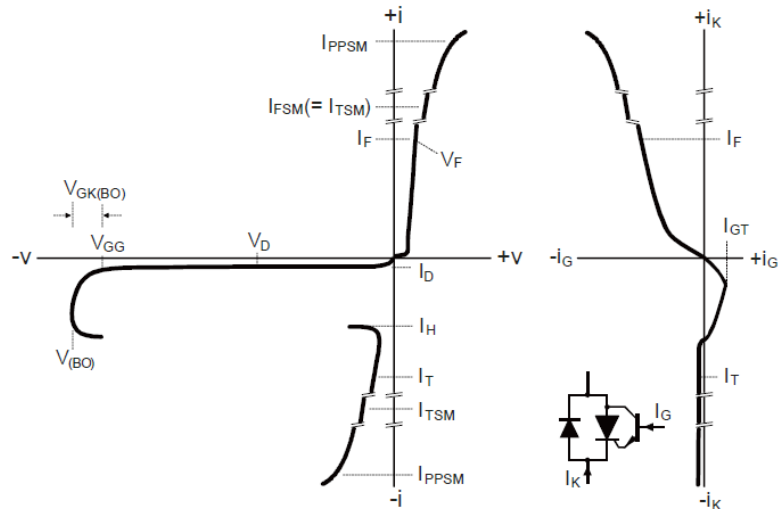


Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Non-repetitive peak on-state pulse current 10/1000 μs 5/320 μs 2/10 μs 8/20 μs	I_{PPSM}	30	A
		40	
		120	
		220	
Non repetitive peak on-state current, 50Hz/60Hz 0.1s 1s 5s 300s 900s	I_{TSM}	7.0	A
		2.7	
		1.5	
		0.45	
		0.43	
Non repetitive peak gate current, 1/2 μs pulse, cathodes commoned	I_{GSM}	25	A
Repetitive peak off-state voltage, $V_{\text{GK}}=0$	V_{DRM}	-170	V
Repetitive peak gate-cathode voltage, $V_{\text{KA}}=0$	V_{GKRM}	-167	V
Operating free-air temperature range	T_{A}	-40 - 85	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-40 - 150	$^{\circ}\text{C}$
Junction temperature	T_{J}	-40 - 150	$^{\circ}\text{C}$
Maximum lead temperature for soldering during 10s	T_{L}	260	$^{\circ}\text{C}$
Junction to free air thermal resistance	$R_{\theta\text{JA}}$	120	$^{\circ}\text{C}/\text{W}$

Parameter Measurement Information

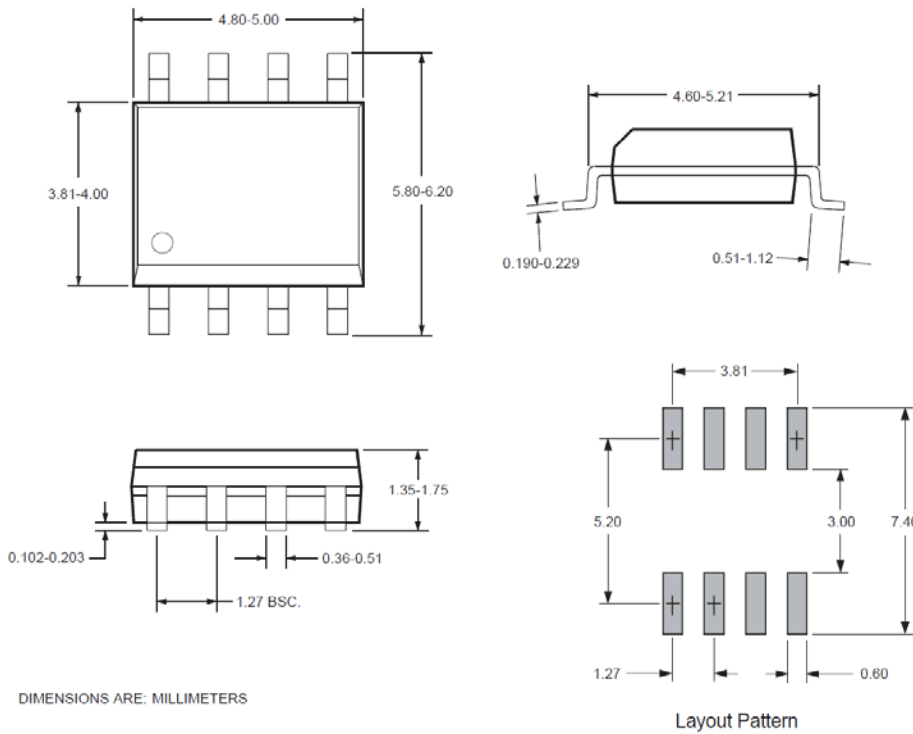
Parameter	Symbol
Off-state current	I_D
Holding current	I_H
Breakover voltage	$V_{(BO)}$
Forward voltage	V_F
Peak forward recovery voltage	V_{FRM}
Gate-cathode impulse breakover voltage	$V_{GK(BD)}$
Gate reverse current	I_{GKS}
Gate trigger current	I_{GT}
Gate-cathode trigger voltage	V_{GT}
Cathode-anode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



Electrical Characteristics

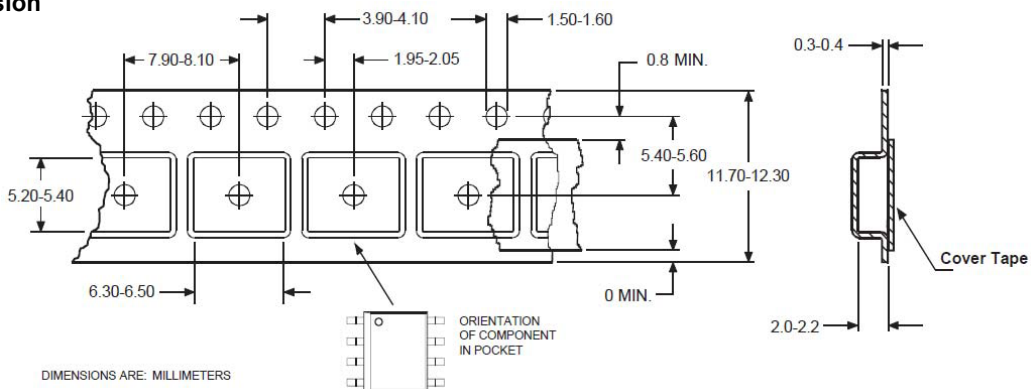
Symbol	Test Conditions	Min.	Typ.	Max.	Unit
V_F Forward voltage	$I_F=5A, t_w=200\mu s$			3	V
V_{FRM} Ramp peak forward recovery voltage	$di/dt=\pm 10A/\mu s, dv/dt\leq\pm 100V/\mu s$ maximum ramp value= $\pm 10A, T_J=25^\circ C$			5	V
V_{FRM} Impulse peak forward recovery voltage	$2/10\mu s, I_{TM}=-27A, R_s=50\Omega, di/dt=-27A/\mu s$			12	V
I_D Off-state current	$V_D=V_{DRM}, V_{GK}=0, T_J=25^\circ C$			-5	μA
$V_{(BO)}$ Ramp breakover voltage	$di/dt=\pm 10A/\mu s, dv/dt\leq\pm 100V/\mu s, V_{GG}=-100V$ maximum ramp value= $\pm 10A, T_J=25^\circ C$			-112	V
$V_{(BO)}$ Impulse breakover voltage	$2/10\mu s, I_{TM}=-27A, R_s=50\Omega, di/dt=-27A/\mu s,$ $V_{GG}=-100V$			-115	V
$V_{GK(BO)}$ Gate-cathode impulse breakover voltage	$2/10\mu s, I_{TM}=-27A, R_s=50\Omega, di/dt=-27A/\mu s,$ $V_{GG}=-100V$			15	V
I_H Holding current	$I_T=-1A, di/dt=1A/ms, V_{GG}=-100V$	-150			mA
I_{GKS} Gate reverse current	$V_{GG}=V_{GK}=V_{GKRM}, V_{KA}=0, T_J=25^\circ C$			-5	μA
I_{GT} Gate trigger current	$I_T=-3A, t_{p(g)}\geq 20\mu s, V_{GG}=-100V, T_J=25^\circ C$			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	$f=1MHz, V_d=1V, I_G=0, V_D=-3V$ $f=1MHz, V_d=1V, I_G=0, V_D=-48V$			100 50	pF

Product Dimension (UNIT: mm)

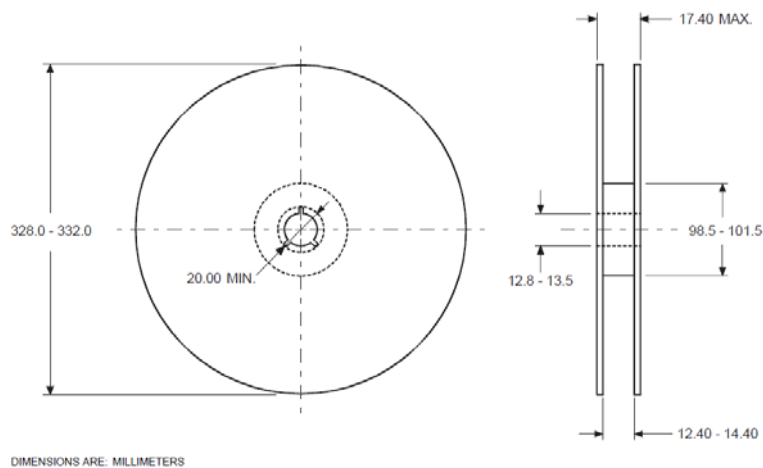


Package Request

Tape Dimension



Reel Dimension

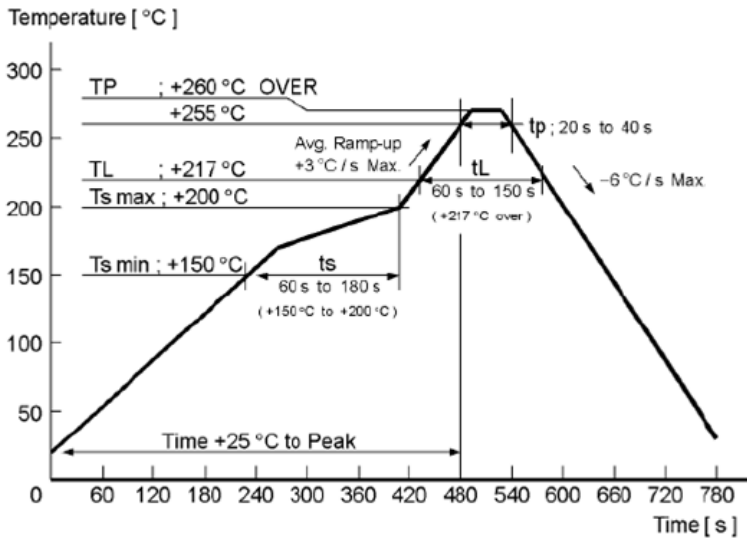


Operating temperature range -65°C~150°C

Storage temperature range -65°C~150°C

Recommended Temperature Conditions of Air Reflow Soldering

JEDEC 020D suggested reflow profile

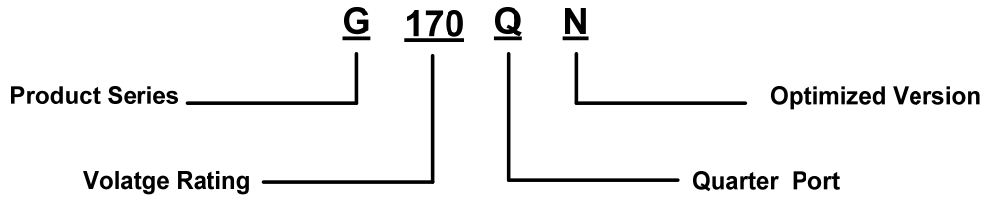


MSL : moisture sensitivity level

MSL : 1-unlimited

Marking and Order Information

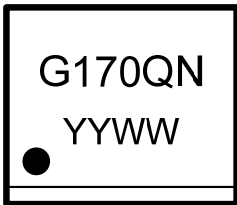
Part Number System



Order Information

Device	Package	Net Weight	Carrier	Quantity	HSF Status
SVG170QN	SOP-8	0.080g	Tape & Reel	2,500pcs/reel	RoHS compliant

Marking



YYWW = Date Code