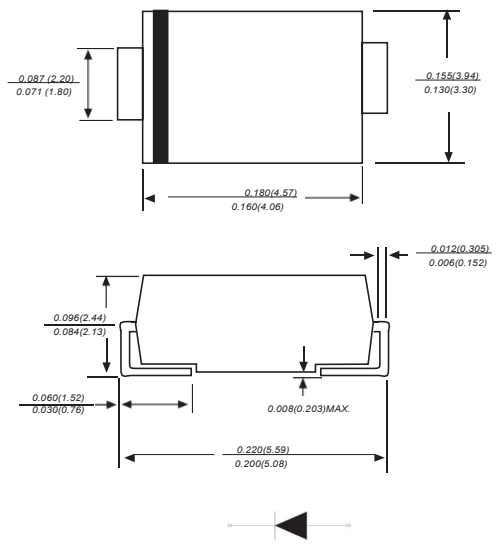
Thyristor Surge Suppressors for surface mounted applications

Features

- Quick response to surge voltage
- Excellent capability of absorbing transient surge
- Solid-state silicon technology, non degenerative
- Eliminates overvoltage caused by fast rising transients
- For surface mounted applications to optimize board space
- Low profile package
- Low leakage current: I=5uA max
- Low on-state voltage
- Low Capacitance
- Bidirectional crowbar protection
- Response Time is < 1us
- GR 1089 Intra-building
- Solid-state silicon technology
- YD/T 950 IEC 61000-4-5
- YD/T 993 ITU K.20/21
- YD/T 1082 TIA-968-A
- ROHS compliant
- Meets MSL 1 Requirements

DO-214AA/SMB



Dimensions in inches and (millimeters)

Applications

- Serial ports
- Data lines and security systems
- Network and telecom
- Audio / Video line

Part Number: P0060SC ~ P4200SC			
Symbol	Parameter	Value	Unit
I_{PP}	10/1000 us	100	A
	10/560 us 8/20 us	150 400	
	2/10 us	500	
V_{PP}	10/700 us	6000	V
V_{TSM}	50/60Hz	30	A
di/dt		500	A/us
T_J	Operating Junction Temperature	-55 to +150	˚C
T_s	Storage Temperature Range	-55 to +150	˚C
$R_{\theta JA}$	Junction to Ambient on printed circuit	90	˚C/W

Maximum ratings are those values beyond which device damage can occur.
Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affect

Part Number & Electrical Parameter

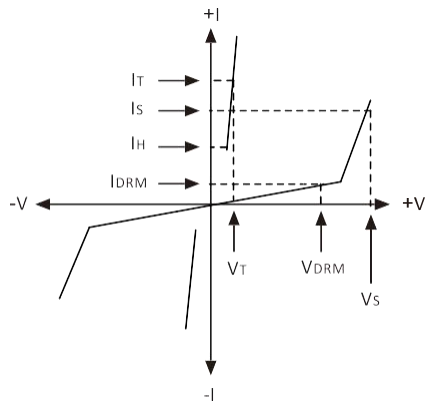
T=25˚C RH=45%-75%

PART NUMBER	Marking	V_{DRM} V Min.	I_{DRM} uA Max.	V_s v Max.	I_S mA	V_T V Max.	I_T A	I_H mA Min.	C_O pF Typ.
P0060SC	P006C	6	5	15	800	4	2.2	40	105
P0080SC	P008C	6	5	25	800	4	2.2	40	105
P0150SC	P015C	15	5	25	800	4	2.2	40	105
P0300SC	P03C	25	5	40	800	4	2.2	40	105
P0640SC	P06C	58	5	77	800	4	2.2	120	95
P0720SC	P07C	65	5	88	800	4	2.2	120	95
P0900SC	P09C	75	5	98	800	4	2.2	120	85
P1100SC	P11C	90	5	130	800	4	2.2	120	85
P1300SC	P13C	120	5	160	800	4	2.2	120	85
P1500SC	P15C	140	5	180	800	4	2.2	120	80
P1800SC	P18C	170	5	220	800	4	2.2	120	80
P2300SC	P23C	190	5	260	800	4	2.2	120	75
P2600SC	P26C	220	5	300	800	4	2.2	120	75
P3100SC	P31C	275	5	350	800	4	2.2	120	65
P3500SC	P35C	320	5	400	800	4	2.2	120	65
P4200SC	P42C	400	5	520	800	4	2.2	≤50	65

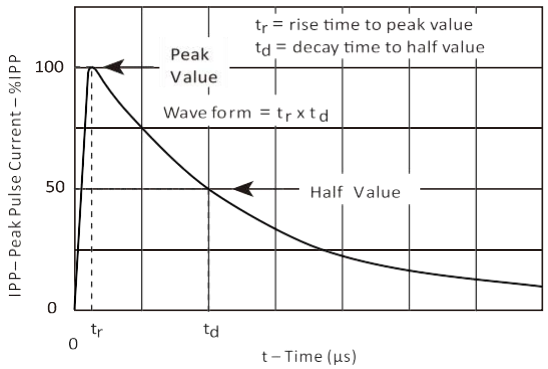
1. V_S is measured at 100KV/S
2. Off-state capacitance is measured in V_{DC}=2V, V_{RMS}=1V, F=1MH$_Z$
3. All measurements are made at an ambient temperature of 25˚C

Typical Device Characteristics

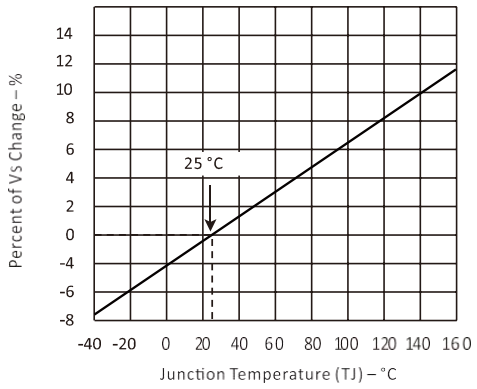
V-I Characteristics



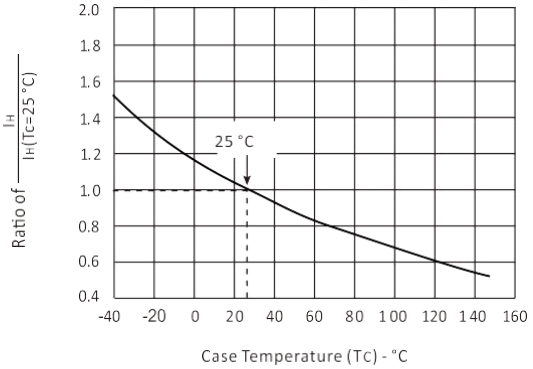
tr x td Pulse Waveform



Normalized V_S Change vs. Junction Temperature



Normalized DC Holding Current vs. Case Temperature

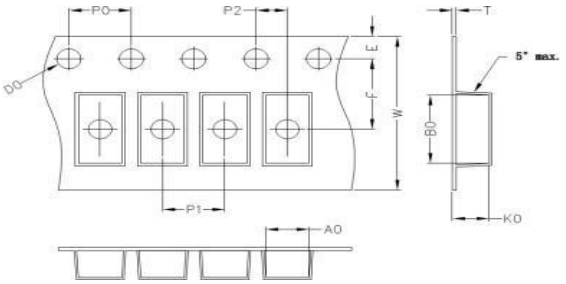


Environmental Characteristics

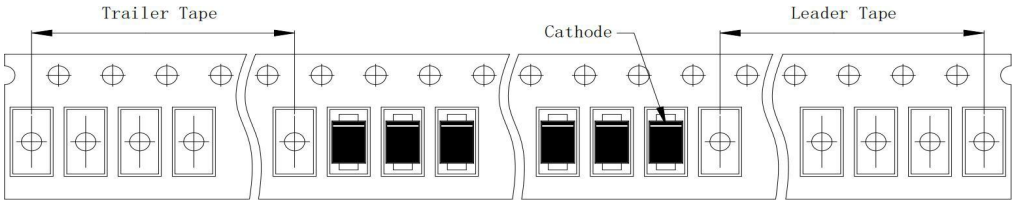
Testing Items	Technical Standards
High Temperature Reverse Bias Test	Temperature:150±3℃,Bias=80%V_{DRM};Time:168H
High Temperature Life Test	Temperature:150℃;Time:168H
High-Low Temperature Cycle Test	Temperature:From -40℃ to 150℃;Dwell Time:30min,10-100 Cycles
High Temperature&High Humidity Test	Temperature:85℃.Humidity:85%;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

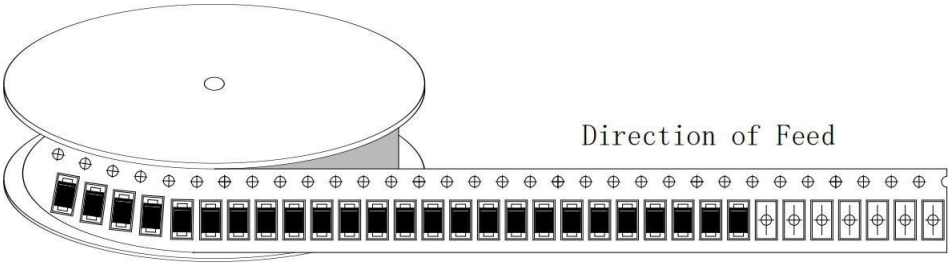
Package Information

Carrier Dimension(mm)

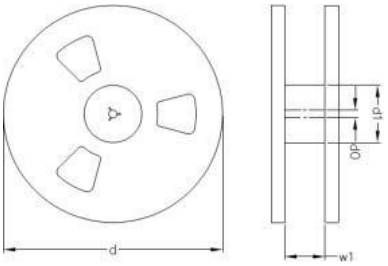


A0	B0	K0	D0	E	F
3.80 ¡À0.2	5.40¡À0.2	2.45 ¡À0.2	1.55 ¡À0.1	1.75 ¡À0.2	5.50 ¡À0.2
P0	**P1**	**P2**	**T**	**W**	
4.0 ¡À0.1	8.0 ¡À0.1	2.0 ¡À0.1	0.25¡À0.05	12 ¡À0.5	
Leader Tape		25 Empty Pockets			
Trailer Tape		25 Empty Pockets			





Reel Dimension(mm)



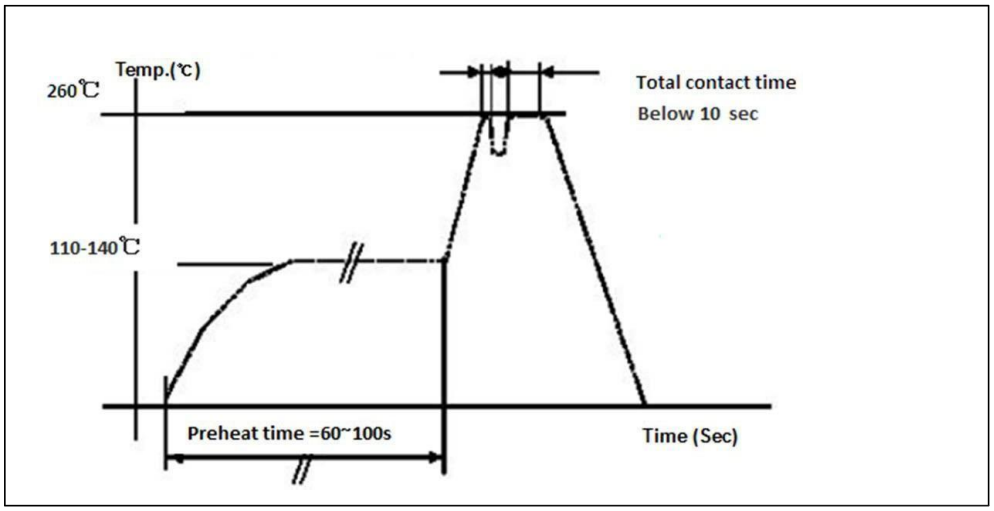
d	d0	d1	w1	t1
330 ¡À2.0	13.5¡À0.2	100 ¡À0.5	13.5 ¡À0.5	1.20 ¡À0.2

Package Specifications

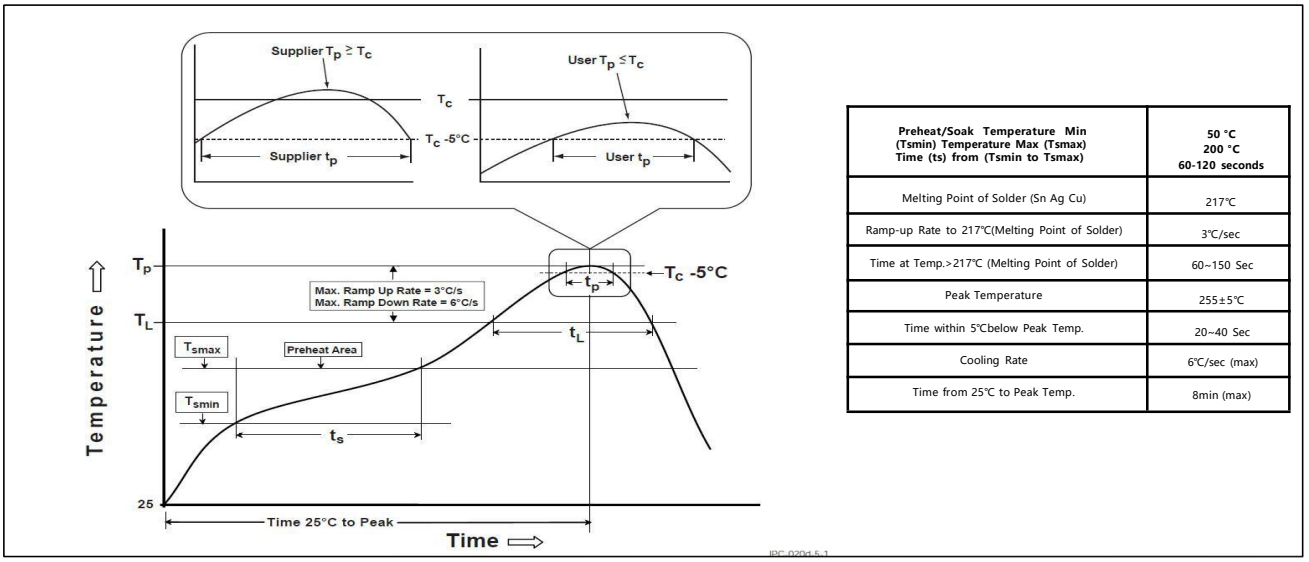
Package	Reel Size	Reel DIA. (mm)	Q'TY/Reel (Kpcs)	Box Size (mm)	QTY/Box (Kpcs)	Carton Size (mm)	Q'TY/Carton (Kpcs)
SMB	13'	330	3.0	340*340*40	6.0	440*360*360	60

Recommended Soldering Profile for Rectifier Diodes (Pb Free)

a) Wave Soldering Profile



b) Reflow Soldering Profile (Pb Free Application), refer to IPC/JEDEC J-STD-020



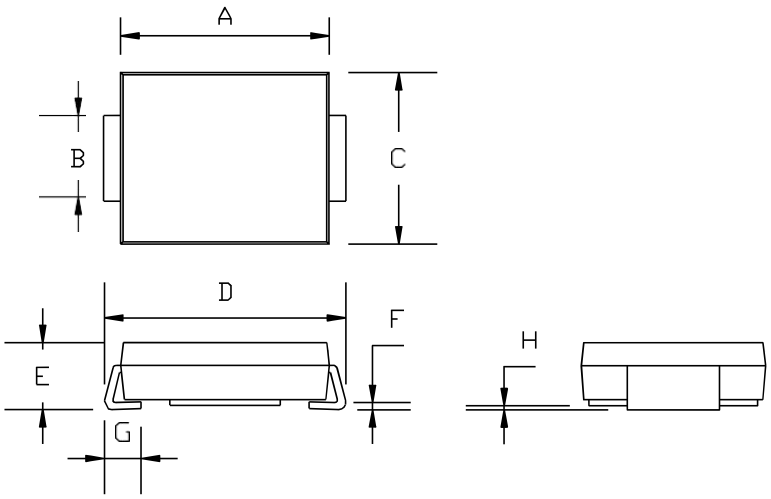
Preheat/Soak Temperature Min (Tsmin) Temperature Max (Tsmax) Time (ts) from (Tsmin to Tsmax)	50 °C 200 °C 60-120 seconds
Melting Point of Solder (Sn Ag Cu)	217℃
Ramp-up Rate to 217℃(Melting Point of Solder)	3℃/sec
Time at Temp.>217℃ (Melting Point of Solder)	60~150 Sec
Peak Temperature	255±5℃
Time within 5℃below Peak Temp.	20~40 Sec
Cooling Rate	6℃/sec (max)
Time from 25℃ to Peak Temp.	8min (max)

c) Manual Soldering

When using an electric soldering iron for manual soldering, it is recommended that the temperature does not exceed 300°C and the soldering time is less than 10 seconds.

Package Mechanical Data

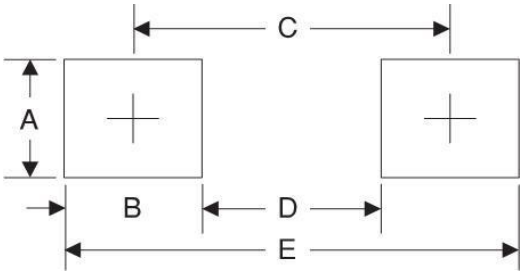
DO-214AA(SMB)



DO-214AA (SMB)		
Dim	Min	Max
A	4.05	4.75
B	1.85	2.15
C	3.30	3.90
D	5.00	5.50
E	2.10	2.60
F	0.15	0.30
G	0.75	1.50
H	0.05	0.20

Dimensions in millimeters

Suggested Pad Layout



Symbol	Unit (mm)	Unit (inch)
A	2.30	0.091
B	2.00	0.078
C	4.10	0.161
D	2.10	0.083
E	6.10	0.240

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