

## DESCRIPTION

The STB80B170 is a Bi-directional TSS (Thyristor Surge Suppressors). It is specifically designed to protect telephones, fax machines, communication connections, modems, video lines and so on.

The STB80B170 is used to enable equipment to meet various regulatory requirements including IEC 61000-4-5, GR-1089-CORE, ITU-T K.20, K.21 and K.45, IEC 60950, UL 60950, and TIA-968.

## FEATURES

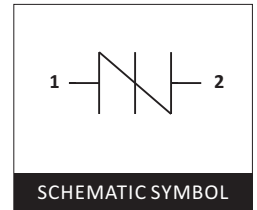
- > Excellent capability of absorbing transient surge
- > Quick response to surge voltage
- > Eliminates overvoltage caused by fast rising transients
- > Solid-state silicon technology, non degenerative

## APPLICATIONS

- > POE
- > Network and telecom
- > Data lines and security systems
- > Serial ports



DO-214AA PACKAGE



SCHEMATIC SYMBOL

## PART NUMBER AND ELECTRICAL PARAMETER @ T=25°C RH = 45%-75%

PART NUMBER	V <sub>DRM</sub> V	I <sub>DRM</sub> uA Max	V <sub>s</sub> V Max	I <sub>s</sub> mA	V <sub>T</sub> V Max	I <sub>T</sub> A	I <sub>H</sub> mA Min	C <sub>o</sub> pF Typ
STB80B170	170	5	220	800	4	2.2	150	65

- 1、V<sub>s</sub> is measured at 100KV/S
- 2、Off-state capacitance is measured in V<sub>DC</sub>=2V, V<sub>RMS</sub>=1V, F=1MHz
- 3、All measurements are made at an ambient temperature of 25°C

## SURGE RATINGS

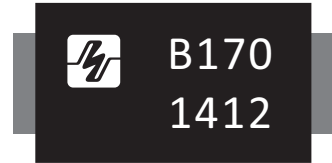
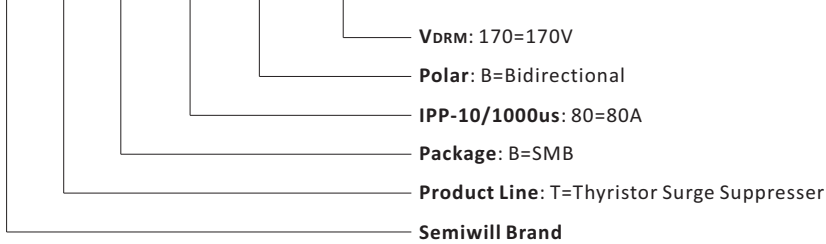
Series	IPP 2x10us (A)	IPP 8x20us (A)	IPP 10x560us (A)	IPP 10x1000us (A)	V <sub>PP</sub> 10x700us (V)	I <sub>TSM</sub> 60Hz (A)	di/dt (A/us)
STB80B170	300	300	100	80	4000	32	500

## THERMAL CONSIDERATIONS

Symbol	Parameter	Value	Unit
T <sub>J</sub>	Operating Junction Temperature	-40 to +150	°C
T <sub>s</sub>	Storage Temperature Range	-40 to +150	°C
R <sub>θJA</sub>	Junction to Ambient on printed circuit	90	°C/W

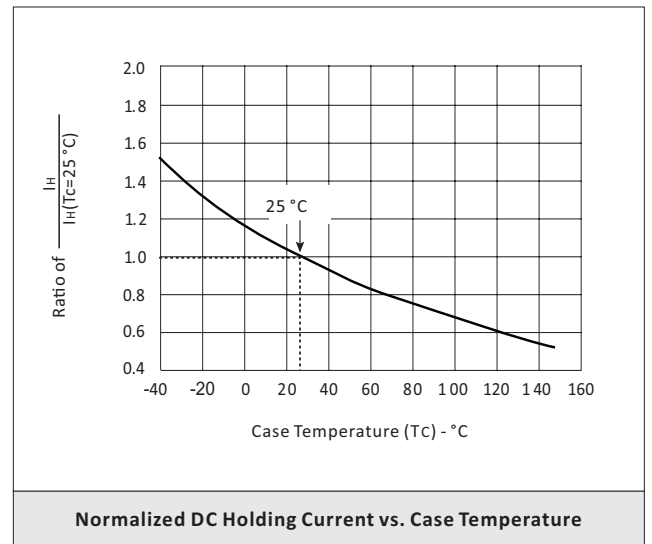
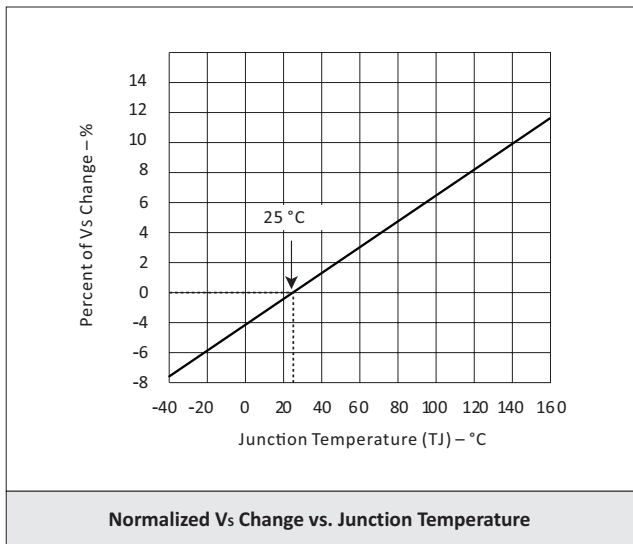
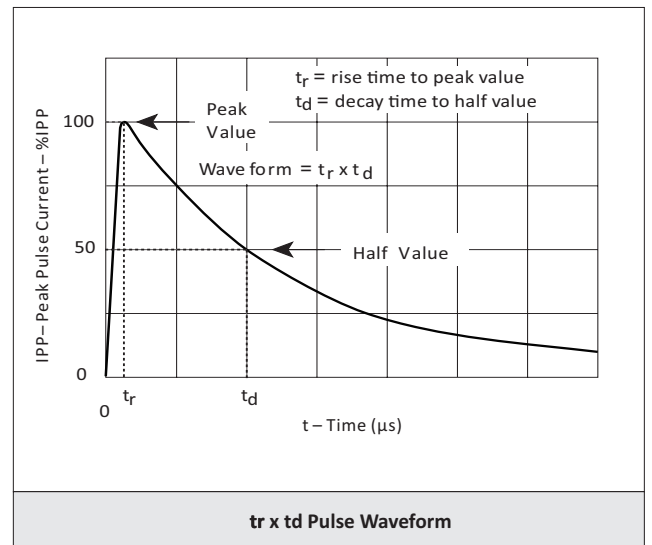
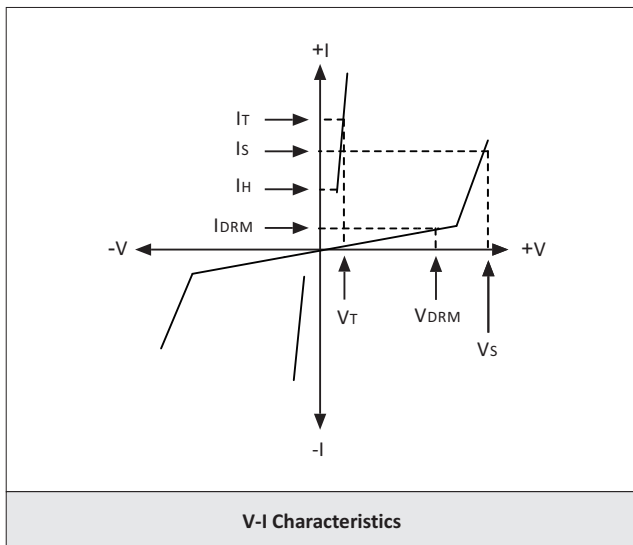
**PART NUMBERING AND MARKING SYSTEM**

**S T B 80 B 170**



**B170**: Part Number  
**1412**: December, 2014

**TYPICAL DEVICE CHARACTERISTICS**



**ENVIRONMENTAL CHARACTERISTICS**

Testing Items	Technical Standards
High Temperature Reverse Bias Test	Temperature:150±3°C,Bias=80%V <sub>DRM</sub> ;Time:168H
High Temperature Life Test	Temperature:150°C;Time:168H
High-Low Temperature Cycle Test	Temperature:From -40°C to 150°C ;Dwell Time:30min,10-100 Cycles
High Temperature&High Humidity Test	Temperature:85°C.Humidity:85%; Time:168H
Pressure Cooker Test	Temperature:121°C,2 atm.Humidity:100%; Time:24H To 168H
Resistance Of Soldering Heat	Temperature:260±5°C;Time Of Dip Soldering:10s,3 Times

**PRODUCT DIMENSIONS**

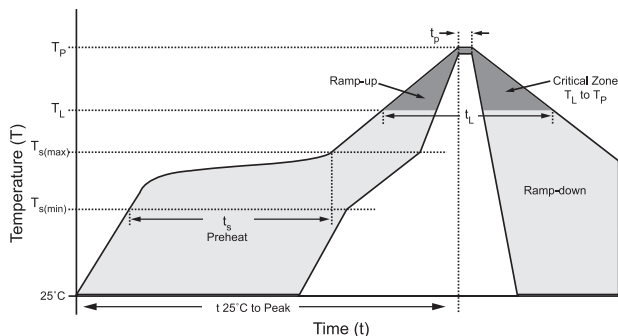
OUTLINE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.96	2.21	0.077	0.087
B	4.06	4.57	0.160	0.180
C	3.30	3.94	0.130	0.155
D	2.00	2.50	0.079	0.098
E	0.76	1.52	0.030	0.060
F	0.10	0.20	0.004	0.008
G	5.08	5.59	0.200	0.220
H	0.15	0.31	0.006	0.012

**NOTES**  
1. Dimensions are exclusive of mold flash and metal burrs.

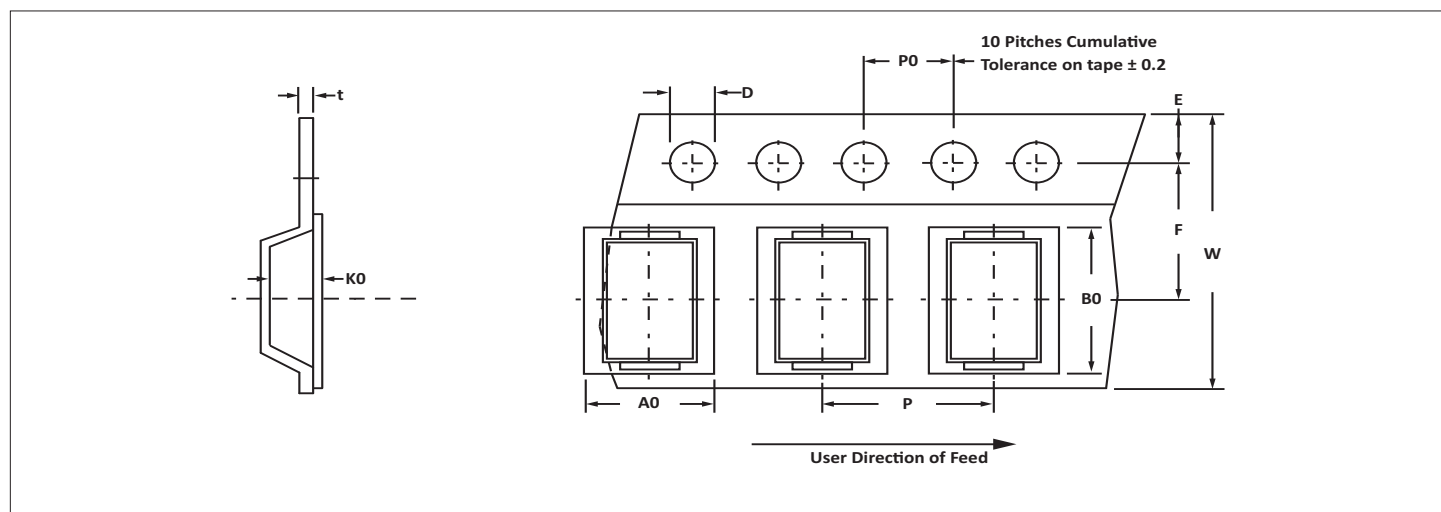
PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.15	-	0.084	-
B	1.45	-	0.057	-
C	-	2.55	-	0.100
D	1.45	-	0.057	-

### SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Min (Ts(min))	150°C
	Temperature Max (Ts(max))	200°C
	Time (min to max) (ts)	60 – 180 secs
Average ramp up rate (Liquidus Temp (TL) to peak)		3°C/second max
Ts(max) to TL - Ramp-up Rate		3°C/second max
Reflow	Temperature (TL) (Liquidus)	217°C
	Time (min to max) (ts)	60 – 150 seconds
Peak Temperature (TP)		260°C
Time within 5°C of actual peak Temperature (tp)		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (TP)		8 minutes Max.
Do not exceed		260°C



### TAPE AND REEL SPECIFICATION



### SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P	tmax
330mm (13")	12mm	3.79 ± 0.15	5.72 ± 0.15	2.46 ± 0.30	1.55 ± 0.05	1.75 ± 0.10	5.5 ± 0.05	12.00 ± 0.30	4.00 ± 0.10	8.00 ± 0.10	0.25 ± 0.10

#### NOTES

1. Dimensions are in millimeters.
2. Surface mount product is taped and reeled in accordance with EIA-481.
3. Suffix - T = 13" Reel - 3,000 pieces per 12mm tape.

### ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
STB80B170	DO-214AA	3000PCS	13"

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