

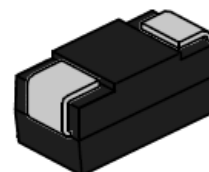


Pxxx1SAP Series TSS

Rev.1.2

DESCRIPTION:

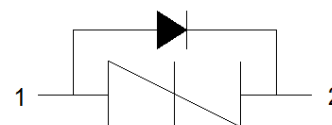
Pxxx1SAP series thyristors are a type of semiconductor component. They are designed for transient surge protection.



SMA

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.
- ✧ Fails short circuit when surged in excess of ratings.
- ✧ UL 497B item recognized. (File No.: E480698).
- ✧ IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact).
- ✧ Non degenerative.



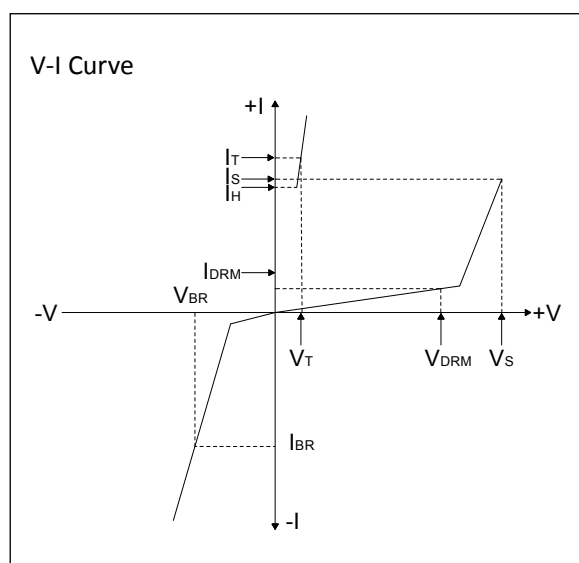
Symbol

ABSOLUTE MAXIMUM RATINGS_(T_A=25°C, RH=45%-75%, unless otherwise noted)

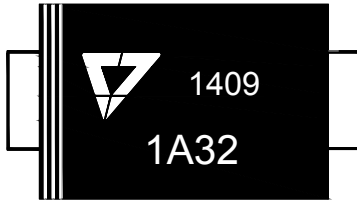
Parameter	Symbol	Value	Unit
Storage temperature range	T _{STG}	-60 to +150	°C
Operating junction temperature range	T _J	-40 to +150	°C
Repetitive peak pulse current@10/1000μs	I _{PP}	50	A
Typical thermal resistance junction to ambient	R _{θJA}	120	°C/W

ELECTRICAL CHARACTERISTICS_(T_A=25°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
V _{BR}	Reverse breakdown voltage
I _{BR}	Test current



MARKING



1A32 : Device Marking Code
1409: In ninth week, 2014

ELECTRICAL CHARACTERISTICS(T_A=25°C, continued)

Part Number	I _{DRM} @V _{DRM} PIN2-1		I _{DRM2} ^① @V _{DRM} PIN2-1		V _S ^② @I _S PIN2-1		V _T @I _T PIN2-1		I _H PIN2-1	C _O ^③ PIN2-1	V _{BR} @I _{BR} PIN1-2		Marking
	μA	V	μA	V	V	mA	V	A	mA	pF	V	mA	
	max		max		max	max	max	max	max	max	max	max	
P0321SAP	1	28	50	28	40	200	1.8	2.2	30	80	18	1	1A32
P0401SAP	1	33	50	33	48	200	1.8	2.2	30	80	18	1	1A40
P0501SAP	1	53	50	53	60	200	1.8	2.2	30	80	18	1	1A50
P0641SAP	1	60	50	60	80	200	1.8	2.2	30	80	18	1	1A64

① I_{DRM2} is measured at T_A=150°C

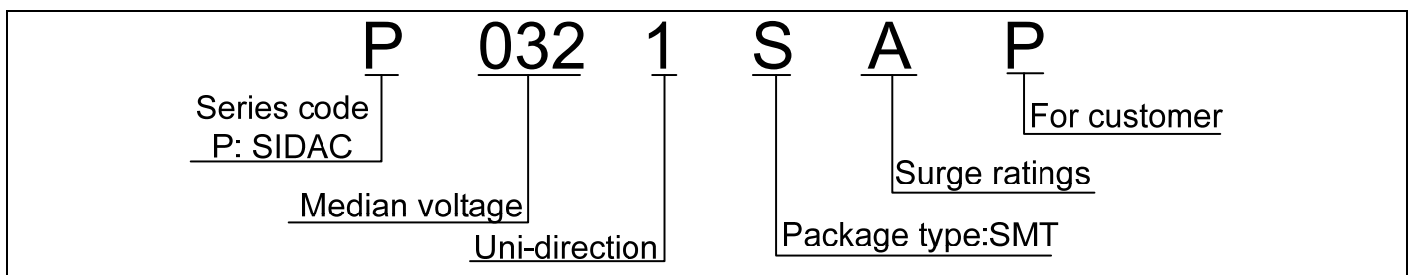
② V_S is measured at 100kV/s

③ Off-state capacitance is measured in V_{DC}=2V, V_{RMS}=1V, f=1MHz

SURGE RATINGS

Series	I _{PP} (A)min			
	2/10μs	8/20μs	10/360μs	10/1000μs
A	150	150	70	50

ORDERING INFORMATION



SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see FIG.2)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ 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)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

FIG.1: tr × td pulse waveform

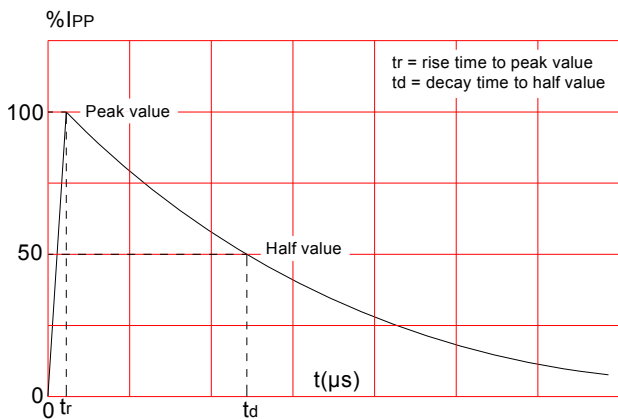


FIG.2: Reflow condition

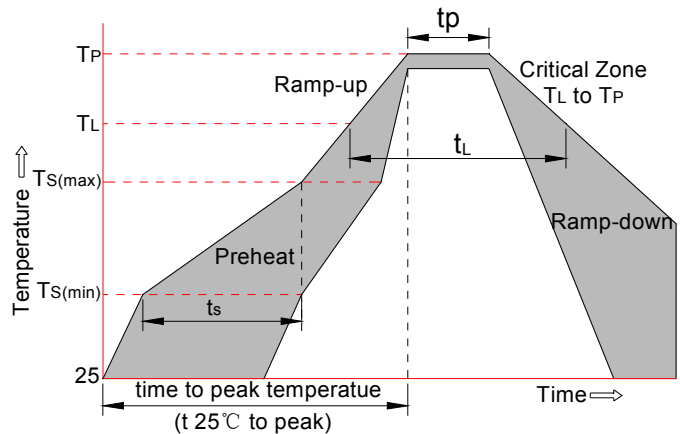


FIG.3: Normalized V_s change vs. junction temperature

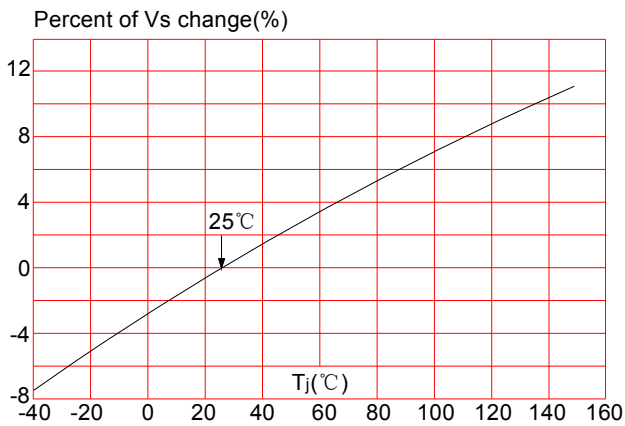
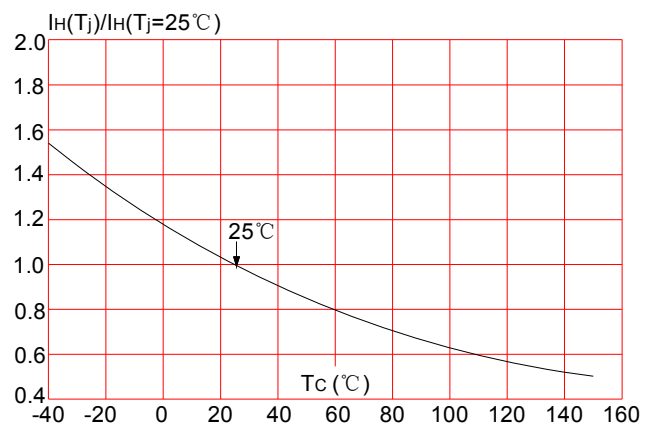
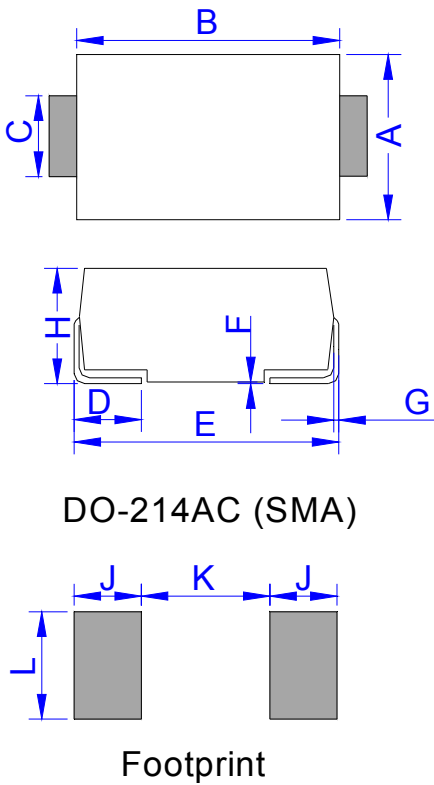


FIG.4: Normalized DC holding current vs. case temperature

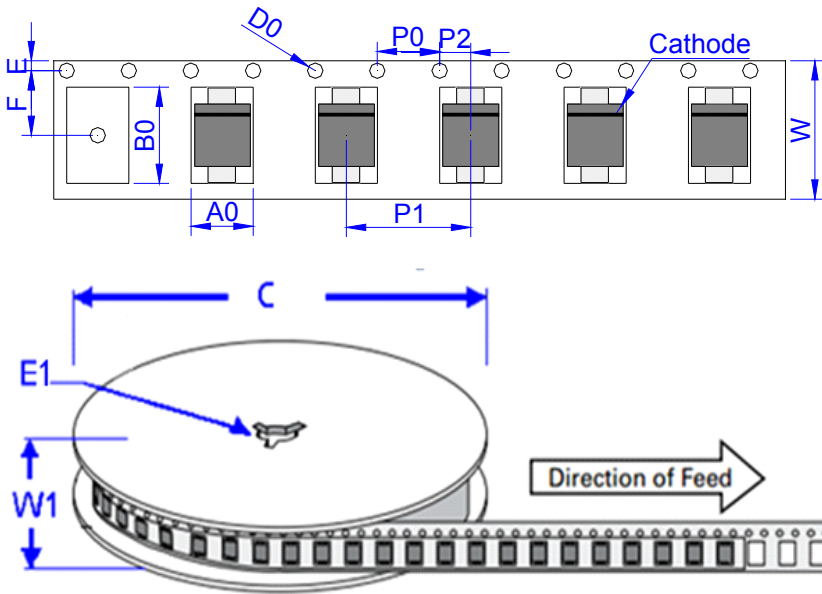


PACKAGE MECHANICAL DATA



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.60	3.00	0.102	0.118
B	4.15	4.65	0.163	0.183
C	1.25	1.65	0.049	0.065
D	0.95	1.52	0.037	0.060
E	4.90	5.30	0.193	0.209
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.00	2.44	0.079	0.096
J	2.00		0.079	
K		2.30		0.091
L	1.80		0.071	

TAPE AND REEL SPECIFICATION-SMA



Ref.	Dimensions	
	Millimeters	Inches
A0	2.79 ± 0.3	0.110 ± 0.012
B0	5.33 ± 0.3	0.210 ± 0.012
C	330.0	13.0
D0	1.55 ± 0.1	0.061 ± 0.004
E	1.75 ± 0.2	0.069 ± 0.008
E1	13.3 ± 0.3	0.524 ± 0.012
F	5.5 ± 0.2	0.217 ± 0.008
P0	4.00 ± 0.2	0.157 ± 0.008
P1	4.00 ± 0.2	0.157 ± 0.008
P2	2.00 ± 0.2	0.079 ± 0.008
W	12.0 ± 0.2	0.472 ± 0.008
W1	15.7 ± 2.0	0.618 ± 0.079

PART No.	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	PER CARTON (PCS)	DESCRIPTION
Pxxx1SAP	0.062	7,500	120,000	13 inch reel pack

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