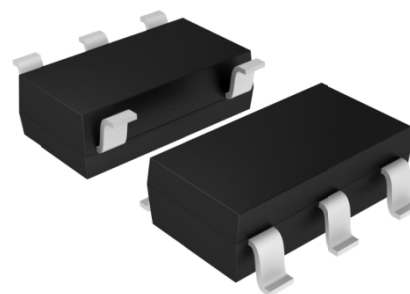


**Thyristor Surge Suppressor**
**Features**

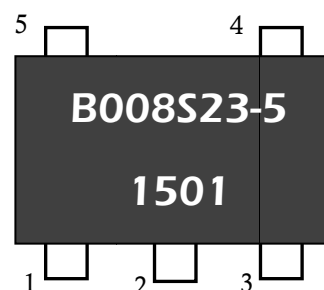
- Excellent capability of absorbing transient surge
- Quick response to surge voltage (nS Level)
- Eliminates overvoltage caused by fast rising transients
- Moisture sensitivity level: level 1
- Weight:15mg
- Non degenerative
- Bi-directional

**Exterior**


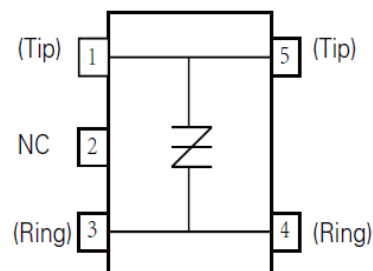
SOT23-5

**Application information**

- VDSL2+, ADSL2+

**Package (top view)**

**Agency Approvals**

Icon	Description
<b>RoHS</b>	Compliance with 2011/65/EU

**Schematic Symbol**

**Part Number and Electrical Parameter**

Part Number	I <sub>DRM</sub> @V <sub>DRM</sub>		V <sub>S</sub> <sup>①</sup> @ I <sub>S</sub>		V <sub>T</sub> @ I <sub>T</sub>		I <sub>H</sub>	Co <sup>②</sup>
	μA	V	V	mA	V	A	mA	pF
	MAX		MAX		MAX		MIN	MAX
BS0080S23-5	5	8	15	500	4	2.2	50	10

Absolute maximum ratings measured at T<sub>A</sub>= 25°C RH = 45%-75% (unless otherwise noted).

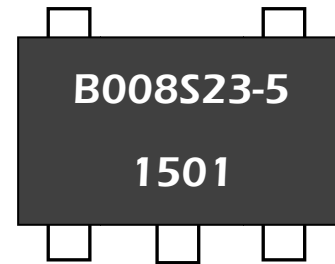
① V<sub>S</sub> is measured at 100KV/S

② Off-state Capacitance is measured at V<sub>DC</sub>=2V, V<sub>RMS</sub>=1V, f=1MHz

**Thyristor Surge Suppressor**
**Part Numbering System**

BS 0080 S23-5  
 (1) (2) (3)

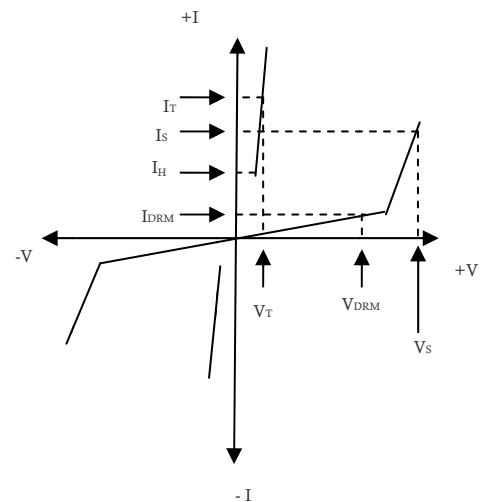
- (1)Bencent Semiconductor Surge Arrester  
 (2)Off-state Voltage,e.g.0080= $8 \times 10^0=8V$   
 (3)Package : SOT23-5

**Mark**


B008S23-5: Part Number  
 1501:January,2015

**V-I Curve**

Parameters	Definition
$V_{DRM}$	Peak Off-state Voltage
$I_{DRM}$	Off-state Current
$V_S$	Switching Voltage
$I_S$	Switching Current
$I_H$	Holding Current
$V_T$	On-state Voltage
$I_T$	On-state Current
$C_o$	Off-state Capacitance


**Surge Ratings**

Current Waveform	8/20 $\mu$ s	5/320 $\mu$ s*	2/10 $\mu$ s	10/1000 $\mu$ s
Voltage Waveform	1.2/50 $\mu$ s	10/700 $\mu$ s*	2/10 $\mu$ s	10/1000 $\mu$ s
$I_{pp}$	40A	25A	45A	18A

-Peak pulse current rating ( $I_{PP}$ )is repetitive and guaranteed for the life of the product;

-Bencent only makes the test for 8/20 $\mu$ s @40A(1.2/50 $\mu$ s 2 $\Omega$  80V),10/700 $\mu$ s @1KV(5/320 $\mu$ s 25A),but for other IPP value derived from experience is just for reference only. Bencent will not take any obligation for these parameters, so before applying our parts, please make sure to verify the parameters listed in the above table.

**Thermal Considerations**

Symbol	Parameter	Value	Unit
$T_J$	Operating Junction Temperature Range	-40 to +125	$^{\circ}C$
$T_S$	Storage Temperature Range	-60 to +125	$^{\circ}C$

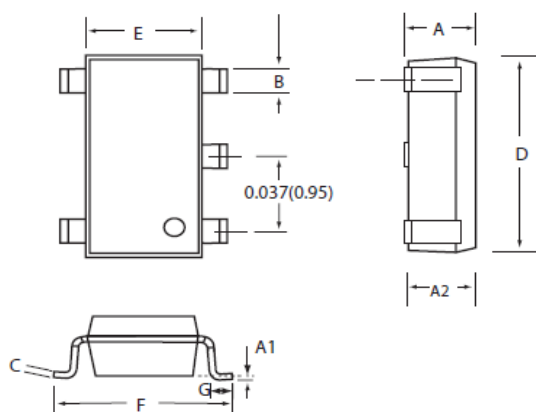
**Physical Characteristics**

Lead Material	Copper Alloy
Body Material	UL recognized epoxy meeting flammability classification 94V-0
Terminal Finish	100% Matte-Tin Plated

**Environmental Characteristics**

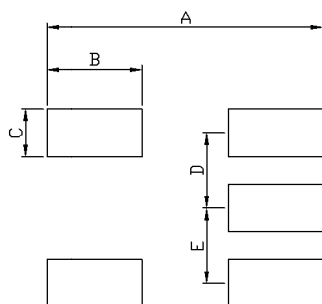
Testing Items	Technical Standards
High Temperature Reverse Bias Test	Temperature: $150\pm 3^{\circ}\text{C}$ , Bias= $80\%V_{\text{DRM}}$ Time:168H
High Temperature Life Test	Temperature: $150^{\circ}\text{C}$ Time:168H
High-low Temperature Cycle Test	Temperature:From $-40^{\circ}\text{C}$ to $125^{\circ}\text{C}$ Dwell time: 30min, 10-100 cycles
High Temperature &High Humidity Test	Temperature: $85^{\circ}\text{C}$ Humidity:60% Test time:168H
Pressure Cooker Test	Temperature: $121^{\circ}\text{C}$ , 2atm. Humidity:100% Test time: 24H to 168H
Resistance of Soldering Heat	Temperature: $260\pm 5^{\circ}\text{C}$ Time of dip soldering: 10s, 3times

Note:The above testing items can be specified by customers by contacting Bencent service

**Product Dimensions**


SOT23-5

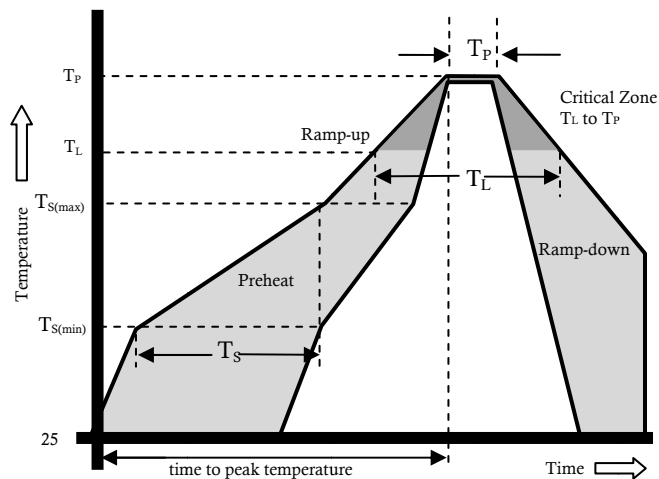
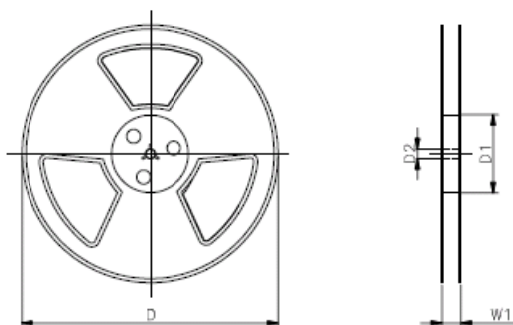
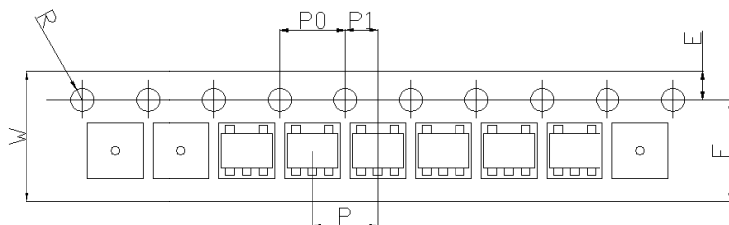
REF.	mm	inch
A	0.90-1.45	0.035-0.057
B	0.35-0.50	0.014-0.020
C	0.09-0.20	0.004-0.008
D	2.80-3.20	0.110-0.126
E	1.50-1.75	0.059-0.069
F	2.60-3.00	0.102-0.118
G	0.10-0.60	0.004-0.024
A1	0.00-0.10	0.000-0.004
A2	0.90-1.30	0.035-0.051

**Recommended Soldering Pad**


REF	mm	inch
A	3.50	0.138
B	1.20	0.047
C	0.60	0.024
D	0.95	0.037
E	0.95	0.037

**Thyristor Surge Suppressor**
**Reflow Profile**

Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60 – 180 secs.
Average ramp up rate(Liquidus Temp( $T_L$ ) to peak)		3°C/sec. Max.
Ts(max) to $T_L$ - Ramp-up Rate		3°C/sec. Max.
Reflow	- Temperature ( $T_L$ ) (Liquidus)	+217°C
	- Temperature ( $T_L$ )	60 – 150 secs.
Peak Temp ( $T_P$ )		+(260+0/-5)°C
Time within 5°C of actual Peak Temp ( $T_P$ )		30secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp ( $T_P$ )		8 min. Max.
Do not exceed		+260°C


**Package Reel Information**


REF	mm	inch
R	0.75+/-0.05	0.029+/-0.002
D	178.0	7.0
D1	60+/-3	2.362+/-0.118
D2	13+/-0.3	0.512+/-0.012
E	1.75+/-0.2	0.069+/-0.008
F	6.25+/-0.2	0.246+/-0.008
P	4.0+/-0.2	0.157+/-0.008
P0	4.0+/-0.2	0.157+/-0.008
P1	2.0+/-0.2	0.079+/-0.008
W	8.0+/-0.2	0.315+/-0.008
W1	8.4+/-0.5	0.331+/-0.020

Outline	Reel (pcs)	Per Carton (pcs)	Reel Diameters (mm)	Carton Size(mm)		
				L	W	H
Taping	3000	90,000	177	390	370	220