

## DESCRIPTION

DO-214AA/SMB Thyristor solid state protection thyristor protect telecommunications equipment such as modems, line cards, fax machines, and other CPE. This Series devices are used to enable equipment to meet various regulatory requirements including GR1089, ITUK.20, K.21 and K.45, IEC 60950, and TIA-968 (formerly known as FCC Part 68).

## 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

- > Audio/Video line
- > 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 Min.	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.
P0060SB	6	5	15	800	4	2.2	40	80
P0080SB	6	5	25	800	4	2.2	40	80
P0150SB	15	5	25	800	4	2.2	40	80
P0300SB	25	5	40	800	4	2.2	40	80
P0640SB	58	5	77	800	4	2.2	120	60
P0720SB	65	5	88	800	4	2.2	120	60
P0900SB	75	5	98	800	4	2.2	120	55
P1100SB	90	5	130	800	4	2.2	120	55
P1300SB	120	5	160	800	4	2.2	120	55
P1500SB	140	5	180	800	4	2.2	120	60
P1800SB	170	5	220	800	4	2.2	120	60
P2300SB	190	5	260	800	4	2.2	120	55
P2600SB	220	5	300	800	4	2.2	120	50
P3100SB	275	5	350	800	4	2.2	120	45
P3500SB	320	5	400	800	4	2.2	120	40
P4200SB	400	5	520	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
- 3、All measurements are made at an ambient temperature of 25°C



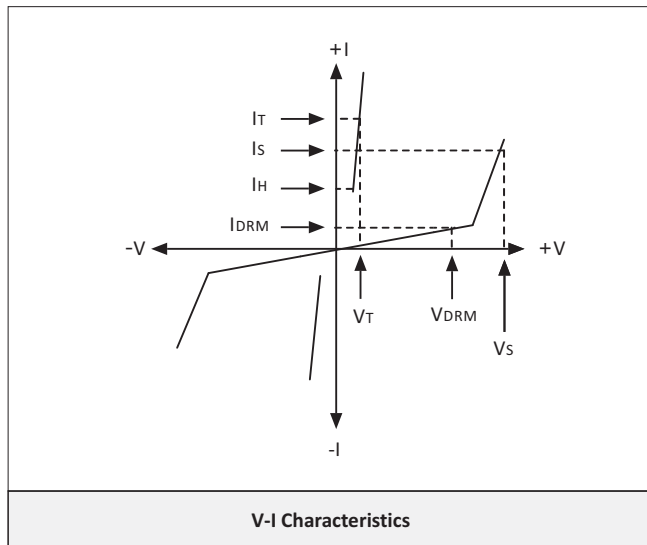
### SURGE RATINGS

Series	IPP 2x10us (A)	IPP 8x20us (A)	IPP 10x560us (A)	IPP 10x1000us (A)	VPP 10x700us (V)	I <sub>TSM</sub> 60Hz (A)	di/dt (A/us)
P0060SB Thru P4200SB	250	250	100	80	4000	25	500

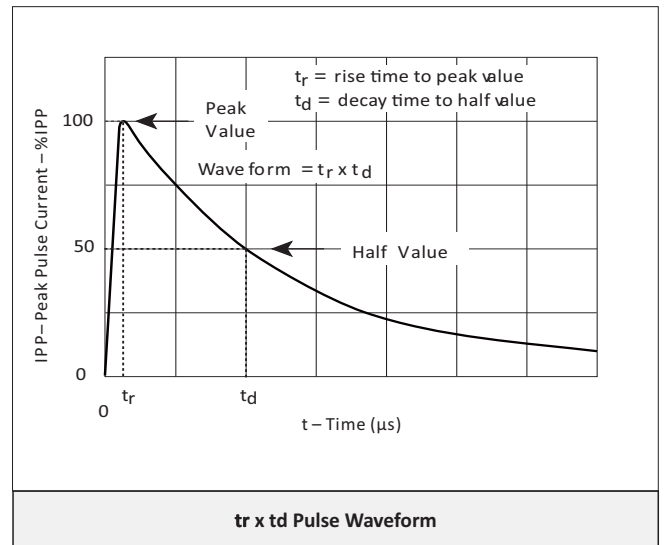
### THERMAL CONSIDERATIONS

Symbol	Parameter	Value	Unit
T <sub>J</sub>	Operating Junction Temperature	-55 to +125	°C
T <sub>S</sub>	Storage Temperature Range	-55 to +150	°C
R <sub>θJA</sub>	Junction to Ambient on printed circuit	90	°C/W

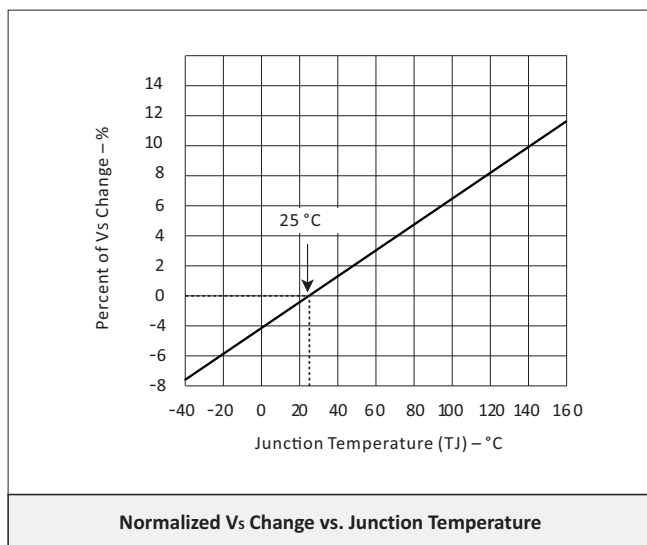
### TYPICAL DEVICE CHARACTERISTICS



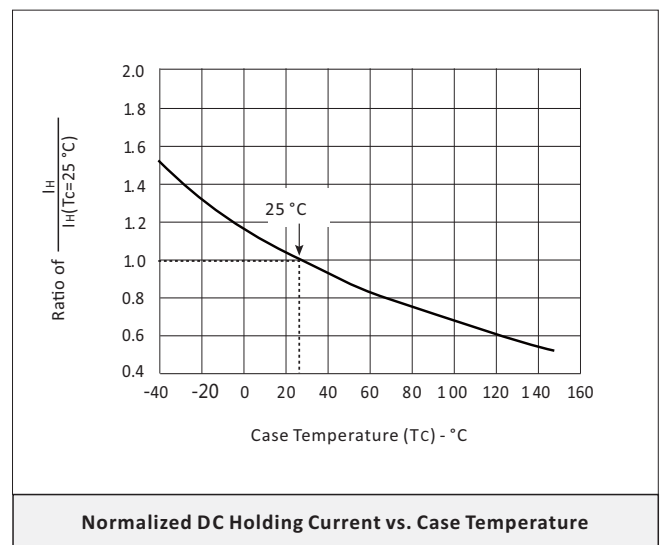
V-I Characteristics



tr x td Pulse Waveform



Normalized V<sub>S</sub> Change vs. Junction Temperature

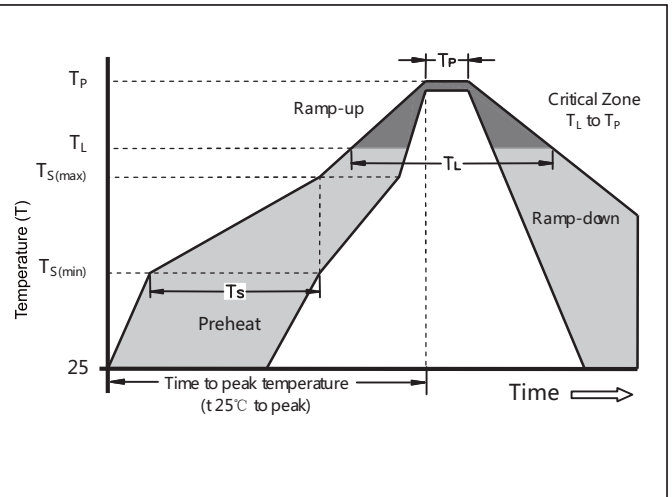


Normalized DC Holding Current vs. Case Temperature

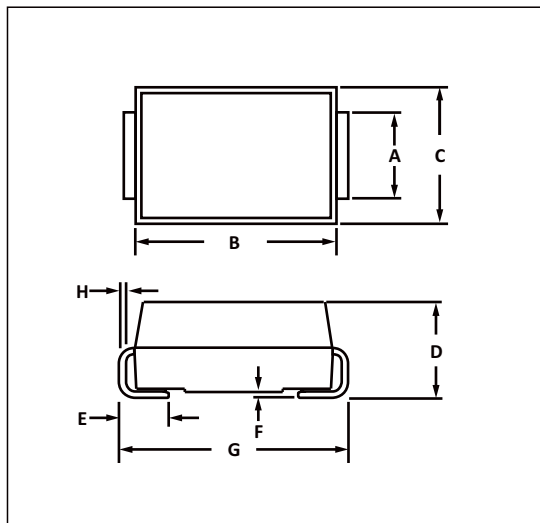


### SOLDERING PARAMETERS

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) (tl)	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



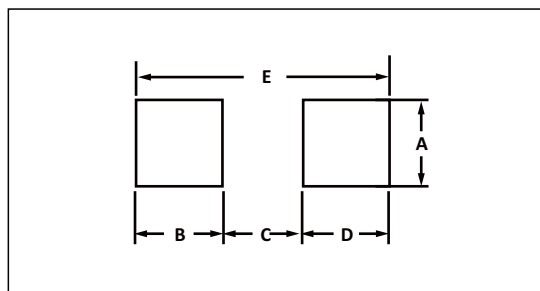
### DO-214AA(SMB) PACKAGE DIMENSIONS



SMB PACKAGE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.96	2.20	0.077	0.087
B	4.35	4.85	0.171	0.191
C	3.30	3.94	0.130	0.155
D	2.20	2.50	0.087	0.098
E	0.76	1.52	0.030	0.060
F	0.02	0.20	0.001	0.008
G	5.08	5.59	0.200	0.220
H	0.15	0.30	0.006	0.012

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

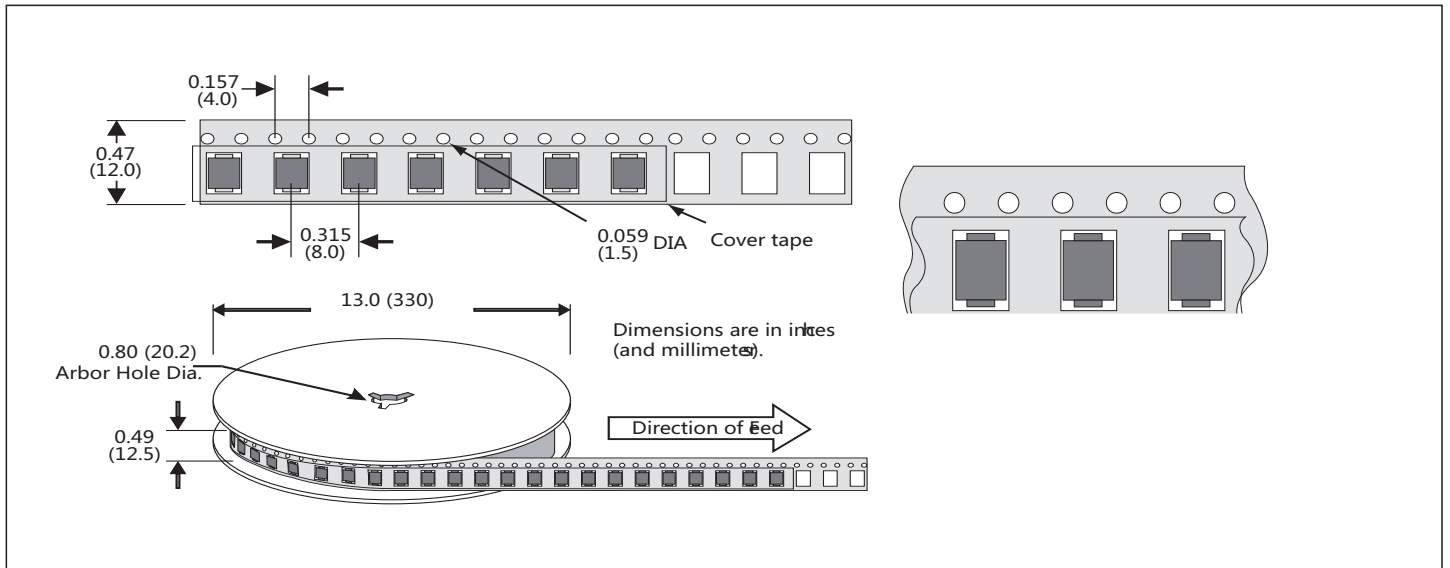
### RECOMMENDED PAD LAYOUT DIMENSIONS



RECOMMENDED PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.20	-	0.087	-
B	1.45	-	0.057	-
C	-	2.55	-	0.100
D	1.45	-	0.057	-
E	5.60 REF		0.220 REF	



### TAPE AND REEL SPECIFICATION



### ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
PxxxxSB	DO-214AA(SMB)	3000PCS	13"



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