Technical Data
Data Sheet N1702, Rev. B

SM5S22 TRANSIENT VOLTAGE SUPPRESSOR

DO-218AB

Mechanical Data

- Case: DO-218AB
- Molding compound meets UL 94 V-0 flammability rating Base P/NHE3 - RoHS compliant, high reliability/ automotive grade (AEC Q101 qualified)
- Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
- Polarity: Heatsink is anode

Circuit Diagram

Features

- Low leakage current
- Low forward voltage drop
- High surge capability
- Base plate is cathode
- This is a Pb − Free Device
- Additional testing can be offered upon request

Maximum Ratings and Thermal Characteristics@T_A=25°C unless otherwise specified

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation at T_A=25°C by 10x1000μs Waveform	P_{PPM}	3600	W
Power dissipation on infinite heatsink at TC = 25°C (fig. 1)	P_D	5.0	W
Maximum working stand-off voltage	V_{WM}	22	V
Peak forward surge current 8.3 ms single half sine-wave	I_{FSM}	500	A
Typical thermal resistance, junction to case	$R_{\theta JC}$	1.0	°C/W
Operating Junction and Storage Temperature Range	T_J,T_{STG}	-55 to 175	°C

Technical Data
Data Sheet N1702, Rev. B

Electrical Characteristics@T_A=25° C unless otherwise specified

DEVICE TYPE	REVERSE STAND-OFF VOLTAGE V_{RWM} (V)	BREAKDOWN VOLTAGE V_{BR} (V) MIN. @I_T	BREAKDOWN VOLTAGE V_{BR} (V) MAX. @I_T	TEST CURRENT I_T(MA)
SM5S22	22	24	30	10

PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT
Peak pulse current at 10/1000μs waveform	-	I_{PP}	-	91	A
Clamping voltage	I_{PP} = 91 A	V_C	-	39.4	V
Instantaneous forward voltage(Note 1)	I_F =100 A	V_F	-	2.0	V
Reverse leakage current	Rated V_{WM}, T_J = 25 °C	I_R	-	2	μA

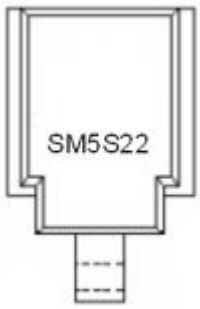
Note: 1. Measured on 8.3 ms single half sine-wave or equivalent square wave.

Ordering Information

Device	Package	Shipping
SM5S22	DO-218AB (Pb-Free)	750pcs / reel

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

Marking Diagram



SM5S22 = Part Name

Ratings and Characteristics Curves

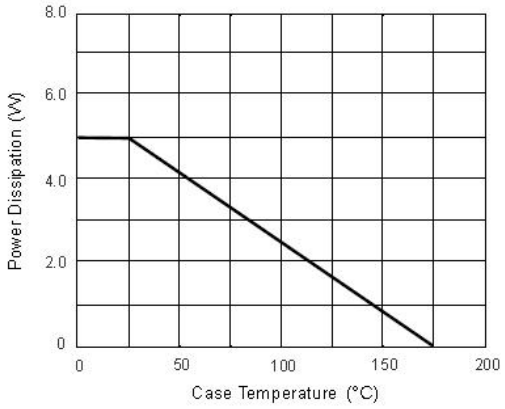


Figure 1. Power Derating Curve

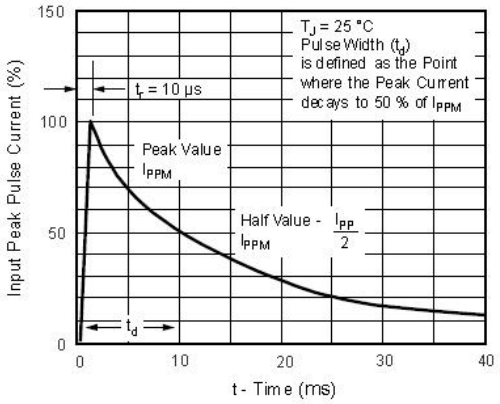


Figure 3. Pulse Waveform

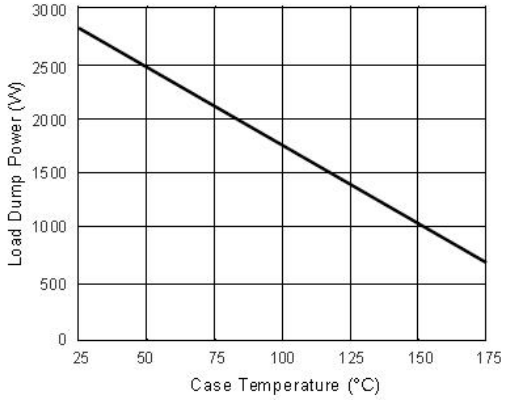


Figure 2. Load Dump Power Characteristics
(10 ms Exponential Waveform)

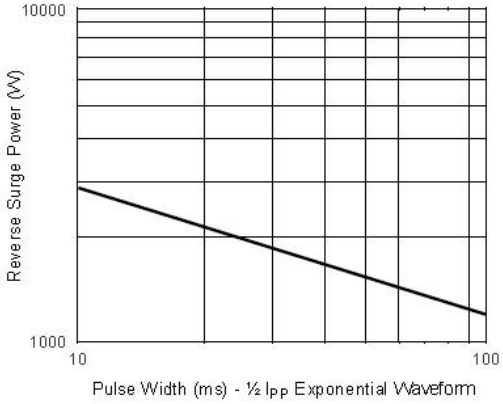


Figure 4. Reverse Power Capability

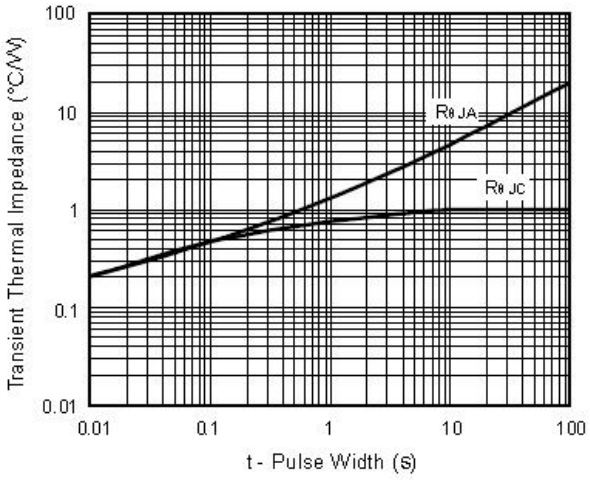
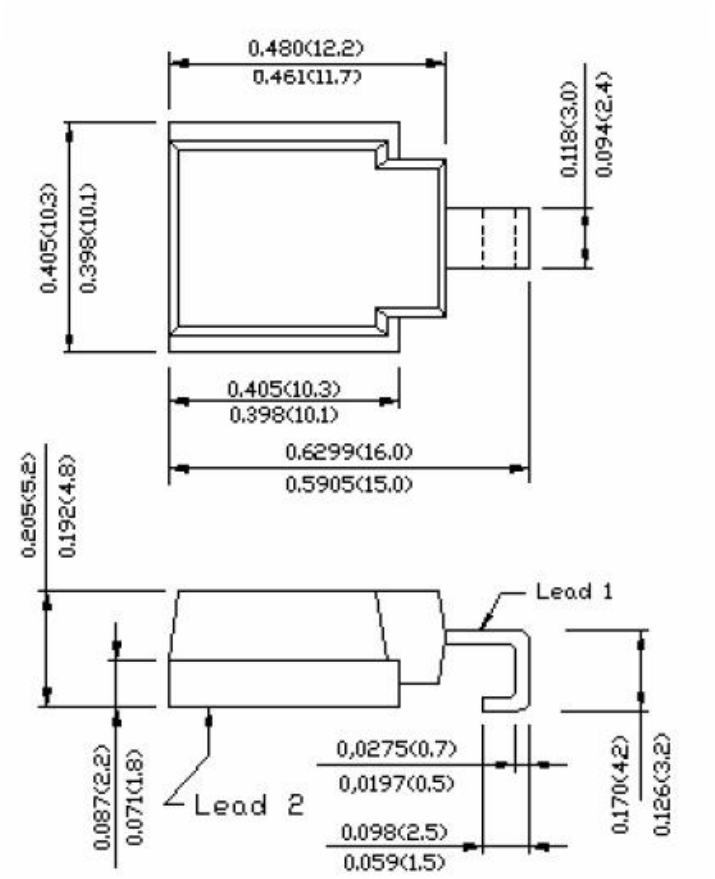


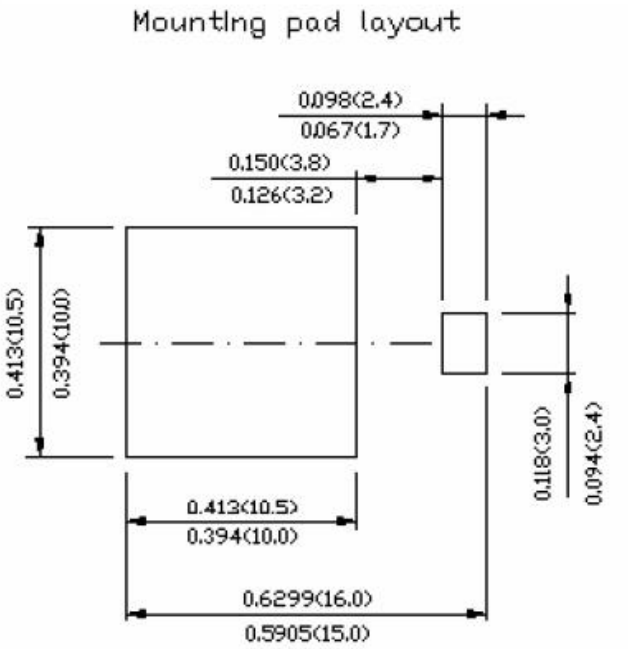
Figure 5. Typical Transient Thermal Impedance

Technical Data
Data Sheet N1702, Rev. B

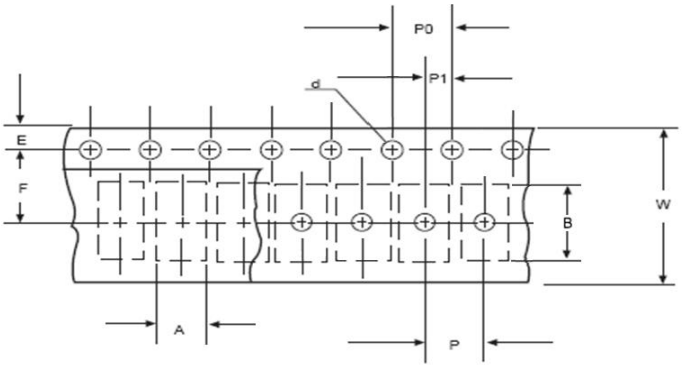
RoHS

Mechanical Dimensions DO-218AB(Inches/Millimeters)





Carrier Tape Specification DO-218AB



SYMBOL	Millimeters	
	Min.	Max.
A	10.5	11.5
B	16.5	17.5
d	1.4	1.6
E	1.40	1.60
F	5.60	5.70
P	3.90	4.10
P0	3.90	4.10
P1	1.90	2.10
W	23.5	24.5

Technical Data
Data Sheet N1702, Rev. B

DISCLAIMER:
1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the SMC Diode Solutions sales department for the latest version of the datasheet(s).
2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment , and safety equipment) , safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement .
3- In no event shall SMC Diode Solutions be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). SMC Diode Solution assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
4- In no event shall SMC Diode Solutions be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
5- No license is granted by the datasheet(s) under any patents or other rights of any third party or SMC Diode Solutions.
6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of SMC Diode Solutions.
7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations..