

ALS8W10A – ALS8W43A

Surface Mount Load Dump Transient Voltage Suppressors

REVERSE VOLTAGE – 10~43 Volts
PEAK PULSE POWER – 6600 Watt

FEATURES

- High current capability
- Low Forward Voltage Drop
- Low reverse current
- Low thermal resistance
- Excellent high temperature stability
- Low power loss and high efficiency
- High forward surge capability
- Meet ISO7637-2 and ISO16750-2 surge specification (varied by test condition)
- Meet MSL level 1, per J-STD-020
- LF maximum peak of 260 °C
- AEC-Q101 qualified
- PPAP capable
- Automotive grade
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**

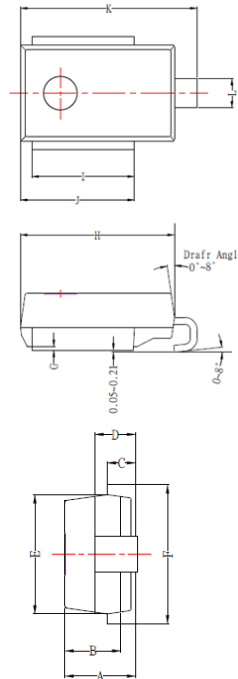
APPLICATION

- High peak power
- High-temperature
- Clamping diode
- Load switching and lighting
- Use in sensitive electronics protection against voltage transients induced by inductive automotive ECU module, especially for automotive load dump protection application

MECHANICAL DATA

- Case: DO-218 outline plastic package
- Terminals: Matte tin plated, solderable per MIL-STD-750 Method 2026, J-STD-002 and JESD 22-B10^③
- Molding Compound Flammability Rating: UL94-0
- High temperature soldering guaranteed: 260°C/10second
- Polarity: Heatsink is anode
- Corresponds to taping packages. (750PCS/Reel)
- Weight: 2.74 grams (Approximate)

DO-218



DO-218			
Dim.	Min.	TYP.	Max.
A	4.75	5.00	5.25
B	3.66	3.96	4.26
C	1.80	2.00	2.20
D	2.58	2.88	3.18
E	8.20	8.50	8.80
F	9.50	-----	10.50
G	-----	0.30	-----
H	13.20	13.50	13.80
I	8.70	9.00	9.30
J	9.70	10.00	10.25
K	15.00	15.50	16.00
L	2.30	-----	3.00

All Dimensions in millimeter

Primary Characteristics

VWM	10 V to 43 V
VBR	11.1 V to 52.8 V
PPPM (10 x 1000 uS)	6600 W
PPPM (10 x 10 000 uS)	5200 W
IFSM	700 A
Polarity	Uni-directional
Diode variation	Single

Note:

REV-8, Oct-2021, KSIB06

1. EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
2. See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Maximum Ratings (TA = 25 °C unless otherwise noted)

Parameter		Symbol	Value	Units
Peak pulse power dissipation	10/1000 μ s waveform	PPPM	6600	W
	10/10 000 μ s waveform		5200	
Peak forward surge current 8.3 ms single half sine-wave		IFSM	700	A
Operating junction and storage temperature range		TJ, TSTG	-55 to +175	°C

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Part Number	Breakdown Voltage VBR (V)		Test Current IT (mA)	Stand-OFF Voltage VWM (V)	Maximum Reverse Leakage at VWM ID (uA)	Maximum Leakage at VWM TJ = 175 °C ID (uA)	Max. Peak Pulse Current at 10/1000 us Waveform (A)	Maximum Clamping Voltage at IPPM VC (V)
	Min.	Max.						
ALS8W10A	11.1	12.3	5.0	10.0	15	250	388	17.0
ALS8W11A	12.2	13.5	5.0	11.0	10	150	363	18.2
ALS8W12A	13.3	14.7	5.0	12.0	10	150	332	19.9
ALS8W13A	14.4	15.9	5.0	13.0	10	150	307	21.5
ALS8W14A	15.6	17.2	5.0	14.0	10	150	284	23.2
ALS8W15A	16.7	18.5	5.0	15.0	10	150	270	24.4
ALS8W16A	17.8	19.7	5.0	16.0	10	150	254	26.0
ALS8W17A	18.9	20.9	5.0	17.0	10	150	239	27.6
ALS8W18A	20.0	22.1	5.0	18.0	10	150	226	29.2
ALS8W20A	22.2	24.5	5.0	20.0	10	150	204	32.4
ALS8W22A	24.4	26.9	5.0	22.0	10	150	186	35.5
ALS8W24A	26.7	29.5	5.0	24.0	10	150	170	38.9
ALS8W26A	28.9	31.9	5.0	26.0	10	150	157	42.1
ALS8W28A	31.1	34.4	5.0	28.0	10	150	145	45.4
ALS8W30A	33.3	36.8	5.0	30.0	10	150	136	48.4
ALS8W33A	36.7	40.6	5.0	33.0	10	150	124	53.3
ALS8W36A	40.0	44.2	5.0	36.0	10	150	114	58.1
ALS8W40A	44.4	49.1	5.0	40.0	10	150	102	64.5
ALS8W43A	47.8	52.8	5.0	43.0	10	150	95.1	69.4

Note:

4. For all types maximum VF = 1.8V at IF = 100A measured on 8.3ms single half sine-wave.

RATING AND CHARACTERISTIC CURVES
ALS8W10A – ALS8W43A

FIG.1- Power Derating Curve

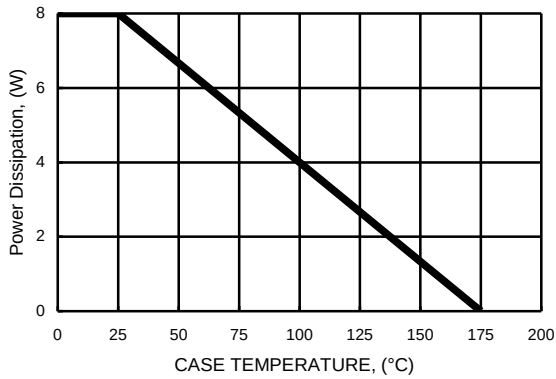


FIG.2- Load Dump Power Characteristics
(10ms Exponential Waveform)

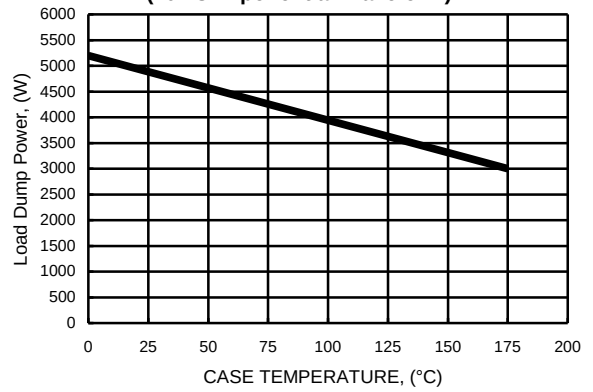


Fig.3 - Pulse Waveform

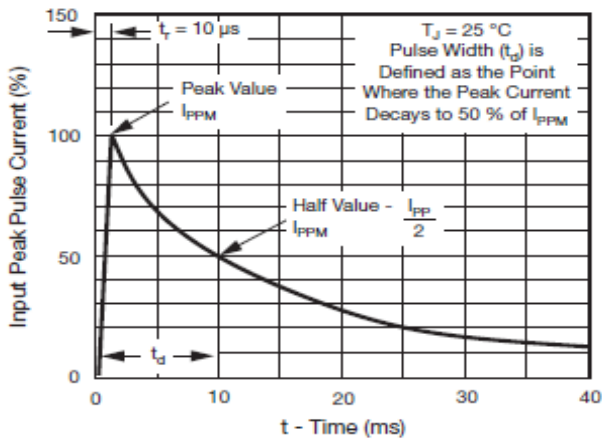


FIG.4- Reverse Power Capability

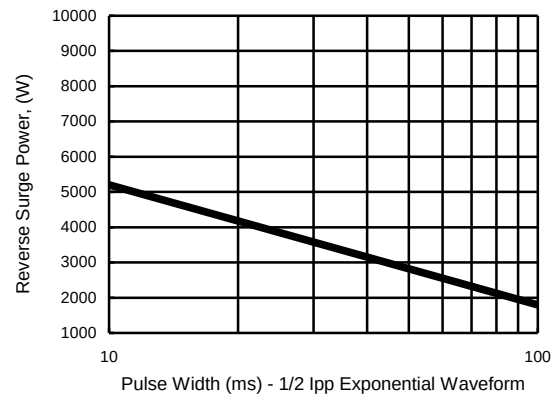


FIG.5- Typical Transient Thermal Impedance

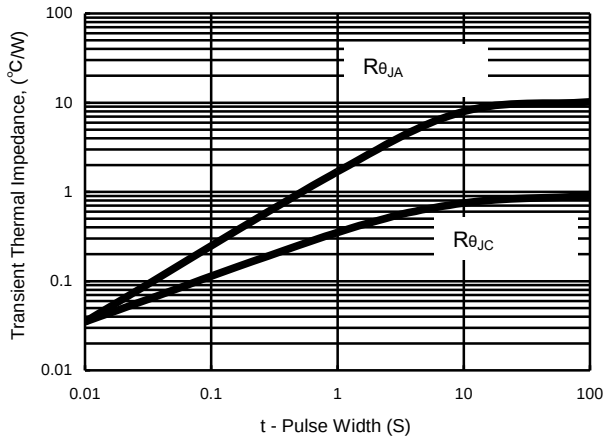
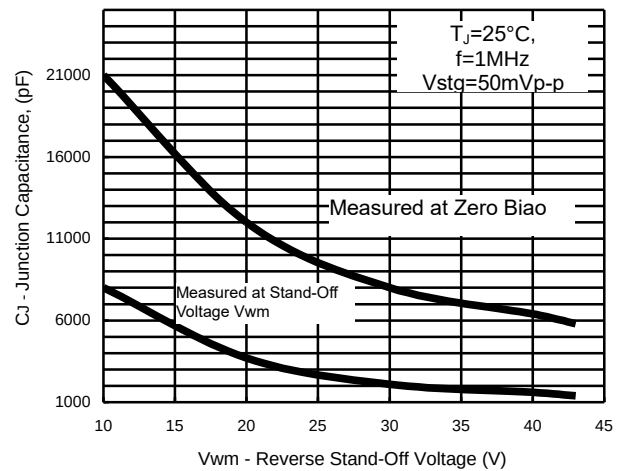


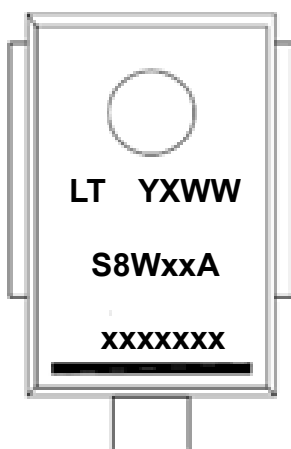
FIG.6- Typical Junction Capacitance



Ordering Information :

Part Number	Case	Packaging
ALS8WxxA	DO-218	750pcs/Reel

Marking Information :

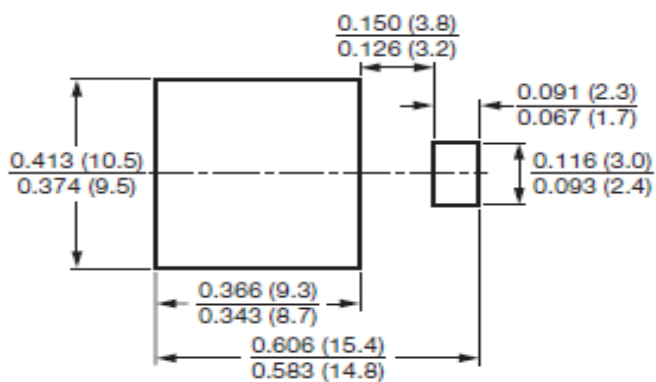


LT = Manufacturer's Code Marking
 S8WxxA = Product Type Marking Code
 YXWW = Date Code Marking
 Y = Last Digit of Year (ex: 1 = 2021)
 X = Manufacturer's Internal Code
 WW = Week Code (01 to 53)
 xxxxxxx = Assembly Tracking Code
 Cathode Bar

Packaging Information :

DEVICE	REEL DIA.	Q'TY/REEL	REEL/BOX	Q'TY/BOX	BOX/CARTON	Q'TY/CARTON	BOX SIZE	CARTON SIZE
	(INCH)	(PCS)	(REEL)	(PCS)	(BOX)	(PCS)	(mm)	(mm)
ALS8WxxA	13	750	1	750	4	3000	360*340*52	382*360*240

Soldering Pad Layout :



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