



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

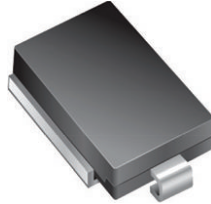
Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Surface Mount PAR[®] Transient Voltage Suppressors

High Temperature Stability and High Reliability Conditions



DO-218AB

| PRIMARY CHARACTERISTICS | |
|-------------------------------|-----------------|
| V_{BR} | 27 V |
| P_{PPM} (10 x 1000 μ s) | 6600 W |
| P_D | 8 W |
| V_{WM} | 22 V |
| I_{RSM} | 130 A |
| I_{FSM} | 700 A |
| T_J max. | 175 °C |
| Polarity | Uni-directional |
| Package | DO-218AB |

FEATURES

- Junction passivation optimized design passivated anisotropic rectifier technology
- $T_J = 175$ °C capability suitable for high reliability and automotive requirement
- Low leakage current
- Low forward voltage drop
- High surge capability
- Meets ISO7637-2 surge specification
- Meets MSL level 1, per J-STD-020, LF maximum peak of 245 °C
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-218AB

Molding compound meets UL 94 V-0 flammability rating
Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Heatsink is anode

| MAXIMUM RATINGS ($T_C = 25$ °C unless otherwise noted) | | | |
|--|----------------|-------------|------|
| PARAMETER | SYMBOL | VALUE | UNIT |
| Peak pulse power dissipation with 10/1000 μ s waveform | P_{PPM} | 6600 | W |
| Power dissipation on infinite heatsink at $T_C = 25$ °C (fig. 1) | P_D | 8.0 | W |
| Non-repetitive peak reverse surge current for 10 μ s/10 ms exponentially decaying waveform | I_{RSM} | 130 | A |
| Maximum working stand-off voltage | V_{WM} | 22.0 | V |
| Peak forward surge current 8.3 ms single half sine-wave | I_{FSM} | 700 | A |
| Operating junction and storage temperature range | T_J, T_{STG} | -55 to +175 | °C |

| ELECTRICAL CHARACTERISTICS ($T_A = 25$ °C unless otherwise noted) | | | | |
|--|---|------|-------------------------------|--------------------------------------|
| DEVICE TYPE | BREAKDOWN VOLTAGE V_{BR} AT I_T (V) | | TEST CURRENT I_T (mA) | STAND-OFF VOLTAGE V_{WM} (V) |
| | MIN. | MAX. | | |
| SM8A27 | 24 | 30 | 10 | 22 |



| ADDITIONAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted) | | | | | | |
|--|------------------------|--------------------|------------------------|------|------|-------|
| PARAMETER | TEST CONDITIONS | SYMBOL | MIN. | TYP. | MAX. | UNIT |
| Zener voltage temperature coefficient | I _Z = 10 mA | V _{ZTC} | - | - | 36 | mV/°C |
| Clamping voltage for 10 μs/10 ms exponentially decaying waveform | I _{PP} = 75 A | V _C | - | - | 40.0 | V |
| Instantaneous forward voltage | I _F = 6.0 A | V _F (1) | - | - | 0.98 | V |
| | I _F = 100 A | | - | 0.93 | - | |
| Reverse leakage current | Rated V _{WM} | I _R | - | - | 1.0 | μA |
| | | | T _J = 25 °C | - | - | |
| | | | - | - | | |

Note

(1) Measured on a 300 μs square pulse width

| THERMAL CHARACTERISTICS (T _C = 25 °C unless otherwise noted) | | | |
|---|------------------|-------|------|
| PARAMETER | SYMBOL | VALUE | UNIT |
| Typical thermal resistance, junction to case | R _{θJC} | 0.90 | °C/W |

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|------------------------|---------------|---|
| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| SM8A27HE3/2D (1) | 2.605 | 2D | 750 | 13" diameter plastic tape and reel, anode towards the sprocket hole |

Note

(1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

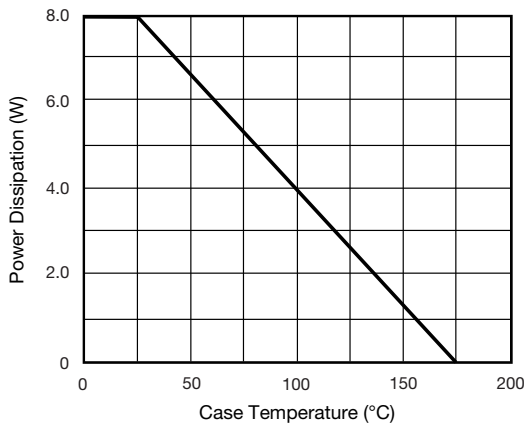


Fig. 1 - Power Derating Curve

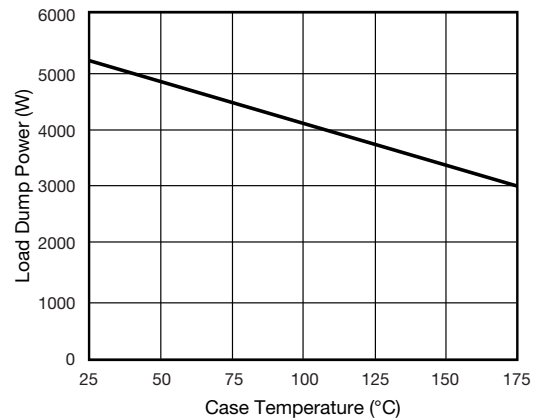


Fig. 2 - Load Dump Power Characteristics (10 ms Exponential Waveform)

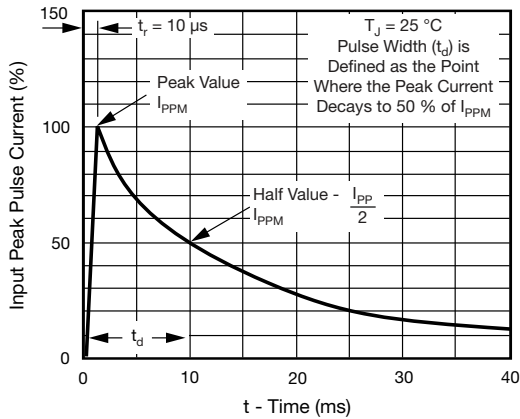


Fig. 3 - Pulse Waveform

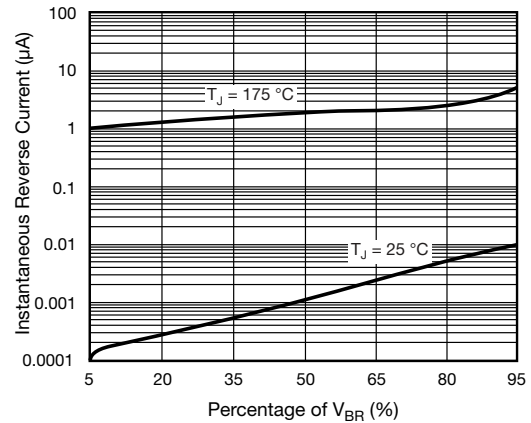


Fig. 6 - Typical Reverse Characteristics

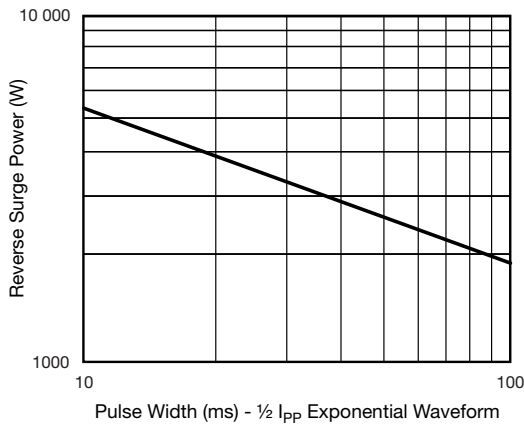


Fig. 4 - Reverse Power Capability

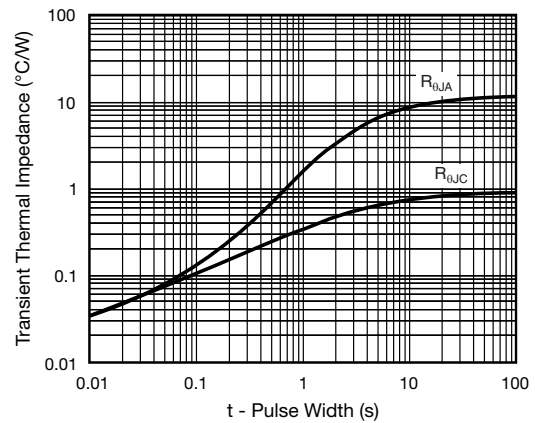


Fig. 7 - Typical Transient Thermal Impedance

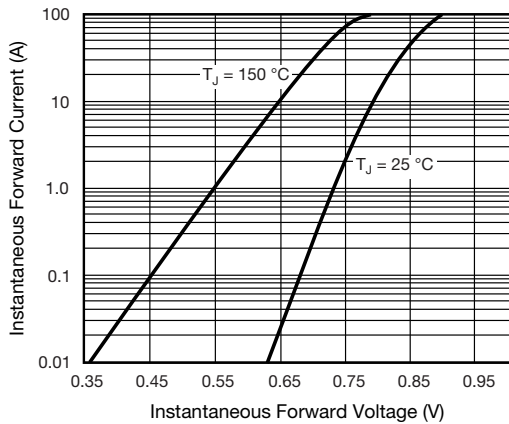
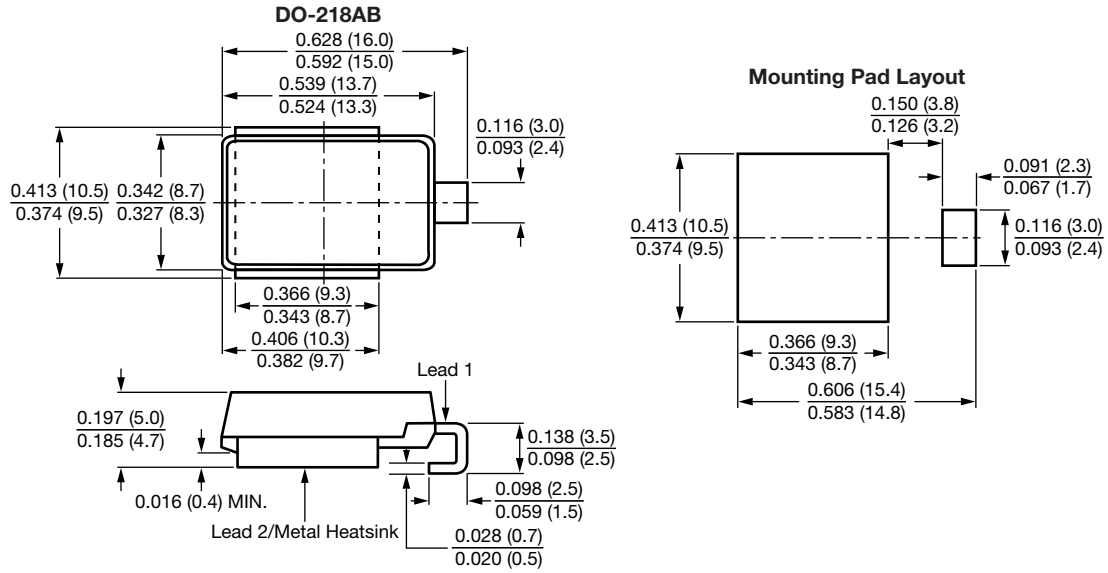


Fig. 5 - Typical Instantaneous Forward Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.