

## DESCRIPTION

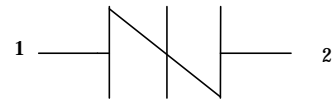
TSS-SMA series thyristors are a type of semi-conduct component. They are designed in applications, modems, telephones, line cards, answering machines, FAX machines, SLICs, T1/E1, xDSL, PBXs and more.

## 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 69 mg (approximate)
- ✧ Non degenerative



SMA



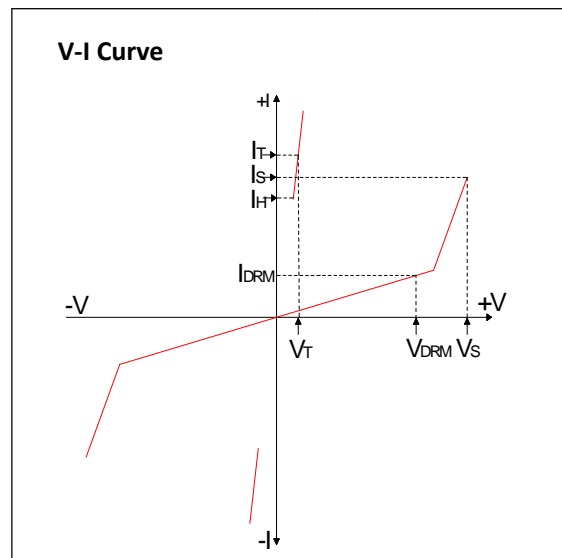
Symbol

## ABSOLUTE MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ , RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Storage temperature range	$T_{stg}$	-60 to +150	$^{\circ}\text{C}$
Operating junction temperature range	$T_j$	-40 to +150	$^{\circ}\text{C}$
Repetitive peak pulse current	$I_{PP}$	35	A

## ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ )

Symbol	Parameter
$V_{DRM}$	Peak off-state voltage
$I_{DRM}$	Off-state current
$V_S$	Switching voltage
$I_S$	Switching current
$V_T$	On-state voltage
$I_T$	On-state current
$I_H$	Holding current
$C_o$	Off-state capacitance



**ELECTRICAL CHARACTERISTICS (TA=25°C, continued)**

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>	C <sub>O</sub> <sup>②</sup>
	μA	V	V	mA	V	A	mA	pF
	MAX	MIN	MAX	MAX	MAX	MAX	MIN	MAX
BEP0080TA	5	6	25	800	4	2.2	50	50
BEP0080TA-MC	5	6	25	800	4	2.2	20	13
BEP0150TA	5	12	35	800	4	2.2	45	125
BEP0220TA	5	15	35	800	4	2.2	50	100
BEP0220TA-MC	5	15	32	800	4	2.2	20	25
BEP0300TA	5	25	40	800	4	2.2	50	100
BEP0300TA-MC	5	25	40	800	4	2.2	50	25
BEP0640TA-MC	5	58	77	800	4	2.2	120	30
BEP0720TA-MC	5	65	87	800	4	2.2	120	30
BEP0900TA-MC	5	75	98	800	4	2.2	120	30
BEP1100TA-MC	5	90	130	800	4	2.2	120	30
BEP1300TA-MC	5	120	160	800	4	2.2	120	30
BEP1500TA-MC	5	140	180	800	4	2.2	120	30
BEP1800TA-MC	5	170	220	800	4	2.2	120	30
BEP2300TA-MC	5	190	260	800	4	2.2	120	25
BEP2600TA-MC	5	220	300	800	4	2.2	120	25
BEP3100TA-MC	5	275	350	800	4	2.2	120	25
BEP3500TA-MC	5	320	400	800	4	2.2	120	20
BEP3800TA-MC	5	340	450	800	4	2.2	120	20
BEP0080TB	5	6	25	800	4	2.2	50	100
BEP0080TB-MC	5	6	25	800	4	2.2	50	25
BEP0080TC	5	6	25	800	4	2.2	50	130
BEP0080TC-MC	5	6	25	800	4	2.2	50	40

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

## SURGE RATINGS

Series	I <sub>PP</sub> (A) min			
	2x10us	8x20us	10x360us	10x1000us
A	100	90	50	35
B	250	250	125	80
C	500	400	175	100

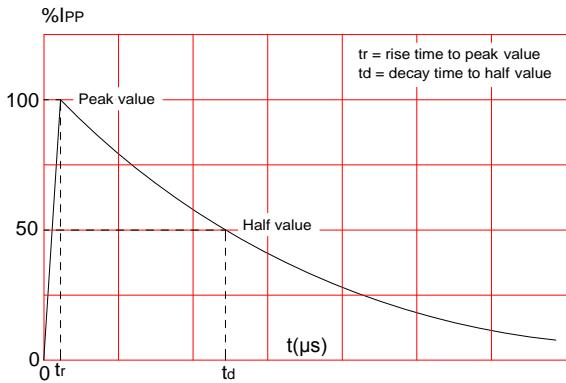
## ORDERING INFORMATION

<b>BEP 008</b>		<b>0</b>	<b>T</b>	<b>A - MC</b>	Low Capacitor
BORN'S Semiconductor Surge Arrester		Median Voltage	Package type	Surge Ratings : A: 2 KV(10/700us) B: 4 KV(10/700us) C:6 KV(10/700us)	
		0:Bi-direction			

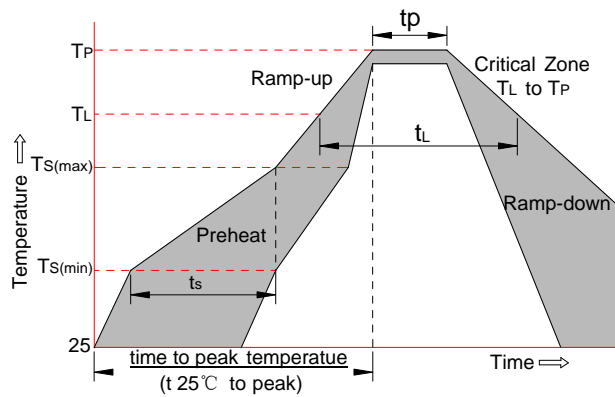
## SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see FIG.2)
Pre Heat	-Temperature Min (T <sub>s(min)</sub> )	+150°C
	-Temperature Max(T <sub>s(max)</sub> )	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T <sub>L</sub> ) to peak)		3°C/sec. Max
T <sub>s(max)</sub> to T <sub>L</sub> - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T <sub>L</sub> ) (Liquid us)	+217°C
	-Temperature(t <sub>L</sub> )	60-150 secs.
Peak Temp (T <sub>p</sub> )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t <sub>p</sub> )		8-15 secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T <sub>P</sub> )		8 min. Max
Do not exceed		+260°C

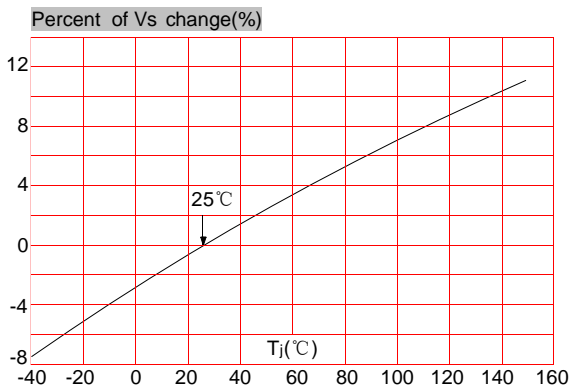
**FIG.1:** tr x td pulse waveform



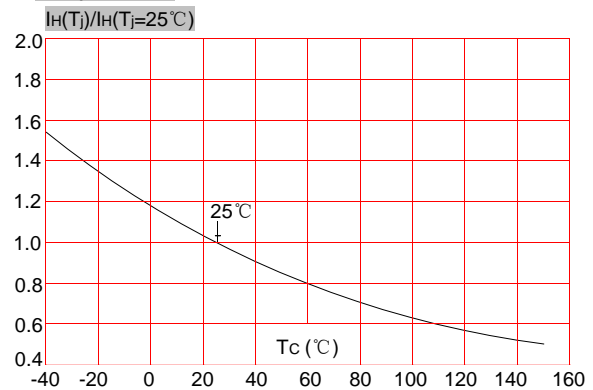
**FIG.2:** Reflow condition



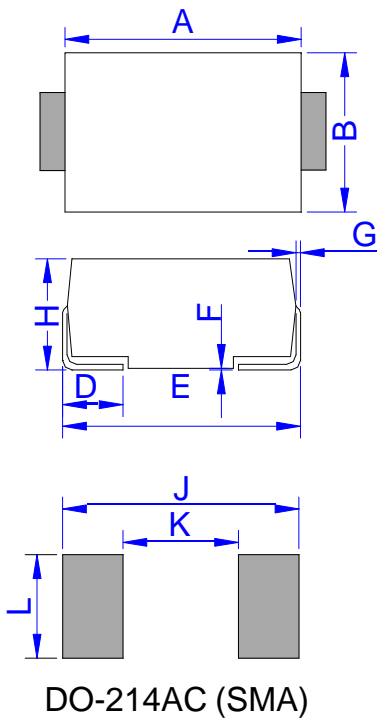
**FIG.3:** Normalized Vs change vs. junction temperature



**FIG.4:** Normalized DC holding current vs. case temperature



**PACKAGE MECHANICAL DATA**



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.25	4.65	0.167	0.183
B	2.50	2.90	0.098	0.114
C	1.35	1.65	0.053	0.065
D	0.76	1.52	0.030	0.060
E	4.93	5.28	0.194	0.208
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	1.98	2.41	0.078	0.095
J	6.50		0.256	
K		2.30		0.090
L	1.70		0.067	