

HF RoHS

## SACB Series



### Agency Approvals

AGENCY	AGENCY FILE NUMBER
	E230531

### Maximum Ratings and Thermal Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak pulse power dissipation at T <sub>A</sub> =25°C by 10×1000µs waveform (fig.1)( Note 1)	P <sub>PPM</sub>	500	W
Power dissipation on infinite heat sink at T <sub>J</sub> =50°C	P <sub>MAV</sub>	3.0	W
Peak Pulse Power Dissipation at T <sub>A</sub> =25°C by 10×1000µs waveform (Fig. 3) (Note 1)	I <sub>PPM</sub>	See Table 1	Amps
Operating Junction and Storage Temperature Range	T <sub>J</sub> , T <sub>STG</sub>	-65 to 150	°C
Typical Thermal Resistance Junction to Lead	R <sub>θJL</sub>	30	°C/W
Typical Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	120	°C/W

Note:

1. Non-repetitive current pulse, per Fig. 3 and derated above T<sub>A</sub> = 25°C per Fig. 2.

### Description

SACB series is designed specifically to protect sensitive electronic equipment from voltage transients induced by lightning and other transient voltage events.

### Features

- Halogen-Free
- RoHS compliant
- For surface mounted applications in order to optimize board space
- Low profile package
- Built-in strain relief
- Typical maximum temperature coefficient  
 $\Delta V_{BR} = 0.1\% \times V_{BR} @ 25^\circ\text{C} \times \Delta T$
- Glass passivated chip junction
- 500W peak pulse power capability at 10×1000µs waveform, repetition rate (duty cycles):0.01 %
- Fast response time: typically less than 1.0ps from 0V to BV min
- Excellent clamping capability
- Low incremental surge resistance
- High Temperature soldering guaranteed: 260°C/40 seconds at terminals
- Plastic package has Underwriters Laboratory Flammability 94V-O
- Matte Tin Lead-free Plated

### Applications

TVS devices are ideal for the protection of I/O Interfaces, V<sub>CC</sub> bus and other vulnerable circuits used in Telecom, Computer, Industrial and Consumer electronic applications.

SACB Series

### Electrical Characteristics

Part Number	Marking Code	Stand-Off Voltage (Note1) $V_R$ (V)	Minimum Breakdown Voltage at $I_T=1.0\text{mA}$ $V_{BR}$ (V)	Maximum Reverse Leakage at $V_R$ $I_R$ ( $\mu\text{A}$ )	Maximum Clamping Voltage at $I_{PP}=5.0\text{A}$ $V_C$ (V)	Maximum Peak Pulse Current per (Fig.3) $I_{PP}$ (A)	Maximum Junction Capacitance at 0 Volts (pF)	Working Inverse Blocking Voltage $V_{WIB}$ (V)	Inverse Blocking Leakage Current at $V_{WIB}$ @ $I_{IB}$ (mA)	Peak Inverse Blocking Voltage $V_{PIB}$ (V)	UL Recognition
SACB5.0	SKE	5.0	7.60	300	10.0	44.0	45	75	1.0	100	X
SACB6.0	SKG	6.0	7.90	300	11.2	41.0	45	75	1.0	100	X
SACB7.0	SKM	7.0	8.33	300	12.6	38.0	45	75	1.0	100	X
SACB8.0	SKR	8.0	8.89	100	13.4	36.0	45	75	1.0	100	X
SACB8.5	SKT	8.5	9.44	50	14.0	34.0	45	75	1.0	100	X
SACB10	SKX	10.0	11.10	5	16.3	29.0	45	75	1.0	100	X
SACB12	SLE	12.0	13.30	5	19.0	25.0	45	75	1.0	100	X
SACB15	SLM	15.0	16.70	5	23.6	20.0	45	75	1.0	100	X
SACB18	SLT	18.0	20.00	5	28.8	15.0	45	75	1.0	100	X
SACB22	SLX	22.0	24.40	5	35.4	14.0	45	75	1.0	100	X
SACB26	SME	26.0	28.90	5	42.3	11.1	45	75	1.0	100	X
SACB30	SMK	30.0	33.30	5	48.6	10.0	45	75	1.0	100	X
SACB36	SMP	36.0	40.00	5	60.0	8.6	45	75	1.0	100	X
SACB45	SMV	45.0	50.00	5	77.0	6.8	45	150	1.0	200	X
SACB50	SMZ	50.0	55.50	5	88.0	5.8	45	150	1.0	200	X

### Ratings and Characteristic Curves ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Figure 1 - Peak Pulse Power Rating Curve

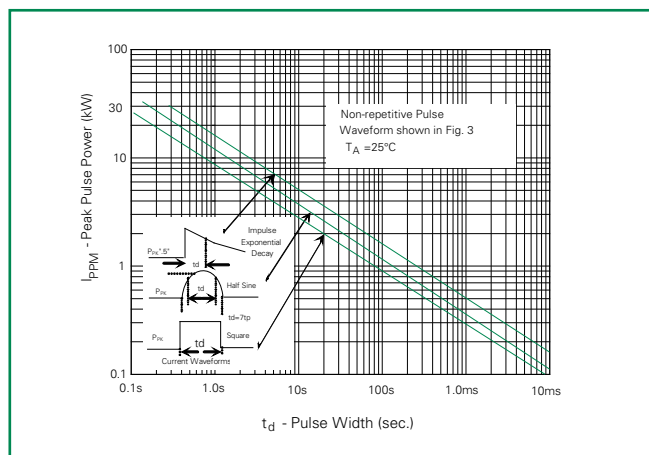


Figure 2 - Pulse Derating Curve

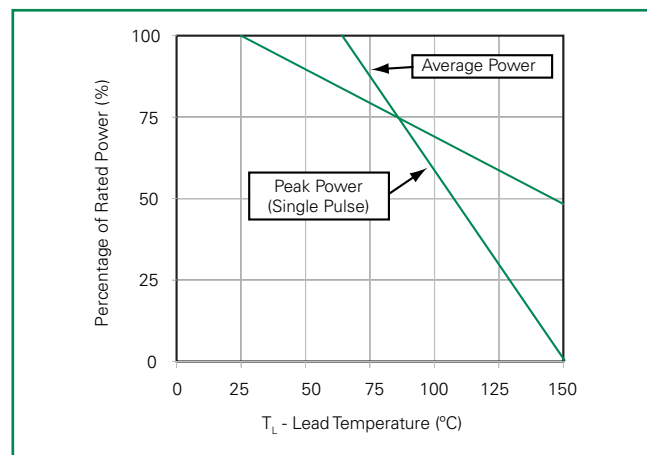


Figure 3 - Pulse Waveform

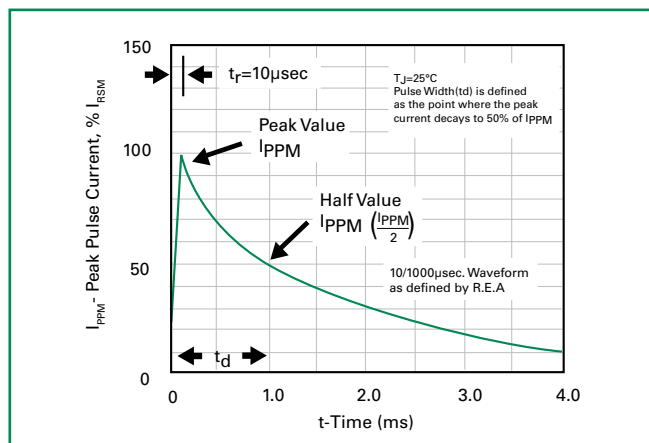
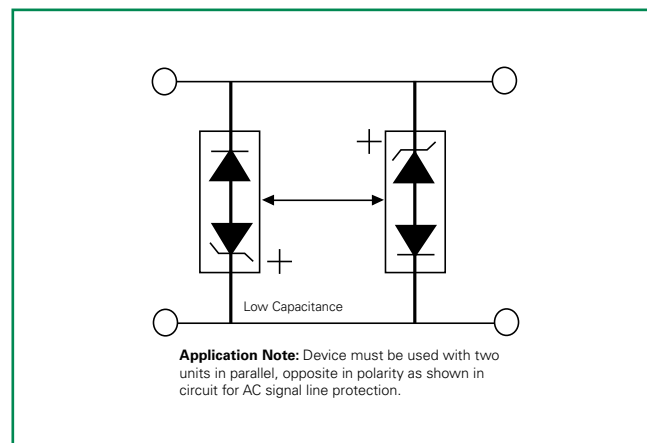
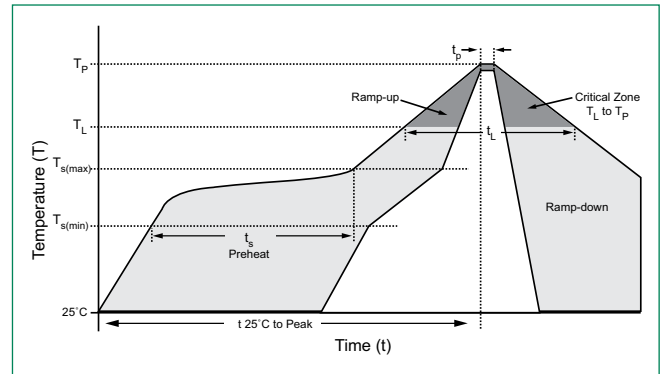


Figure 4 - AC Line Protection Application



### Soldering Parameters

Reflow Condition		Lead-free assembly
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/second max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/second max
Reflow	- Temperature ( $T_L$ ) (Liquidus)	217°C
	- Time (min to max) ( $t_s$ )	60 – 150 seconds
Peak Temperature ( $T_p$ )		260 <sup>+0/-5</sup> °C
Time within 5°C of actual peak Temperature ( $t_p$ )		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature ( $T_p$ )		8 minutes Max.
Do not exceed		280°C



### Flow/Wave Soldering (Solder Dipping)

<b>Peak Temperature :</b>	265°C
<b>Dipping Time :</b>	10 seconds
<b>Soldering :</b>	1 time

### Physical Specifications

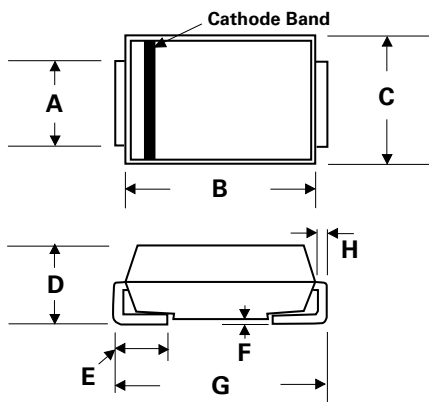
<b>Weight</b>	0.003oz., 0.093g
<b>Case</b>	JEDEC DO-214AA molded plastic body over glass passivated junction.
<b>Polarity</b>	Color band denotes cathode except Bidirectional
<b>Terminal</b>	Matte Tin-plated leads. Solderable per JESD22-B102D.

### Environmental Specifications

<b>Temperature Cycle</b>	JESD22-A104
<b>Pressure Cooker</b>	JESD 22-A102
<b>High Temp. Storage</b>	JESD22-A103
<b>HTRB</b>	JESD22-A108
<b>Thermal Shock</b>	JESD22-A106

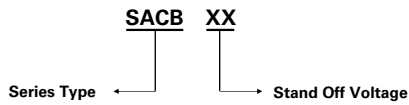
### Dimensions

DO-214AA (SMB J-Bend)

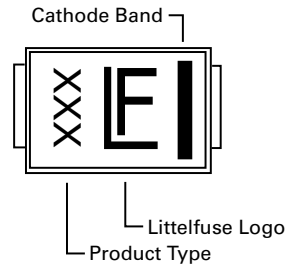


Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.077	0.086	1.950	2.200
B	0.160	0.180	4.060	4.570
C	0.130	0.155	3.300	3.940
D	0.084	0.096	2.130	2.440
E	0.030	0.060	0.760	1.520
F	-	0.008	-	0.203
G	0.205	0.220	5.210	5.590
H	0.006	0.012	0.152	0.305

### Part Numbering System



### Part Marking System



### Packaging

Part number	Component Package	Quantity	Packaging Option	Packaging Specification
SACBXX	DO-214AA	3000	Tape & Reel – 12mm/13" tape	EIA STD RS-481

### Schematic

