

Surface Mount Auto Surge Suppressor

Working Peak Reverse Voltage - 22 to 48 Volts

10000 Watt Peak Pulse Power

Features

- Glass passivated chip
- 10000 W peak pulse power capability with a 10/1000 μ s waveform, repetitive rate (duty cycle): 0.01 %
- Meet AEC-Q101 requirement
- Low leakage
- Excellent clamping capability
- Very fast response time
- RoHS compliant

Mechanical Data

- Plastic package DO-218AB/SOD-BLOCK
- Epoxy: UL 94V-0 rate flame retardant
- Polarity: Heatsink is anode

Maximum Ratings($T_A=25^{\circ}\text{C}$ unless otherwise noted)

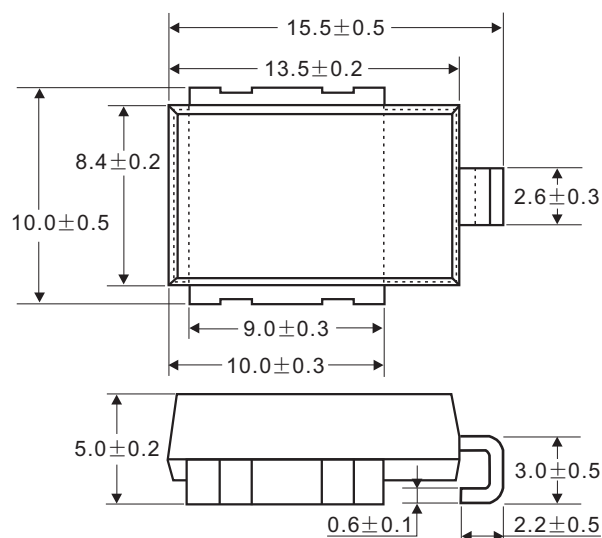
RATING	SYMBOL	VALUE	UNITS
Peak power dissipation with a 10/1000 μ s waveform(Note 1)	P_{PP}	10000	Watts
Peak pulse current with a 10/1000 μ s waveform(Note 1)	I_{PP}	SEE TABLE 1	Amps
Power dissipation on infinite heatsink at $T_L = 25^{\circ}\text{C}$	P_D	8.0	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave	I_{FSM}	700	Amps
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175	$^{\circ}\text{C}$

Notes :

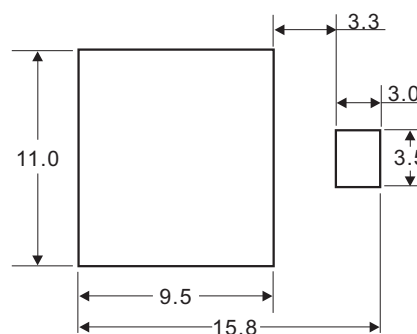
1. Non-repetitive current pulse , per Fig. 2 and derated above $T_A = 25^{\circ}\text{C}$ per Fig. 1 .

Dimensions (DO-218AB)

DO-218AB



Recommended Mounting Pad Layout



Dimensions in millimeters

Electrical Characteristics

ASC Part Number		Working Peak Reverse Voltage	Breakdown Voltage $V_{BR}@I_T$			Max. Reverse Leakage I_R @ V_{RWM}	Max. I_R @ V_{RWM} $T_J=175^\circ\text{C}$	Max. Clamping Voltage V_c @ I_{pp} 10/1000 μs	
UNI-Polar	BI-Polar	$V_{RWM}(V)$	$V_{BR}(V)\text{Min.}$	$V_{BR}(V)\text{Max.}$	$I_T(mA)$	$I_R(\mu A)$	$I_R(\mu A)$	$V_c(V)$	$I_{pp}(A)$
ASC22A	ASC22CA	22	24.4	26.9	5	10	150	35.5	281.6
ASC24A	ASC24CA	24	26.7	29.5	5	10	150	38.9	257.1
ASC26A	ASC26CA	26	28.9	31.9	5	10	150	42.1	237.6
ASC28A	ASC28CA	28	31.1	34.4	5	10	150	45.4	220.3
ASC30A	ASC30CA	30	33.3	36.8	5	10	150	48.4	206.7
ASC33A	ASC33CA	33	36.7	40.6	5	10	150	53.3	187.6
ASC36A	ASC36CA	36	40.0	44.2	5	10	150	58.1	172.1
ASC48A	ASC48CA	48	53.3	58.9	5	10	150	77.4	129.2

IEC Compatibility

ISO16750-2 Test A Test Waveform								
ASC Part Number		12V system	24V system	Resistance				
		100V@400ms	202V@350ms	0.5 Ω	1 Ω	2 Ω	4 Ω	8 Ω
ASC22A	ASC22CA	✓	—	?	✓	✓	✓	✓
ASC24A	ASC24CA	✓	—	?	✓	✓	✓	✓
ASC26A	ASC26CA	✓	—	?	✓	✓	✓	✓
ASC28A	ASC28CA	✓	—	?	✓	✓	✓	✓
ASC30A	ASC30CA	—	✓	?	×	?	✓	✓
ASC33A	ASC33CA	—	✓	?	×	?	✓	✓
ASC36A	ASC36CA	—	✓	?	×	?	✓	✓
ASC48A	ASC48CA	—	✓	?	×	?	✓	✓

Notes :

- ? :The test results would be different depending on the specific circuit parameters or test environment
- x :Failed

Ratings and Characteristic Curves (TA=25 °C unless otherwise noted)

Fig.1 Power Derating Cure

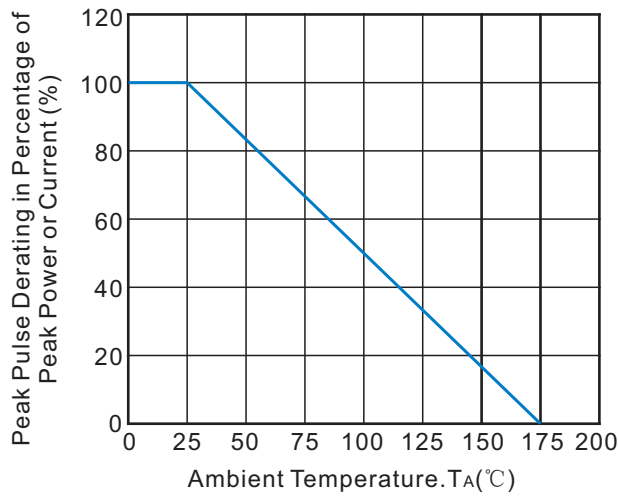


Fig.2 Pulse Waveform

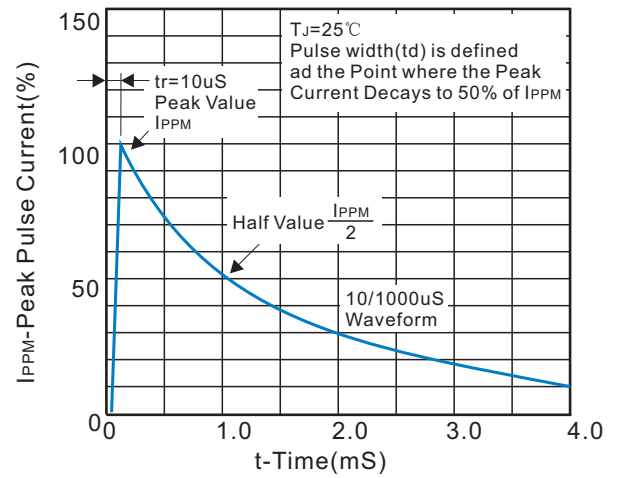


Fig.3 Steady State Power Derating Curve

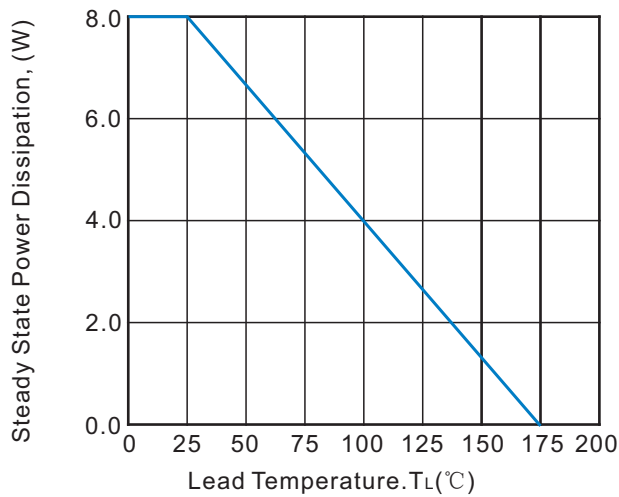


Fig.4 Peak Pulse Power Rating Cure

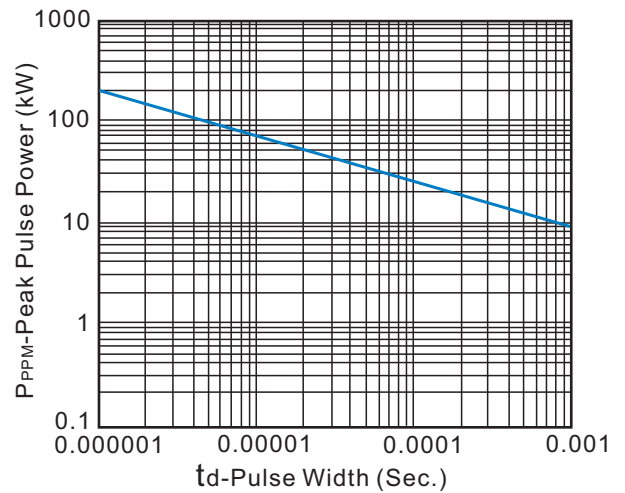
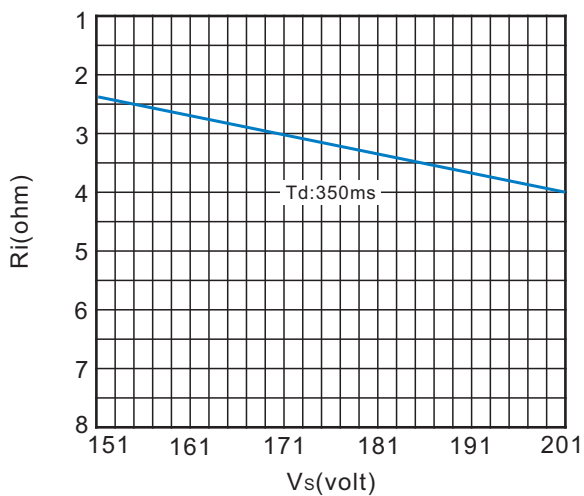


Fig.5 Ri-Vs chart for ISO-16750-2 Test A : 24V System

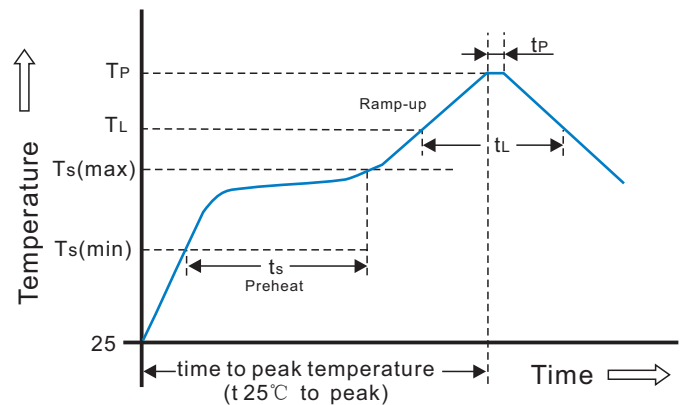


Recommended Soldering Conditions

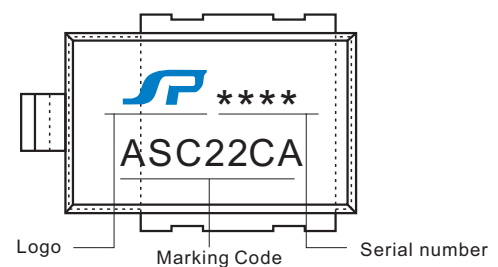
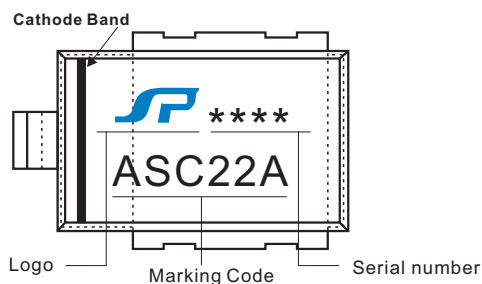
Recommended Conditions

IR Reflow Condition		
Pre Heat	Temperature Min($T_{s(min)}$)	150°C
	Temperature Max($T_{s(max)}$)	200°C
	Time(Min to Max)(t_s)	60-180secs
Ramp up rate(150-200°C)		3°C/sec.Max.
Reflow	Temperature(T_L)(Liquidus)	220°C. Min.
	Temperature(t_L)	60-150secs
	Peak Temp(T_P)	245°C
Ramp up rate(220-200°C)		3°C/sec.Max.
Time within actual Peak Temp(t_P)		10-30 secs
Ramp-down Rate		3°C/sec.Max.
Time 25°C to Peak Temp(T_P)		6 min.Max.
Do not exceed		245°C

Reflow Soldering

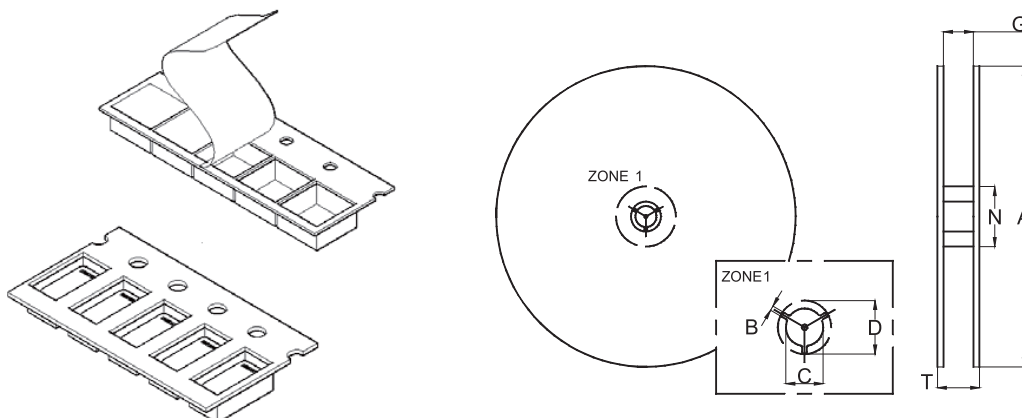


Marking Code



Tape And Reel Specification

Symbol	Ea Per Reel	REEL DIA (mm)	Industry Standard
ASC***	750	330	EIARS-481



Tape Size	A Max.	B Min.	C	D Min.	N Min.	G Max.	T Max.
24(0.945)	330 ± 2.0 (13.0 ± 0.079)	1.5(0.059)	13.0 ± 0.50 (0.51 ± 0.002)	20.2(0.795)	50(1.97)	26.4(1.039)	30.4(1.197)