

Features

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

Mechanical Data

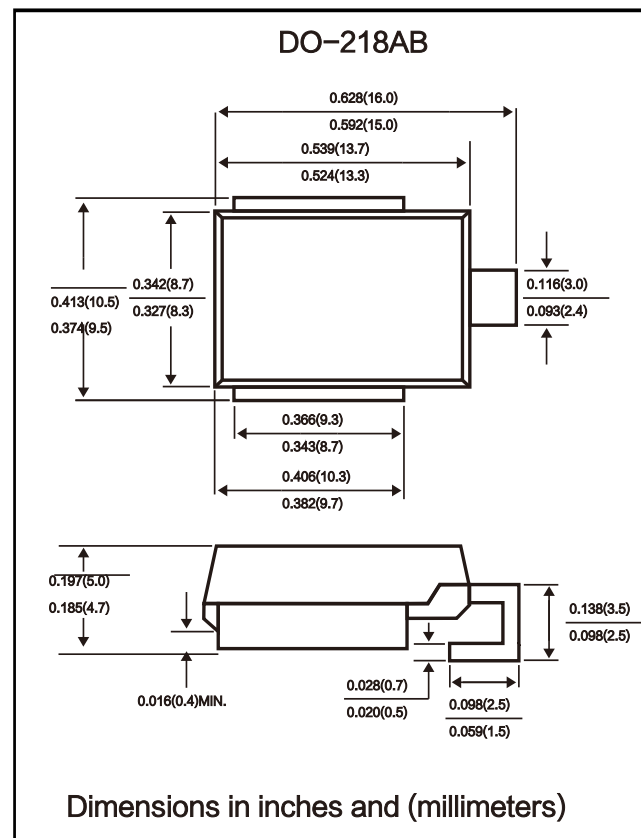
Plastic package DO-218AB/SOD-BLOCK
 Epoxy: UL 94V-0 rate flame retardant
 Polarity: Heatsink is anode

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

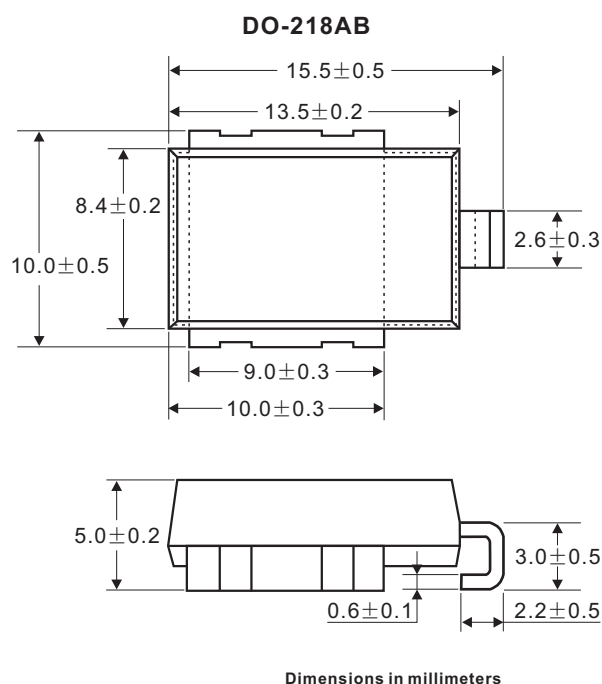
RATING	SYMBOL	VALUE	UNITS
Peak power dissipation with a 10/1000μs waveform (Note 1)	P_{PP}	10000	Watts
Peak pulse current with a 10/1000μs waveform (Note 1)	I_{PP}	SEE TABLE 1	Amps
Power dissipation on infinite heatsink at $T_L = 25^\circ\text{C}$	P_D	8.0	Watts
Peak Forward Surge Current, 8.3ms Single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

Notes :

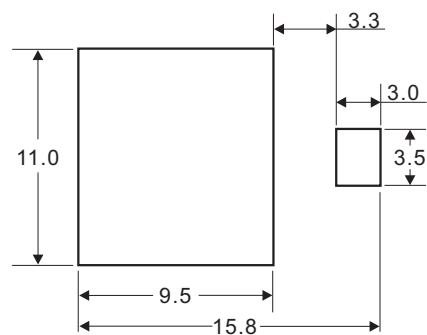
1. Non-repetitive current pulse, per Fig. 2 and derated above $T_A = 25^\circ\text{C}$ per Fig. 1.



Dimensions (DO-218AB)



Recommended Mounting Pad Layout



Dimensions in millimeters

Electrical Characteristics

TABLE 1

***Stand for commonly used models

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} $T_J=175^\circ C$	Max. Clamping Voltage V_c @ I_{pp} 10/1000 μs	
	$V_{RWM}(V)$	$V_{BR}(V)$ Min.	$V_{BR}(V)$ Max.	$I_T(mA)$	$I_R(\mu A)$	$I_R(\mu A)$	$V_c(V)$	$I_{pp}(A)$
ASC22A	22	24.4	26.9	5	10	150	35.5	281.6
ASC33A	33	36.7	40.6	5	10	150	53.3	187.6
* ASC36A	36	40.0	44.2	5	10	150	58.1	172.1
ASC42A	42	44.4	49.1	5	10	150	64.5	155.0

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	✓	—	?	✓	✓	✓	✓
ASC33A	—	✓	—	×	?	✓	✓
ASC36A	—	✓	—	×	?	✓	✓
ASC42A	—	✓	—	×	?	✓	✓

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

Fig.1 Power Derating Cure

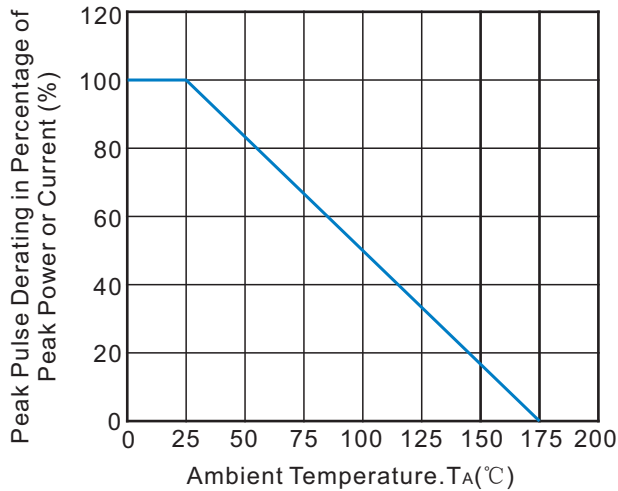


Fig.2 Pulse Waveform

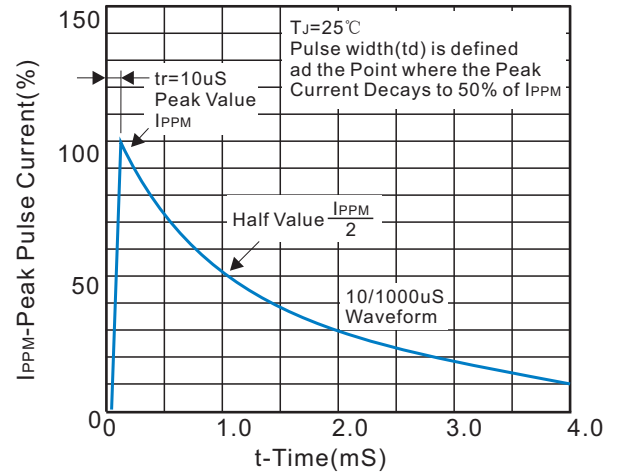


Fig.3 Steady State Power Derating Curve

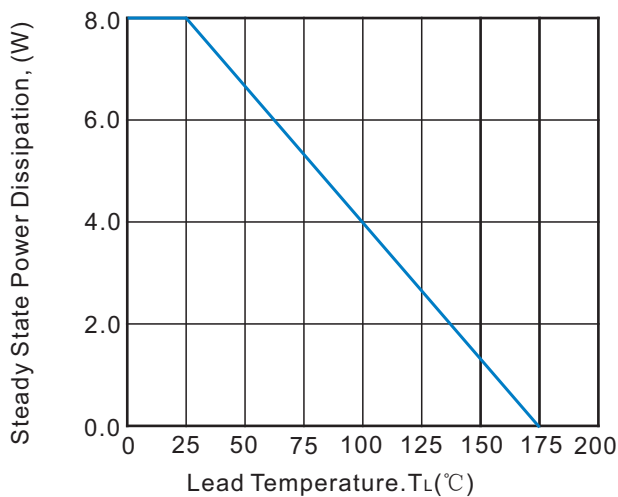


Fig.4 Peak Pulse Power Rating Cure

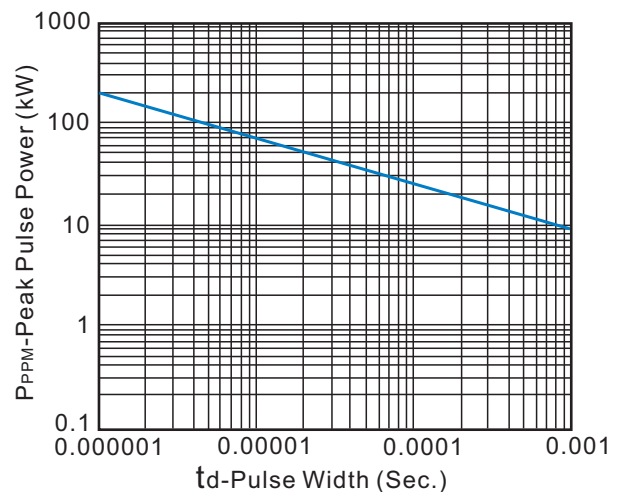
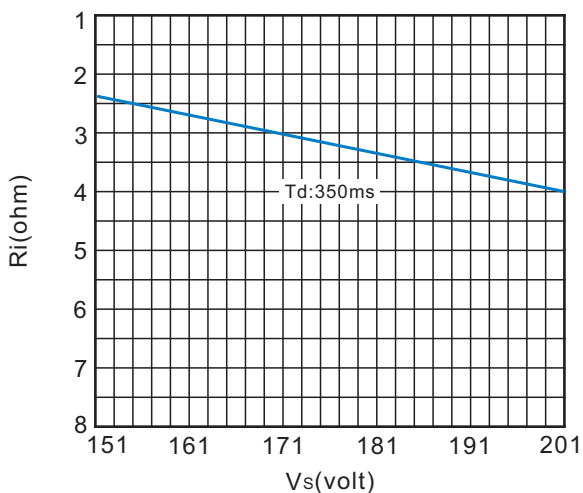


Fig.5 Ri-Vs chart for ISO-16750-2 Test A : 24V System



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		5°C/sec.Max.
Time 25°C to Peak Temp(T_P)		6 min.Max.
Do not exceed		280°C

Reflow Soldering

