A Product Line of Diodes Incorporated | LITE-ON SEMICONDUCTOR

ALS6W10A – ALS6W43A

Surface Mount Load Dump Transient Voltage Suppressors

REVERSE VOLTAGE – 10~43 Volts
PEAK PULSE POWER – 4600 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)**

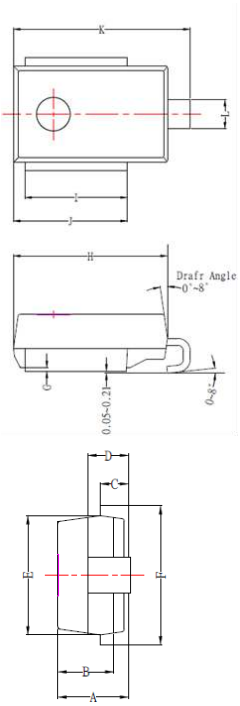
APPLICATION

- 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-B102 e3
- 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)	4600 W
PPPM (10 x 10 000 uS)	3600 W
IFSM	600 A
Polarity	Uni-directional
Diode variation	Single

Note:

REV-4, Octo-2021, KSIR07

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 μs waveform	PPPM	4600	W
	10/10 000 μs waveform		3600	
Peak forward surge current 8.3 ms single half sine-wave		IFSM	600	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 V_{BR} (V)		Test Current I_T (mA)	Stand-OFF Voltage V_{WM} (V)	Maximum Reverse Leakage at V_{WM} I_D (uA)	Maximum Leakage at V_{WM} T_J = 175 ℃ I_D (uA)	Max. Peak Pulse Current at 10/1000 us Waveform (A)	Maximum Clamping Voltage at I_{PPM} V_C (V)
	Min.	Max.						
ALS6W10A	11.1	12.3	5.0	10.0	15	250	271	17.0
ALS6W11A	12.2	13.5	5.0	11.0	10	150	253	18.2
ALS6W12A	13.3	14.7	5.0	12.0	10	150	231	19.9
ALS6W13A	14.4	15.9	5.0	13.0	10	150	214	21.5
ALS6W14A	15.6	17.2	5.0	14.0	10	150	198	23.2
ALS6W15A	16.7	18.5	5.0	15.0	10	150	189	24.4
ALS6W16A	17.8	19.7	5.0	16.0	10	150	177	26.0
ALS6W17A	18.9	20.9	5.0	17.0	10	150	167	27.6
ALS6W18A	20.0	22.1	5.0	18.0	10	150	158	29.2
ALS6W20A	22.2	24.5	5.0	20.0	10	150	142	32.4
ALS6W22A	24.4	26.9	5.0	22.0	10	150	130	35.5
ALS6W24A	26.7	29.5	5.0	24.0	10	150	118	38.9
ALS6W26A	28.9	31.9	5.0	26.0	10	150	109	42.1
ALS6W28A	31.1	34.4	5.0	28.0	10	150	101	45.4
ALS6W30A	33.3	36.8	5.0	30.0	10	150	95	48.4
ALS6W33A	36.7	40.6	5.0	33.0	10	150	86	53.3
ALS6W36A	40.0	44.2	5.0	36.0	10	150	79	58.1
ALS6W40A	44.4	49.1	5.0	40.0	10	150	71	64.5
ALS6W43A	47.8	52.8	5.0	43.0	10	150	66	69.4

Note:

4. For all types maximum VF = 1.9V at IF = 100A measured on 8.3ms single half sine-wave.

RATING AND CHARACTERISTIC CURVES
ALS6W10A – ALS6W43A

FIG.1- Power Derating Curve

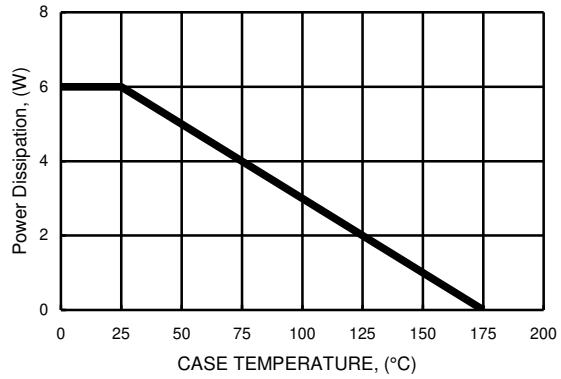


FIG.2- Load Dump Power Characteristics (10ms Exponential Waveform)

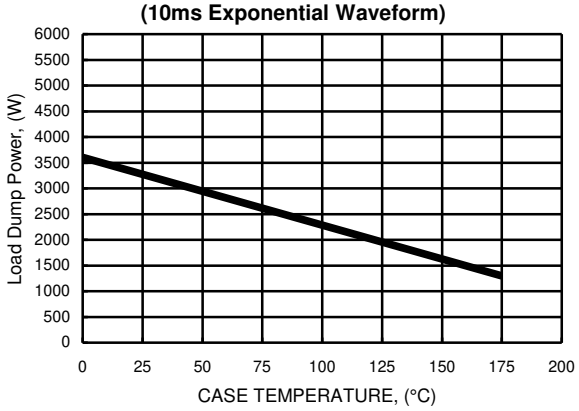


Fig.3 - Pulse Waveform

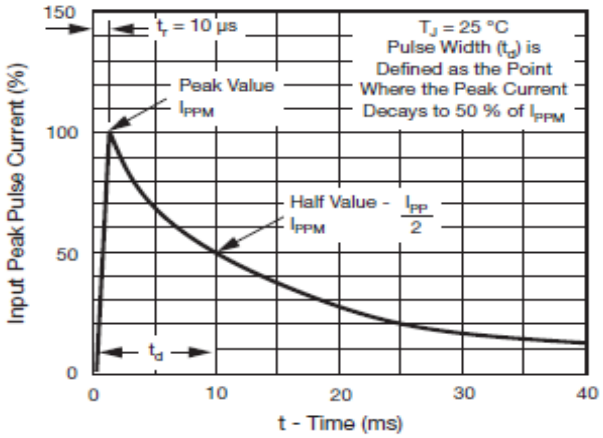


FIG.4- Reverse Power Capability

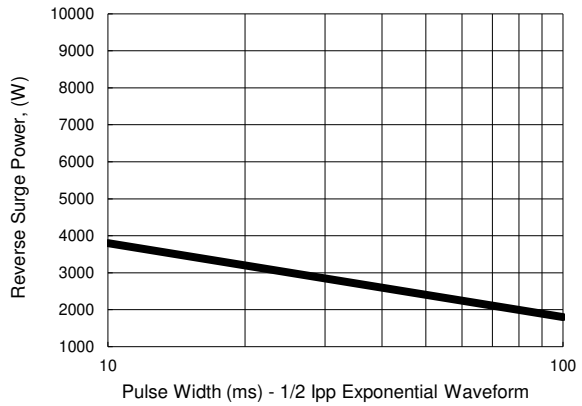


FIG.5- Typical Transient Thermal Impedance

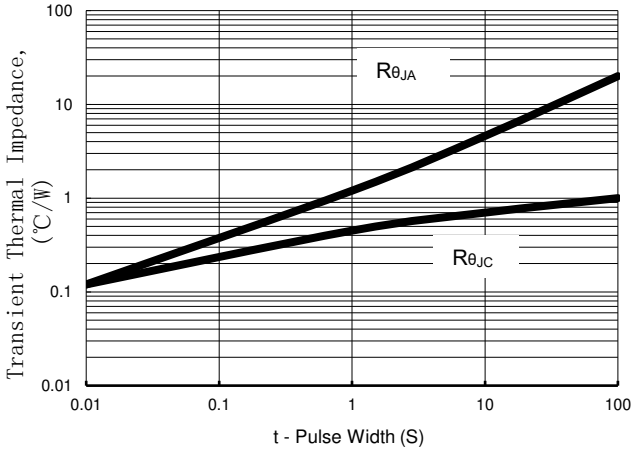
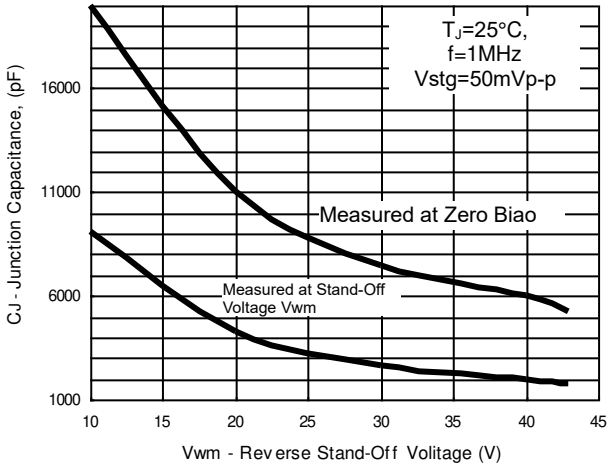


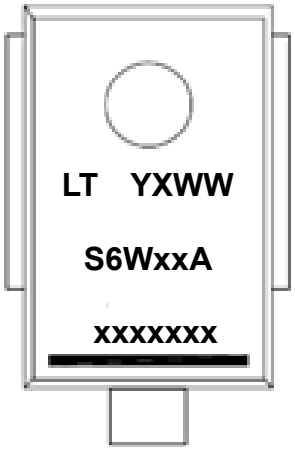
FIG.6- Typical Junction Capacitance



Ordering Information :

Part Number	Case	Packaging
ALS6WxxA	DO-218	750pcs/Reel

Marking Information :

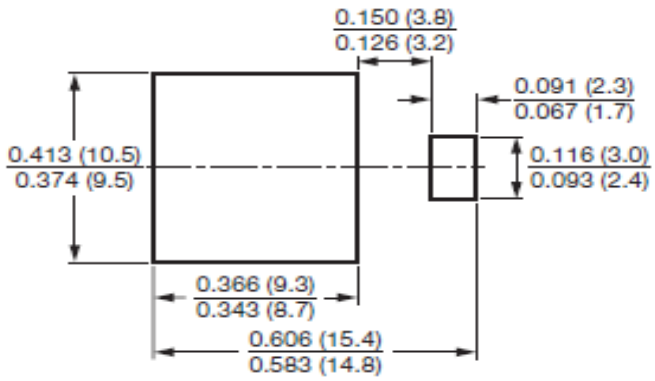


LT = Manufacturer's Code Marking
S6WxxA = Product Type Marking Code
YXWW = Date Code Marking
Y = Last Digit of Year (ex: 1 = 2021)
X = Manufacturer's Internal Code
WW = Week Code (01 to 53)
xxxxxxx = Assembly Tracking Code
Cathode Bar

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)
ALS6WxxA	13	750	1	750	4	3000	360*340*52	382*360*240

Soldering Pad Layout :



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