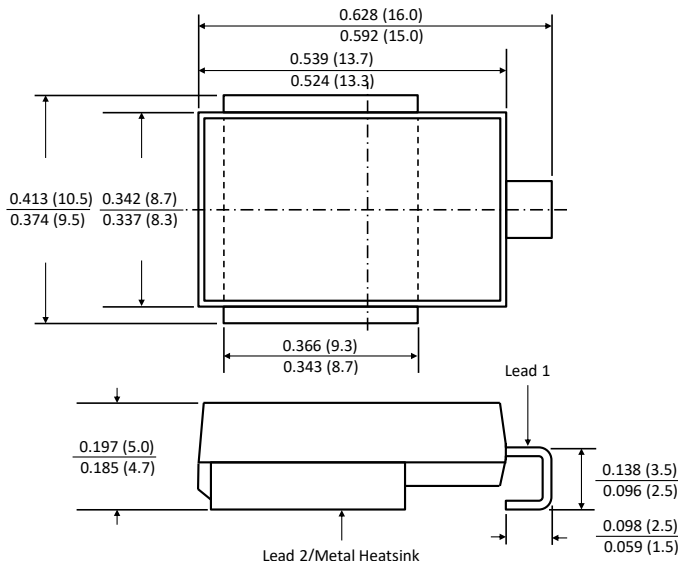


DO-218 Package



Dimension in inches and (millimeter)

PRIMARY CHARACTERISTICS	
VRWM	16V to 43V
VBR	17.8V to 52.8V
PPPM (10/1000us)	6600W
TJ max	175°C
Polarity	Uni-directional & Bi-directional
Package	DO-218

FEATURES

- Glass passivated junction technology
- Low forward voltage drop for Uni-directional polarity
- Fast response time: typical less than 1.0ps from 0 Volts to BV
- TJ = 175°C capability suitable for high reliability
- High surge capability
- Maximum peak power dissipation: 6600 Watts
- Meets ISO7637-2 & ISO16750-2 surge specification (varied by test condition)
- Halogen-Free
- RoHS compliant
- AEC-Q101 qualified



MECHANICAL DATA

Case: DO-218. Molded plastic over glass passivated junction Molding compound meets UL 94V-0 flammability rating

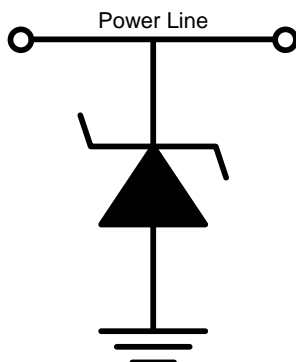
Terminal: Solderable per MIL-STD-750, Method 2026

Polarity: Heat sink is anode, Color band denoted positive end (cathode) except Bidirectional.

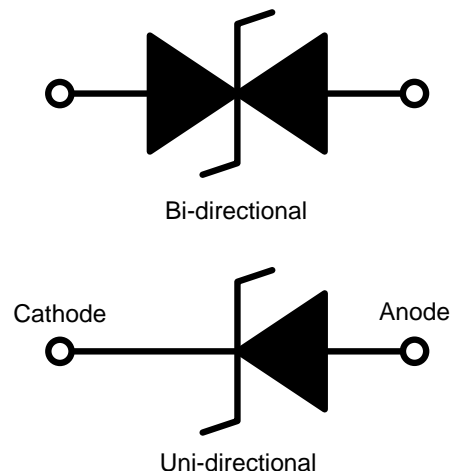
Typical Application

Use in sensitive electronics protection against voltage transients induced by inductive load switching and lighting. Especially for automotive load dump protection application.

Typical Application



Functional Diagram



Ordering Information

Part Number	Quantity	Packing Option	Component Package	Packing Specification
ALD8SxxA	750	Tape & Reel - 24mm/13" tape	DO-218	EIA STD RS-481



AOS products are offered in packages with Pb-free plating and compliant to RoHS standards. Please visit <https://aosmd.com/sites/default/files/media/AOSGreenPolicy.pdf> for additional information.

MAXIMUM RATINGS (25°C ambient temperature unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 10/1000µs waveform ⁽¹⁾	PPPM	6600	Watts
Peak Pulse Power Dissipation on 10/10000µs waveform ⁽¹⁾	PPPM	5200	Watts
Peak Pulse Current of on 10/1000µs waveform	IPPM	See next table	Amps
Power dissipation on infinite heatsink (T _C = 25°C)	P _D	8	Watts
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave, Superimposed on Rated Load. (JEDEC Method)	I _{FSM}	700	Amps
Operating junction and Storage Temperature Range	T _J T _{STG}	-55 to +175	°C

Note:

1. Non-repetitive current pulse above T_A = 25 °C

ELECTRICAL CHARACTERISTICS

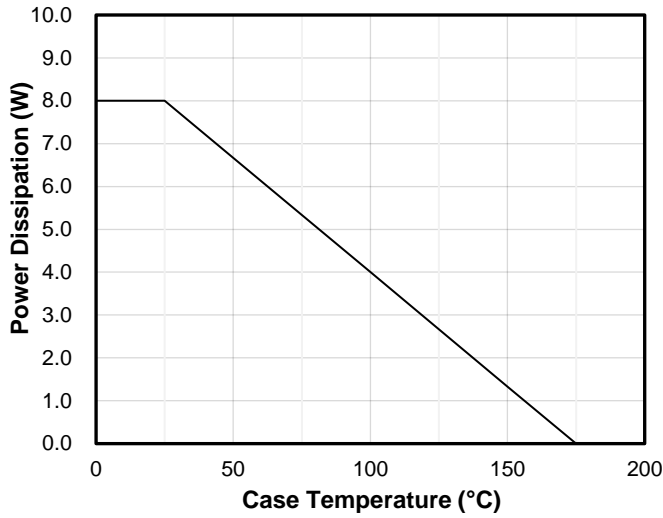
PART NUMBER		REVERSE STAND-OFF VOLTAGE VRWM(V)	BREAKDOWN VOLTAGE VBR(V) @IT		TEST CURRENT I _r (mA)	MAXIMUM CLAMPING VOLTAGE @I _{pp} V _c (V)	MAXIMUM PEAK PULSE CURRENT I _{pp} (A)	MAXIMUM REVERSE LEAKAGE @ VRWM I _R (µA)
UNI- POLAR	BI-POLAR		MIN	MAX				
ALD8S16A	ALD8S16CA	16.0	17.80	19.70	5	26.0	254.0	10
ALD8S17A	ALD8S17CA	17.0	18.90	20.90	5	27.6	239.5	10
ALD8S18A	ALD8S18CA	18.0	20.00	22.10	5	29.2	226.5	10
ALD8S20A	ALD8S20CA	20.0	22.20	24.50	5	32.4	204.0	10
ALD8S22A	ALD8S22CA	22.0	24.40	26.90	5	35.5	186.0	10
ALD8S24A	ALD8S24CA	24.0	26.70	29.50	5	38.9	170.0	10
ALD8S26A	ALD8S26CA	26.0	28.90	31.90	5	42.1	157.0	10
ALD8S28A	ALD8S28CA	28.0	31.10	34.40	5	45.4	145.5	10
ALD8S30A	ALD8S30CA	30.0	33.30	36.80	5	48.4	136.5	10
ALD8S33A	ALD8S33CA	33.0	36.70	40.6	5	53.3	124.0	10
ALD8S36A	ALD8S36CA	36.0	40.00	44.2	5	58.1	114.0	10
ALD8S40A	ALD8S40CA	40.0	44.40	49.1	5	64.5	102.5	10
ALD8S43A	ALD8S43CA	43.0	47.80	52.8	5	69.4	95.5	10

Note:

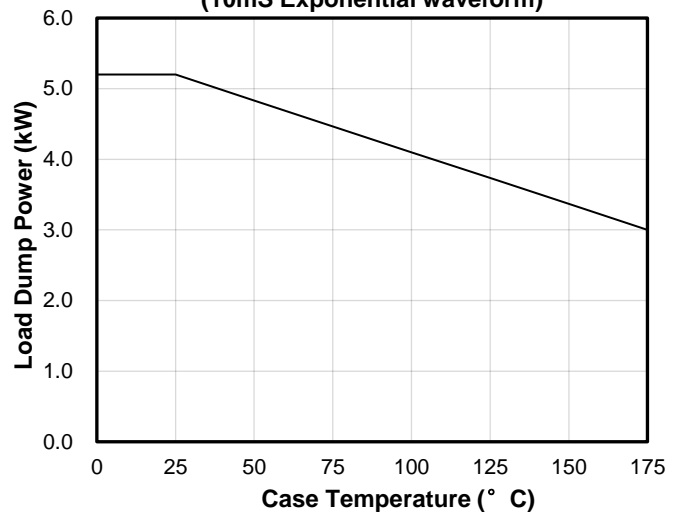
For uni-directional part, the maximum V_F = 1.8 V at I_F = 100 A measured on 8.3ms single half sine-wave or equivalent square wave, duty cycle = 4 pulses per minute maximum

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25^\circ\text{C}$ unless otherwise noted)

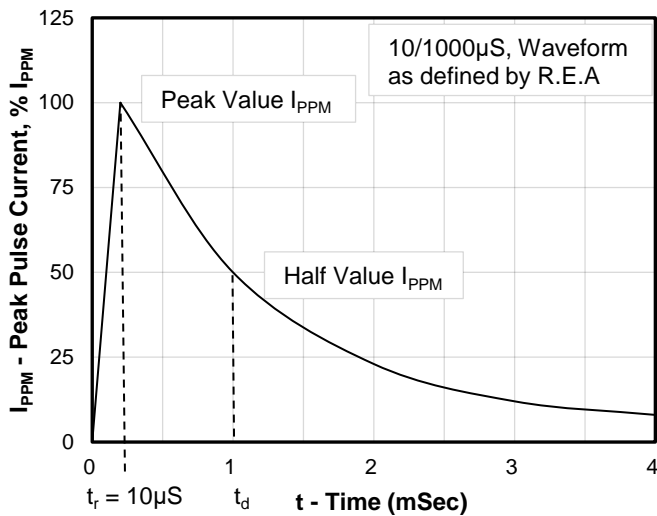
Power De-Rating Curve



Load Dump Power Characteristics
(10mS Exponential waveform)



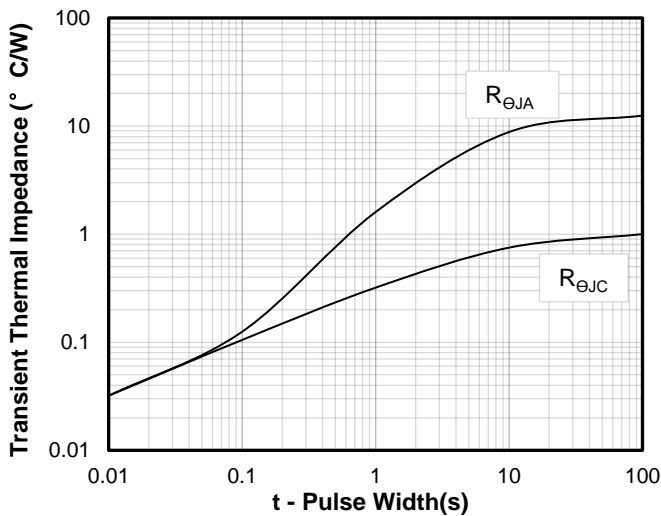
Pulse Waveform



Reverse Power Capability



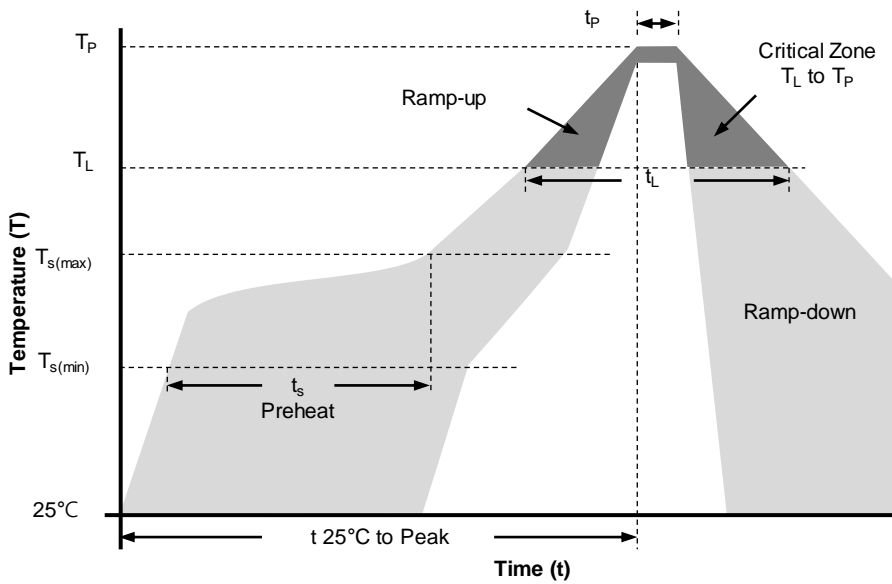
Typical Transient Thermal Impedance



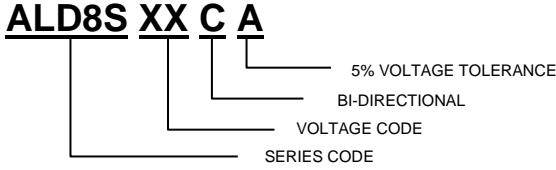
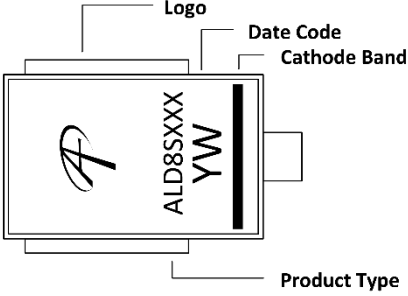
Soldering Parameters

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)	60-120 seconds
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 Min (T_L)	217°C
	Time (t_L) maintained above T_L	60-150 seconds
Peak temperature(T_P)		245 $\pm 0/-5$ °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

Soldering Profile



PART MARKING

Part Number	Part Marking
 <p>ALD8S XX C A</p> <ul style="list-style-type: none"> ALD8S: SERIES CODE XX: VOLTAGE CODE C: BI-DIRECTIONAL A: 5% VOLTAGE TOLERANCE 	 <p>Logo Date Code Cathode Band Product Type ALD8S series</p>

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