

Product Summary (@T_A = +25°C)

P _{PK}	I _{FSM} (A)	V _{RWM} (V)	P _{M(AV)}
3600W	500	10 to 36	5W

Features and Benefits

- 3600W Peak Pulse Power Dissipation
- High Current Capability
- Glass Passivated Die Construction
- Low Reverse Current
- Low Thermal Resistance
- Low Power Loss And High Efficiency
- Excellent High Temperature Stability
- Meets ISO7637-2 Surge Capability
- Meets ISO16750-2 Surge Specification
- **Lead-Free Finish; RoHS Compliant (Notes 1 & 2)**
- Qualified to AEC-Q101 Standards for High Reliability
- An Automotive-Compliant Part is Available Under Separate Datasheet ([DM5W10AQ-DM5W36AQ](#))

Description and Applications

Suitable to protect sensitive automotive circuits against surges defined in ISO7637-2 and against load dump surge according to ISO16750-2.

Compliance with following standards:

- ISO 10605, Pulse A and Pulse B
- ISO 7637-2 (Note 4)

Pulse 1, Pulse 2a, Pulse 3a, Pulse 3b

Mechanical Data

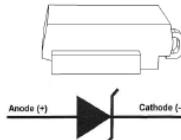
- Case: DO-218 (Type E)
- Case Material: Molded Plastic.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Lead-Free Plating (Matte Tin Finish).
- Solderable per MIL-STD-202, Method 208③
- Polarity Indicator: Heatsink is Anode
- Weight: 2.74 grams (Approximate)

DO-218 (Type E)



Top View

Polarity: Heatsink is anode



Pin Information

Ordering Information (Note 3)

Part Number	Qualification	Case	Packaging
DM5WxxA-13	AEC-Q101	DO-218 (Type E)	750/Tape & Reel

*x = Device Voltage, e.g., DM5W10A-13

Notes:

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. For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.
4. Not applicable to parts with stand-off voltage lower than the average battery voltage (13.5V).

Marking Information



M5WxxA = Product Type Marking Code (i.e. M5W10A for DM5W10A-13)

xx = Manufacturers' Code Marking

YWW = Date Code Marking

Y = Last Digit of Year (ex: 8 for 2018)

WW = Week Code (01 to 53)

Bar Denotes Cathode Pin, Circle Denotes Anode

Maximum Ratings (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Characteristic	Symbol	Value	Unit
Peak Pulse Power Dissipation (Non Repetitive Current Pulse Derated above $T_A = +25^\circ\text{C}$) (Note 5)	P_{PK}	3600	W
10/1000 μs Waveform		2800	
Peak Forward Surge Current, 8.3ms Single Half Sine-Wave Superimposed on Rated Load (Notes 5 & 6)	I_{FSM}	500	A
Steady State Power Dissipation @ $T_C = +25^\circ\text{C}$	$P_{M(AV)}$	5.0	W

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.1	°C/W
Operating Temperature Range	T_J	-55 to +175	°C
Storage Temperature Range	T_{STG}	-55 to +175	°C

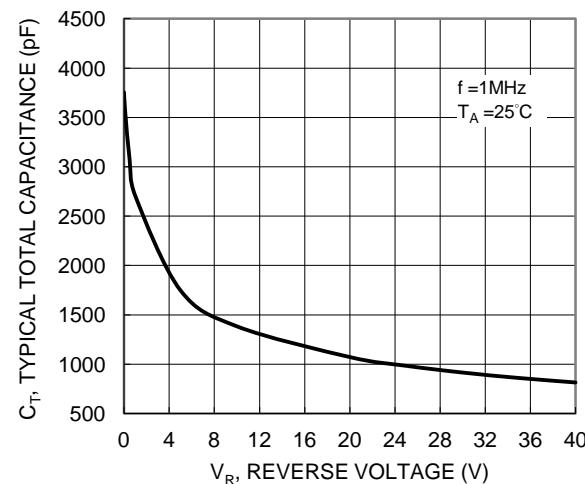
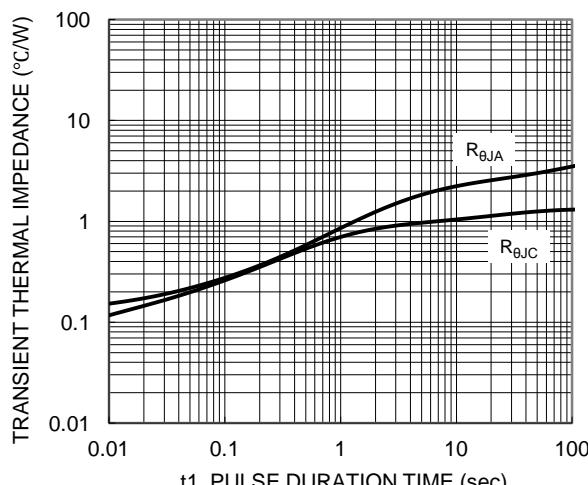
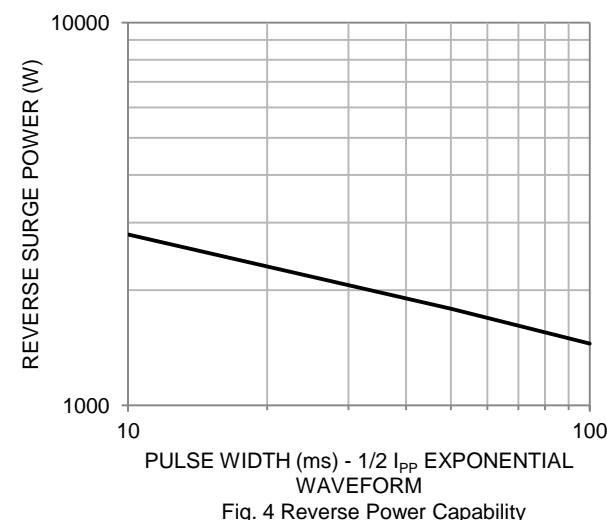
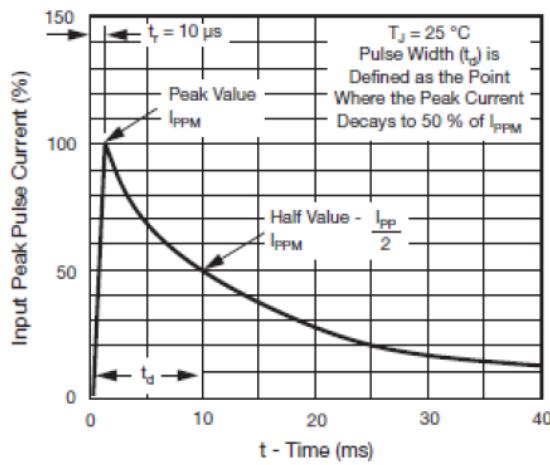
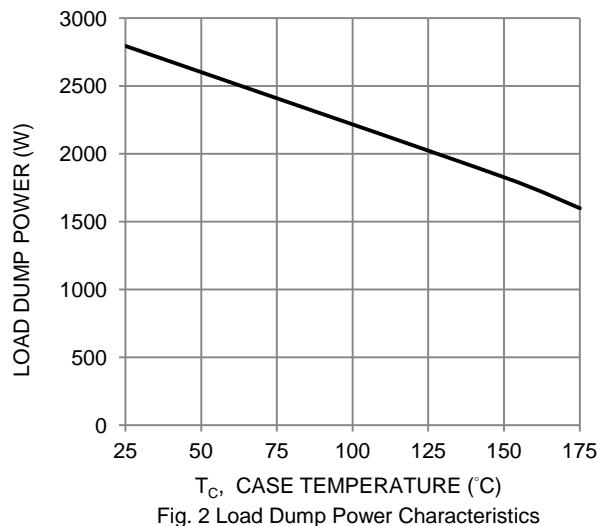
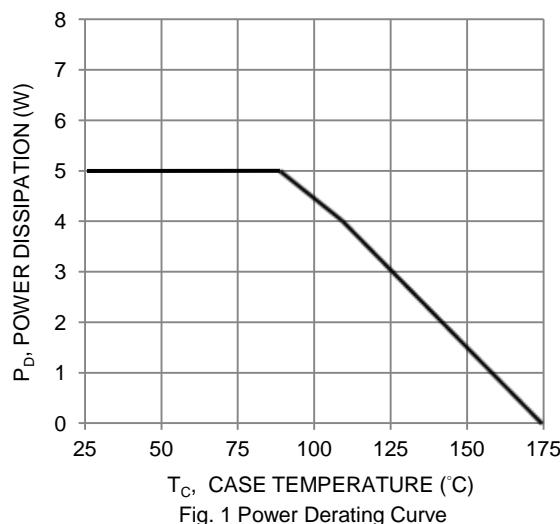
Notes: 5. Valid provided that terminals are kept at ambient temperature.
6. Measured on 8.3ms single half sine-wave or equivalent square wave. Duty cycle = 4 pulses per minute maximum.

Electrical Characteristics (@ $T_A = +25^\circ\text{C}$, unless otherwise specified.)

Part Number	Reverse Standoff Voltage	Breakdown Voltage V_{BR} @ I_T (Note 7)		Test Current	Max. Reverse Leakage @ V_{RWM}	Max. Clamping Voltage @ I_{pp}	Max. Peak Pulse Current I_{pp} at 10/1000 μs (Note 8)	Maximum Leakage at V_{WM} $T_J = +175^\circ\text{C}$
	V_{RWM} (V)	Min (V)	Max (V)					
DM5W10A	10	11.1	12.3	5	15	17.0	211	250
DM5W11A	11	12.2	13.5	5	10	18.2	198	150
DM5W12A	12	13.3	14.7	5	10	19.9	181	150
DM5W13A	13	14.4	15.9	5	10	21.5	167	150
DM5W14A	14	15.6	17.2	5	10	23.2	155	150
DM5W15A	15	16.7	18.5	5	10	24.4	148	150
DM5W16A	16	17.8	19.7	5	10	26.0	138	150
DM5W17A	17	18.9	20.9	5	10	27.6	130	150
DM5W18A	18	20.0	22.1	5	10	29.2	123	150
DM5W20A	20	22.2	24.5	5	10	32.4	111	150
DM5W22A	22	24.4	26.9	5	10	35.5	101	150
DM5W24A	24	26.7	29.5	5	10	38.9	93	150
DM5W26A	26	28.9	31.9	5	10	42.1	86	150
DM5W28A	28	31.1	34.4	5	10	45.4	79	150
DM5W30A	30	33.3	36.8	5	10	48.4	74	150
DM5W33A	33	36.7	40.6	5	10	53.3	68	150
DM5W36A	36	40.0	44.2	5	10	58.1	61	150

Notes: 7. V_{BR} measured with I_T current pulse = 10ms to 15ms.

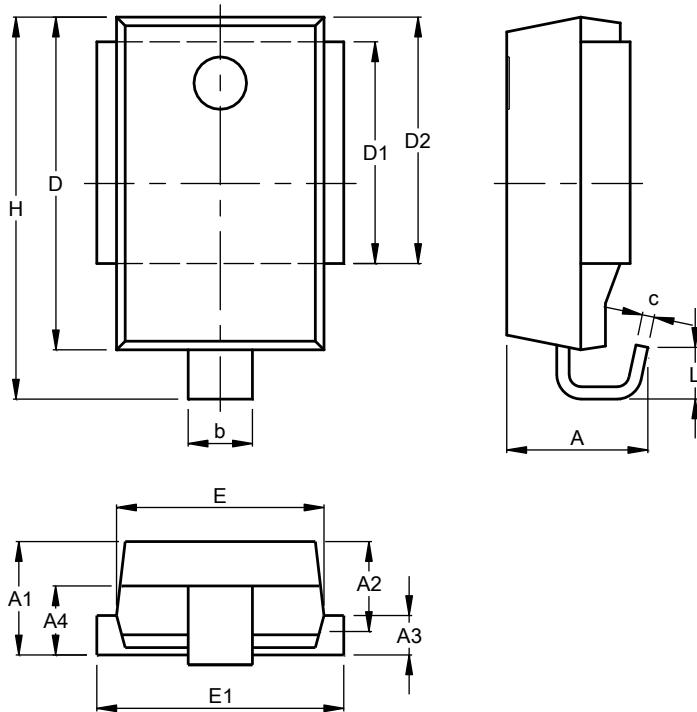
8. Refer to Figure 3 for the waveform.



Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

DO-218 (Type E)



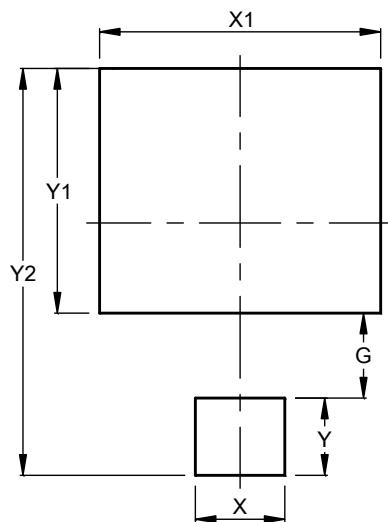
DO-218 (Type E)			
Dim	Min	Max	Typ
A	4.70	5.70	--
A1	4.70	5.25	5.00
A2	3.45	4.25	3.95
A3	1.70	2.50	2.00
A4	2.65	3.55	3.10
b	2.30	3.00	--
c	0.45	0.90	--
D	13.20	13.80	13.50
D1	8.70	9.30	9.00
D2	9.70	10.30	10.00
E	8.20	8.80	8.50
E1	9.50	10.00	--
H	15.00	16.00	15.50
L	1.50	2.50	2.00

All Dimensions in mm

Suggested Pad Layout

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

DO-218 (Type E)



Dimensions	Value (in mm)
G	3.30
X	3.50
X1	11.00
Y	3.00
Y1	9.50
Y2	15.80

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