

SPECIFICATION FOR APPROVAL

<p>CUSTOMER'S APPROVAL CHOP</p> <p>Approval's condition: _____</p> <p>Approved date: _____</p>
--

PLEASE 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: Programmable Overvoltage Protector

Semitel'S MODEL NO. : SVG170DM

VERSION: A

DATE: 2016/1/25

- Attachments:**
- Product specification
 - Sample Qty.
 - Test Data

Prepared By	Checked By	Approved By

Semitel International Ltd.,	TEL: 886-2-86922121	FAX: 886-2-26483379
www.semitelint.com	12F, No.183, Sec.1, Datong Rd., Xizhi Dist., New Taipei City 22145, Taiwan	

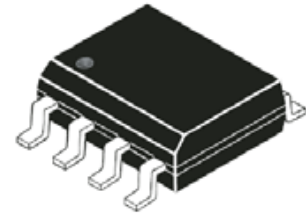
Revision Record

Version	Revision Date	Revision For Items	Revision For Items
A	2016/1/25	New Revision	-

SEMTEL'S MODEL NO. :	SVG170DM	CUSTOMER'S MODEL NO. :	
VERSION:	A	CUSTOMER'S PART NO. :	
DATE:	2016/1/25		

Description

This device is especially designed to protect subscriber line card interfaces (SLIC) against transient overvoltages. Positive overloads are clipped with 2 diodes. Negative surges are suppressed by 2 thyristors, their breakdown voltage being referenced to -VBAT through the gate. This component presents a very low gate triggering current (IGT) in order to reduce the current consumption on printed circuit board during the firing phase. A particular attention has been given to the internal wire bonding. The "4-point" configuration ensures reliable protection, eliminating the overvoltage introduced by the parasitic inductances of the wiring (Ldi/dt), especially for very fast transients.



SOP-8

Features

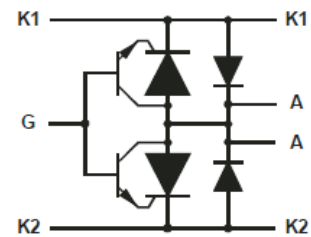
- Dual programmable transient suppressor
- Wide battery voltage supports
- Low gate triggering current
- High holding current
- ESD Immunity(HBM): JESD22 Class 3B, $\geq 8KV$
- MSL: Level 1 - unlimited

Applications

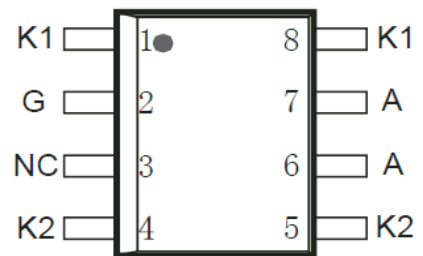
- Switch Line Card
- Access Network Line Card
- PBX
- VoIP

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



Schematic Diagram



Absolute Maximum Ratings

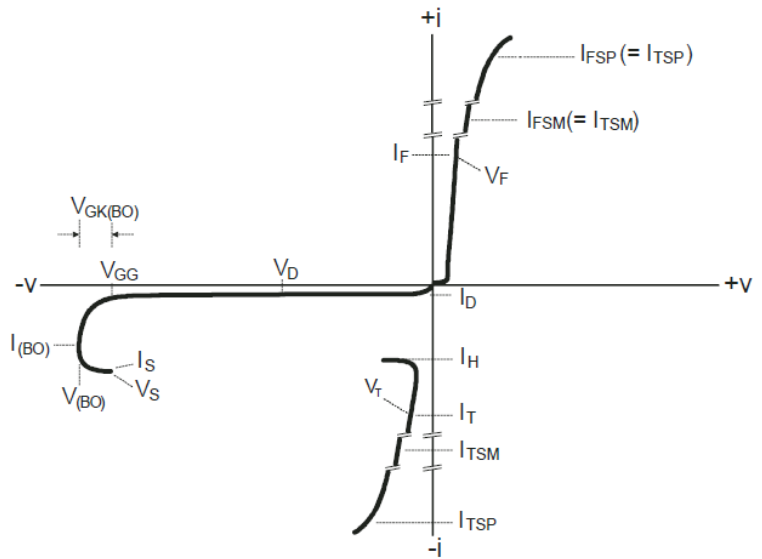
Parameter	Symbol	Value	Unit
Non-repetitive peak on-state pulse current	I_{PP}	10/1000 μs	100
		5/310 μs	150
		2/10 μs	500
Non repetitive surge peak on-state current (sinusoidal) 60Hz	I_{TSM}	0.5s	7.7
		1s	6.1
		5s	4.8
		30s	2.8
		900s	2.6

SEMITELE'S MODEL NO. :	SVG170DM	CUSTOMER'S MODEL NO. :	
VERSION:	A	CUSTOMER'S PART NO. :	
DATE:	2016/1/25		

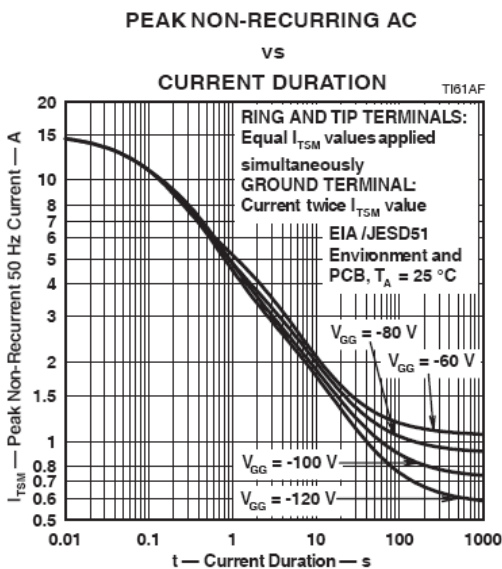
Maximum voltage LINE/GROUND	V_{DRM}	-170	V
Maximum voltage GATE/LINE	V_{GKRM}	-167	V
Operating free-air temperature range	T_A	-40-85	°C
Storage temperature range	T_{STG}	-40-150	°C
Junction temperature	T_J	-40-150	°C
Maximum lead temperature for soldering during 10s	T_L	260	°C
Junction to free air thermal resistance	$R_{\theta JA}$	120	°C/W

Parameter Measurement Information

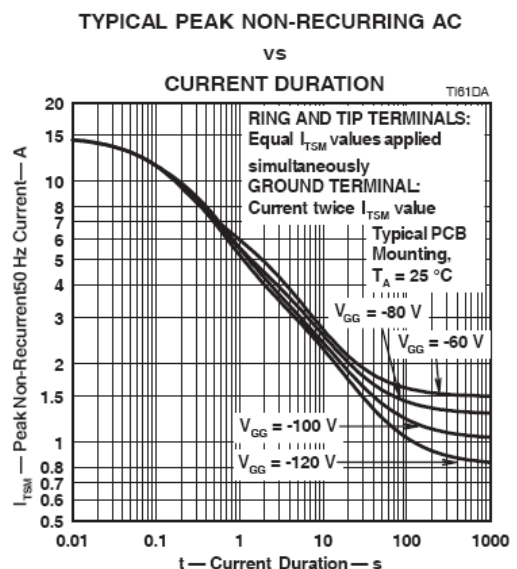
Parameter	Symbol
Off-state current	I_D
Holding current	I_H
Breakover voltage	$V_{(BO)}$
Forward voltage	V_F
Peak forward recovery voltage	V_{FRM}
Gate-cathode impulse breakover voltage	$V_{GK(BD)}$
Gate reverse current	I_{GKS}
Gate trigger current	I_{GT}
Gate-cathode trigger voltage	V_{GT}
Cathode-anode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



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



Non-Repetitive Peak On-State Current against Duration

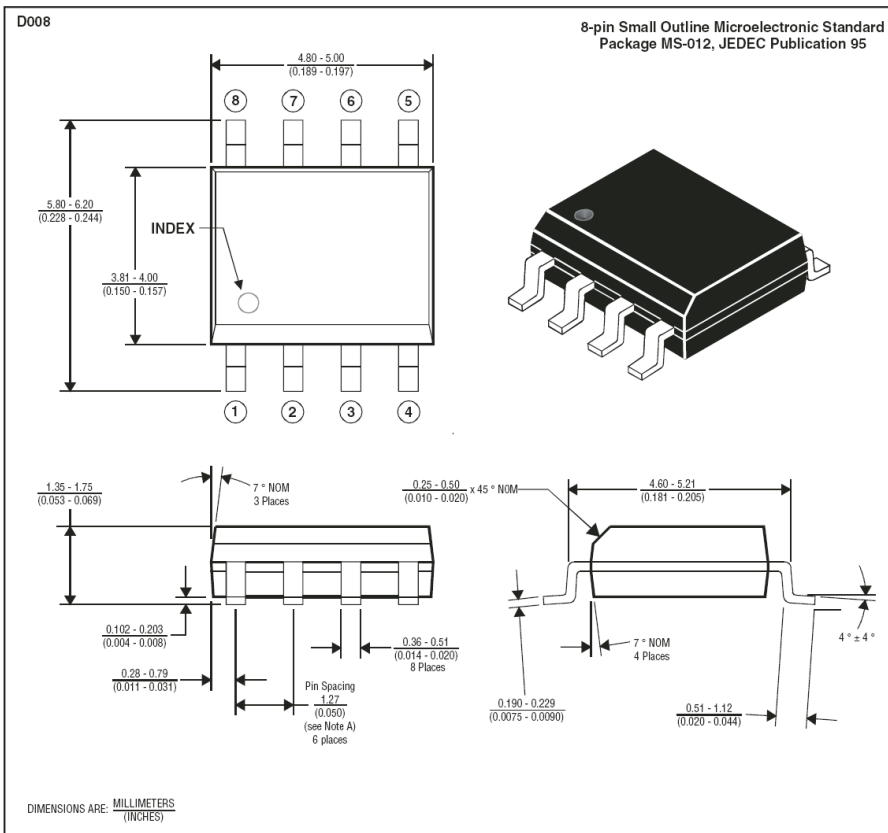


Typical Non-Repetitive Peak On-state Current against Duration

SEMITEI'S MODEL NO. :	SVG170DM	CUSTOMER'S MODEL NO. :	
VERSION:	A	CUSTOMER'S PART NO. :	
DATE:	2016/1/25		

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	$V_D=-170V, V_{GK}=0 \quad T_J=25^\circ C$ $V_D=-170V, V_{GK}=0 \quad T_J=85^\circ C$			-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	$V_{GG}=V_{GK}=-167V, V_{KA}=0 \quad T_J=25^\circ C$ $V_{GG}=V_{GK}=-167V, V_{KA}=0 \quad T_J=85^\circ C$			-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



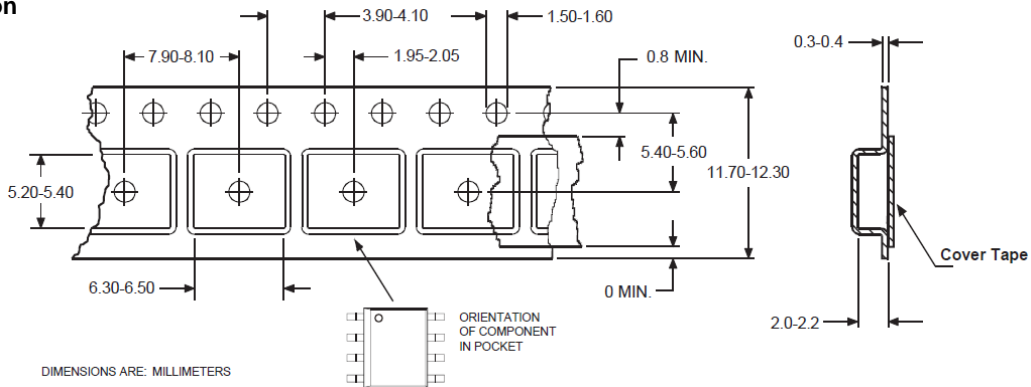
NOTES:

- A. Leads are within 0.25 (0.010) radius of true position at maximum material condition.
- B. Body dimensions do not include mold flash or protrusion.
- C. Mold flash or protrusion shall not exceed 0.15 (0.006).
- D. Lead tips to be planar within ± 0.051 (0.002).

SEMITEL'S MODEL NO. :	SVG170DM	CUSTOMER'S MODEL NO. :	
VERSION:	A	CUSTOMER'S PART NO. :	
DATE:	2016/1/25		

Package Information

Tape Dimension

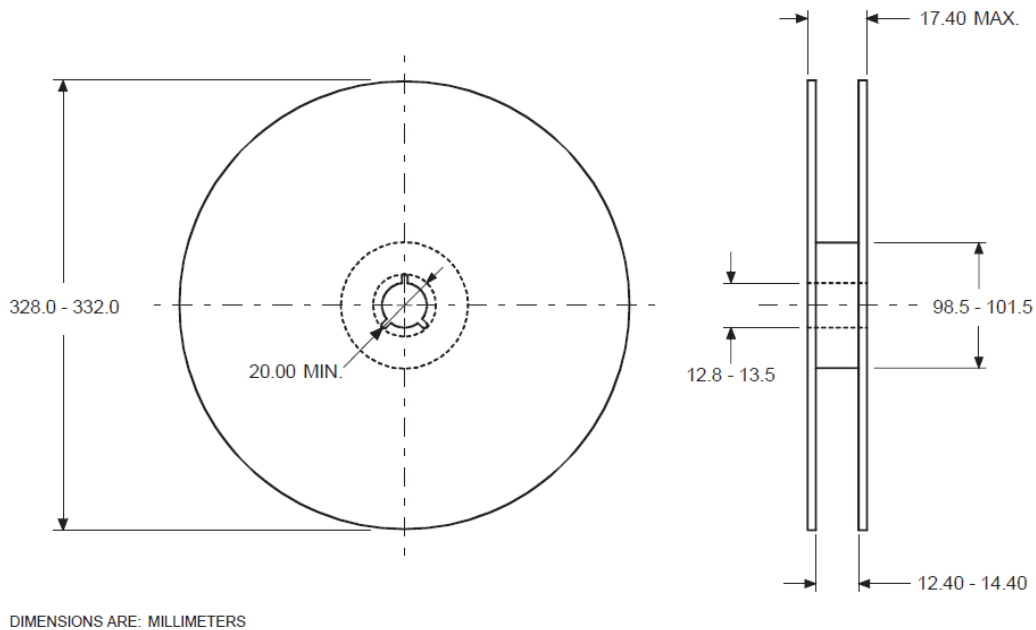


NOTES: A. Taped devices are supplied on a reel of the following dimensions:-

Reel diameter:	$\frac{330 \pm 0.0/-4.0}{(12.992 \pm 0.0/-1.157)}$
Reel hub diameter :	$\frac{100 \pm 2.0}{(3.937 \pm .079)}$
Reel axial hole:	$\frac{13.0 \pm 0.2}{(.512 \pm .008)}$

B. 2500 devices are on a reel.

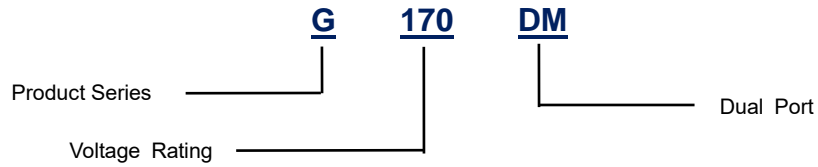
Reel Dimension



SEMITELE'S MODEL NO. :	SVG170DM	CUSTOMER'S MODEL NO. :	
VERSION:	A	CUSTOMER'S PART NO. :	
DATE:	2016/1/25		

Marking and Order Information

Part Number System



Order Information

Device	Package	Net Weight	Carrier	Quantity	HSF Status
G170DM	SOP-8	0.080g	Tape & Reel	2,500pcs/reel	RoHS compliant

Marking



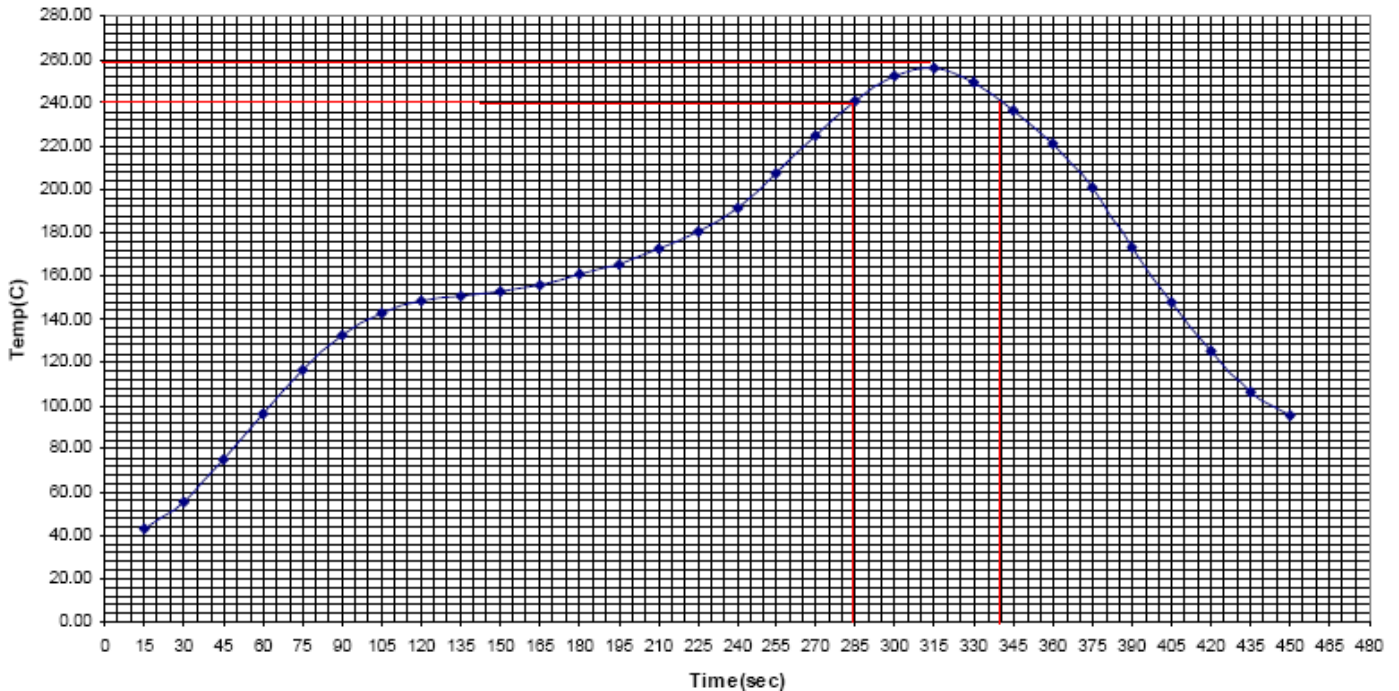
YYWW = Date Code

SEMTEL'S MODEL NO. :	SVG170DM	CUSTOMER'S MODEL NO. :	
VERSION:	A	CUSTOMER'S PART NO. :	
DATE:	2016/1/25		

Reflow Soldering and Rework Recommendations

- Recommended reflow methods, Recommended reflow methods: IR, Vapor phase oven, hot air oven, wave solder.
- Devices can be cleaned using standard industry methods and solvents.
- If a device is removed from the board, it should be discarded and replaced with a new device.
- Leaded devices are not designed to be compatible with wave soldering manufacturing operations.
- Lead free reflow curve.

Peak Temp=257C, Ramp Rate=0.802deg.C/sec.



SEMITELE'S MODEL NO. :	SVG170DM	CUSTOMER'S MODEL NO. :	
VERSION:	A	CUSTOMER'S PART NO. :	
DATE:	2017/4/6		