

## DESCRIPTION

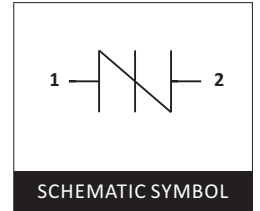
DO-214AA/SMB Thyristor solid state protection thyristor protect telecommunications equipment such as modems, line cards, fax machines, and other CPE. This Series devices are used to enable equipment to meet various regulatory requirements including GR1089, ITUK.20, K.21 and K.45, IEC 60950, and TIA-968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



## 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	C <sub>o</sub> pF Max.
P0080SA	6	5	25	800	4	2.2	≥50	50
P0300SA	25	5	40	800	4	2.2	≥50	70
P0640SA	58	5	77	800	4	2.2	≥150	50
P1800SA	170	5	220	800	4	2.2	≥150	40
P2300SA	190	5	260	800	4	2.2	≥150	35
P2600SA	220	5	300	800	4	2.2	≥150	35
P3100SA	275	5	350	800	4	2.2	≥150	30
P3500SA	320	5	400	800	4	2.2	≥150	30
P4200SA	390	5	500	800	4	2.2	≤50	70

- 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

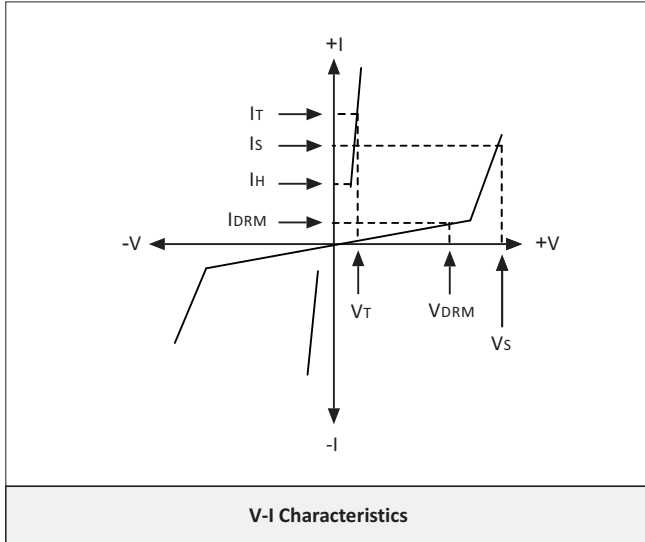
## SURGE RATINGS

Series	IPP 2x10us (A)	IPP 8x20us (A)	IPP 10x560us (A)	IPP 10x1000us (A)	VPP 10x700us (V)	I <sub>TSM</sub> 60Hz (A)	d <sub>i</sub> /d <sub>t</sub> (A/us)
P0080SA Thru P4200SA	150	150	50	45	3000	20	500

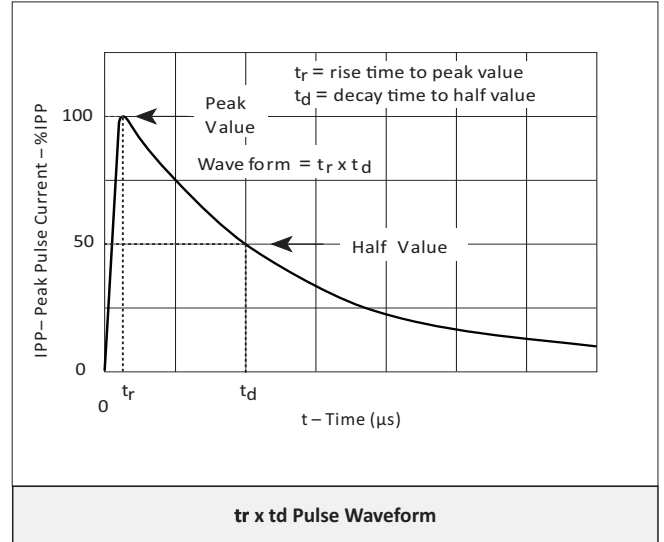
### THERMAL CONSIDERATIONS

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
ReJA	Junction to Ambient on printed circuit	90	°C/W

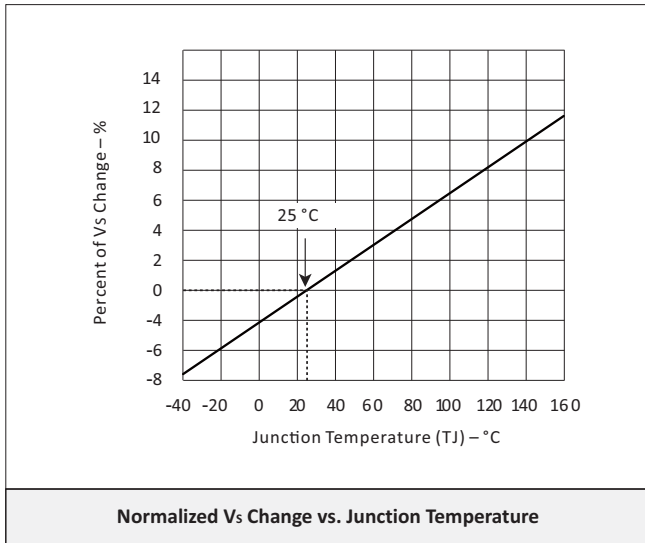
### TYPICAL DEVICE CHARACTERISTICS



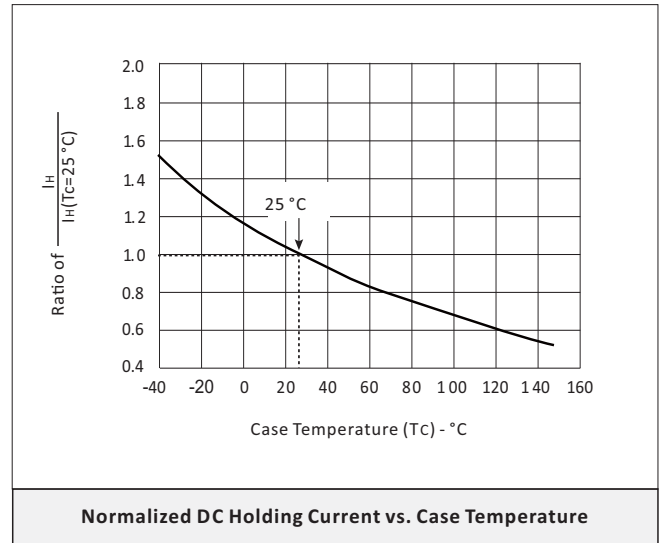
V-I Characteristics



tr x td Pulse Waveform



Normalized Vs Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature

## 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

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:**

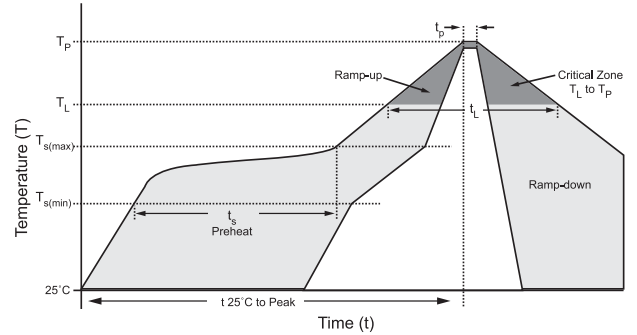
- 1.Dimensions are exclusive of mold flash and metal burrs
- 2.Cathode Band is only applicable to the unidirectional package

## RECOMMENDED PAD LAYOUT DIMENSIONS

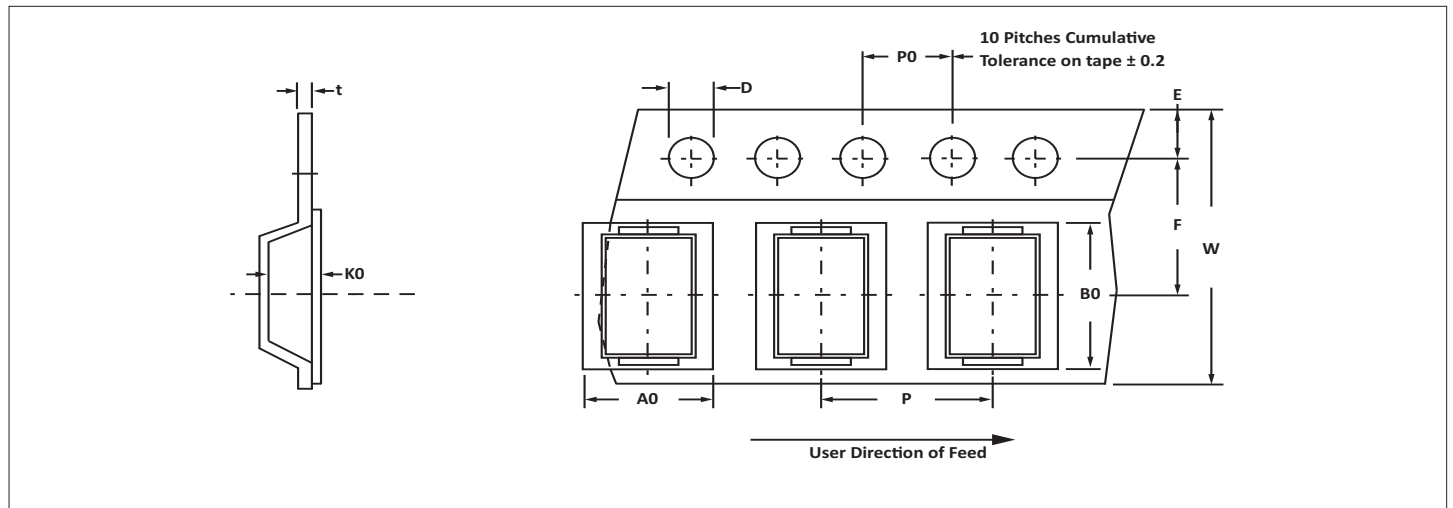
RECOMMENDED PAD LAYOUT DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.20	-	0.087	-
B	1.45	-	0.057	-
C	-	2.55	-	0.100
D	1.45	-	0.057	-
E	5.60 REF		0.220 REF	

### 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

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

### ORDERING INFORMATION

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

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