

MSKSEMI

SEMICONDUCTOR



ESD



TVS



TSS



MOV

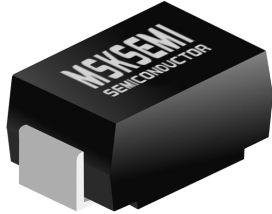


GDT



PLED

Product data sheet



SMB

Features

- Glass Passivated Die Construction
- Uni- and Bi-Directional Versions Available
- Excellent Clamping Capability
- Fast Response Time
- Plastic Material: UL Flammability Classification Rating 94V-0

Mechanical Data

- Case: SMB/DO-214AA, Molded Plastic
- Terminals: Solder Plated, Solderable per MIL-STD-750, Method 2026
- Polarity: Cathode Band or Cathode Notch
- Marking: Type Number
- Weight: 0.093 grams (approx.)

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 1)	P_{PK}	600	W
Peak Forward Surge Current, 8.3ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method) (Notes 1, 2, & 3)	I_{FSM}	100	A
Instantaneous Forward Voltage @ $I_{PP} = 35\text{A}$ (Notes 1, 2, & 3)	V_F	$V_{BR} < 100\text{V}$ 3.5 $V_{BR} \geq 100\text{V}$ 5.0	V V
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +150	$^\circ\text{C}$

- Notes:
1. Valid provided that terminals are kept at ambient temperature.
 2. Measured with 8.3ms single half sine-wave. Duty cycle = 4 pulses per minute maximum.
 3. Unidirectional units only.

P/N		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @ I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}
(Uni)	(Bi)	V _{RWM} (V)	V _{BR MIN} (V)	V _{BR MAX} (V)	I _T (mA)	V _c (V)	I _{PP} (A)	I _R (uA)
SMBJ5.0A	SMBJ5.0CA	5.0	6.40	7.25	10	9.2	65.2	800.0
SMBJ6.0A	SMBJ6.0CA	6.0	6.67	7.67	10	10.3	58.3	800.0
SMBJ6.5A	SMBJ6.5CA	6.5	7.22	8.30	10	11.2	53.6	500.0
SMBJ7.0A	SMBJ7.0CA	7.0	7.78	8.95	10	12.0	50.0	200.0
SMBJ7.5A	SMBJ7.5CA	7.5	8.33	9.58	1.0	12.9	46.5	100.0
SMBJ8.0A	SMBJ8.0CA	8.0	8.89	10.23	1.0	13.6	44.1	50.0
SMBJ8.5A	SMBJ8.5CA	8.5	9.44	10.82	1.0	14.4	41.7	20.0
SMBJ9.0A	SMBJ9.0CA	9.0	10.0	11.5	1.0	15.4	39.0	10.0
SMBJ10A	SMBJ10CA	10	11.1	12.8	1.0	17.0	35.3	5.0
SMBJ11A	SMBJ11CA	11	12.2	14.0	1.0	18.2	33.0	5.0
SMBJ12A	SMBJ12CA	12	13.3	15.3	1.0	19.9	30.2	5.0
SMBJ13A	SMBJ13CA	13	14.4	16.5	1.0	21.5	27.9	5.0
SMBJ14A	SMBJ14CA	14	15.6	17.9	1.0	23.2	25.9	5.0
SMBJ15A	SMBJ15CA	15	16.7	19.2	1.0	24.4	24.6	5.0
SMBJ16A	SMBJ16CA	16	17.8	20.5	1.0	26.0	23.1	5.0
SMBJ17A	SMBJ17CA	17	18.9	21.7	1.0	27.6	21.7	5.0
SMBJ18A	SMBJ18CA	18	20.0	23.3	1.0	29.2	20.5	5.0
SMBJ20A	SMBJ20CA	20	22.2	25.5	1.0	32.4	18.5	5.0
SMBJ22A	SMBJ22CA	22	24.4	28.0	1.0	35.5	16.9	5.0
SMBJ24A	SMBJ24CA	24	26.7	30.7	1.0	38.9	15.4	5.0
SMBJ26A	SMBJ26CA	26	28.9	33.2	1.0	42.1	14.3	5.0
SMBJ28A	SMBJ28CA	28	31.1	35.8	1.0	45.4	13.2	5.0
SMBJ30A	SMBJ30CA	30	33.3	38.3	1.0	48.4	12.4	5.0
SMBJ33A	SMBJ33CA	33	36.7	42.2	1.0	53.3	11.3	5.0
SMBJ36A	SMBJ36CA	36	40.0	46.0	1.0	58.1	10.3	5.0
SMBJ40A	SMBJ40CA	40	44.4	51.1	1.0	64.5	9.3	5.0
SMBJ43A	SMBJ43CA	43	47.8	54.9	1.0	69.4	8.6	5.0
SMBJ45A	SMBJ45CA	45	50.0	57.5	1.0	72.7	8.3	5.0
SMBJ48A	SMBJ48CA	48	53.3	61.3	1.0	77.4	7.8	5.0
SMBJ51A	SMBJ51CA	51	56.7	65.2	1.0	82.4	7.3	5.0
SMBJ54A	SMBJ54CA	54	60.0	69.0	1.0	87.1	6.9	5.0

Note:

- (1) V_{BR} measured after I_T applied for 300 μs., I_T = square wave pulse or equivalent.
- (2) Surge Current Waveform per Figure 5 and Derate per Figure 1
- (3) A Transient suppressor is normally selected according to the reverse " Stand-off Voltage " (V_{WM}) which should be equal to or greater then the D.C. or continuous peak operating voltage level.

P/N		Reverse Stand-Off Voltage	Breakdown Voltage Min. @I _T	Breakdown Voltage Max. @ I _T	Test Current	Maximum Clamping Voltage @I _{PP}	Peak Pulse Current	Reverse Leakage @V _{RWM}
(Uni)	(Bi)	V _{RWM} (V)	V _{BR MIN} (V)	V _{BR MAX} (V)	I _T (mA)	V _C (V)	I _{PP} (A)	I _R (uA)
SMBJ58A	SMBJ58CA	58	64.4	74.1	1.0	93.6	6.4	5.0
SMBJ60A	SMBJ60CA	60	66.7	76.7	1.0	96.8	6.2	5.0
SMBJ64A	SMBJ64CA	64	71.1	81.8	1.0	103	5.8	5.0
SMBJ70A	SMBJ70CA	70	77.8	89.5	1.0	113	5.3	5.0
SMBJ75A	SMBJ75CA	75	83.0	95.8	1.0	121	5.0	5.0
SMBJ78A	SMBJ78CA	78	86.0	99.7	1.0	126	4.8	5.0
SMBJ85A	SMBJ85CA	85	94.0	108.2	1.0	137	4.4	5.0
SMBJ90A	SMBJ90CA	90	100	115.5	1.0	146	4.1	5.0
SMBJ100A	SMBJ100CA	100	111	128.0	1.0	162	3.7	5.0
SMBJ110A	SMBJ110CA	110	122	140.5	1.0	177	3.4	5.0
SMBJ120A	SMBJ120CA	120	133	153.0	1.0	193	3.1	5.0
SMBJ130A	SMBJ130CA	130	144	165.5	1.0	209	2.9	5.0
SMBJ150A	SMBJ150CA	150	167	192.5	1.0	243	2.5	5.0
SMBJ160A	SMBJ160CA	160	178	205.0	1.0	259	2.3	5.0
SMBJ170A	SMBJ170CA	170	189	217.5	1.0	275	2.2	5.0
SMBJ180A	SMBJ180CA	180	200	230.4	1.0	290	2.1	5.0
SMBJ190A	SMBJ190CA	190	211	243.2	1.0	306	2.0	5.0
SMBJ200A	SMBJ200CA	200	222	256.0	1.0	322	1.9	5.0
SMBJ210A	SMBJ210CA	210	233	268.8	1.0	339	1.8	5.0
SMBJ220A	SMBJ220CA	220	244	281.6	1.0	355	1.7	5.0
SMBJ250A	SMBJ250CA	250	278	309.0	1.0	403	1.5	5.0
SMBJ300A	SMBJ300CA	300	333	371.0	1.0	484	1.2	5.0
SMBJ350A	SMBJ350CA	350	389	432.0	1.0	565	1.1	5.0
SMBJ400A	SMBJ400CA	400	444	494.0	1.0	645	0.9	5.0
SMBJ440A	SMBJ440CA	440	489	543.0	1.0	710	0.8	5.0

Note:

- (1) V_{BR} measured after I_T applied for 300 μs., I_T = square wave pulse or equivalent.
- (2) Surge Current Waveform per Figure 5 and Derate per Figure 1
- (3) A Transient suppressor is normally selected according to the reverse " Stand-off Voltage " (V_{WM}) which should be equal to or greater then the D.C. or continuous peak operating voltage level.

Ratings and Characteristic Curves $T_A = 25^\circ\text{C}$ unless otherwise noted

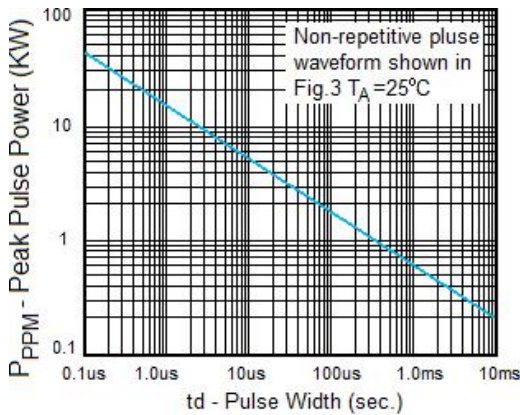


Fig. 1 Peak Pulse Power Rating

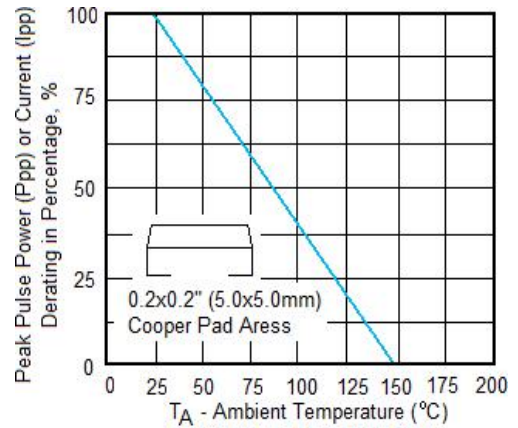


Fig. 2 Pulse Derating Curve

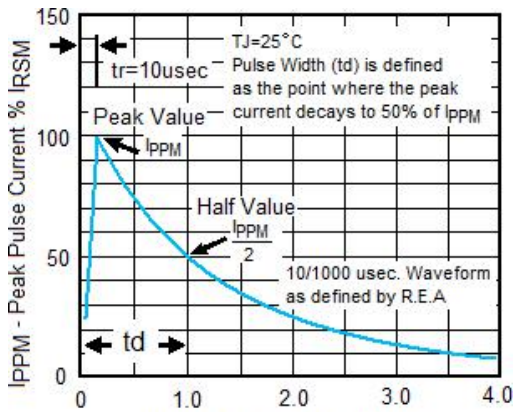


Fig. 3 Pulse Waveform

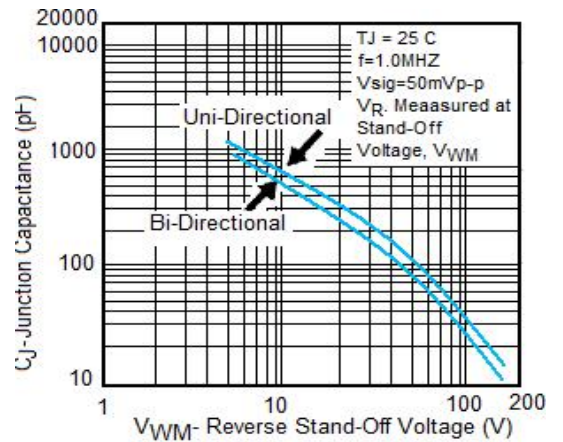
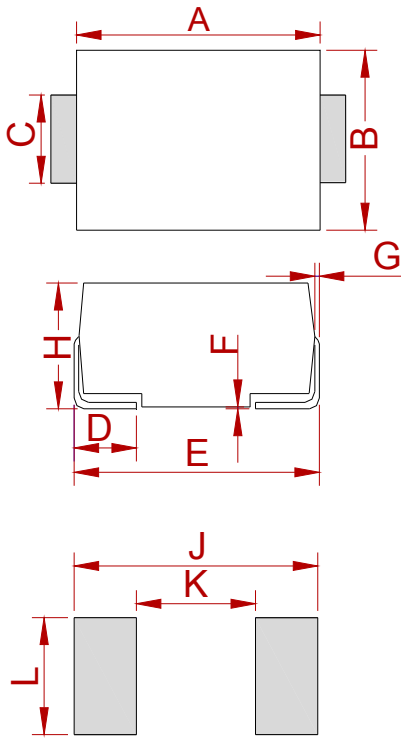


Fig. 4- Typical Junction Capacitance

PACKAGE MECHANICAL DATA



DO-214AA (SMB)

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.25	4.75	0.167	0.187
B	3.30	3.94	0.130	0.155
C	1.85	2.21	0.073	0.087
D	0.76	1.52	0.030	0.060
E	5.08	5.59	0.200	0.220
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.11	2.44	0.083	0.096
J	6.80		0.270	
K		2.60		0.100
L	2.40		0.090	

Attention

- Any and all MSKSEMI Semiconductor products described or contained herein do not have specifications that can handle applications that require extremely high levels of reliability, such as life-support systems, aircraft's control systems, or other applications whose failure can be reasonably expected to result in serious physical and/or material damage. Consult with your MSKSEMI Semiconductor representative nearest you before using any MSKSEMI Semiconductor products described or contained herein in such applications.
- MSKSEMI Semiconductor assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all MSKSEMI Semiconductor products described or contained herein.
- Specifications of any and all MSKSEMI Semiconductor products described or contained herein stipulate the performance, characteristics, and functions of the described products in the independent state, and are not guarantees of the performance, characteristics, and functions of the described products as mounted in the customer's products or equipment. To verify symptoms and states that cannot be evaluated in an independent device, the customer should always evaluate and test devices mounted in the customer's products or equipment.
- MSKSEMI Semiconductor strives to supply high-quality high-reliability products. However, any and all semiconductor products fail with some probability. It is possible that these probabilistic failures could give rise to accidents or events that could endanger human lives, that could give rise to smoke or fire, or that could cause damage to other property. When designing equipment, adopt safety measures so that these kinds of accidents or events cannot occur. Such measures include but are not limited to protective circuits and error prevention circuits for safe design, redundant design, and structural design.
- In the event that any or all MSKSEMI Semiconductor products (including technical data, services) described or contained herein are controlled under any of applicable local export control laws and regulations, such products must not be exported without obtaining the export license from the authorities concerned in accordance with the above law.
- No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying and recording, or any information storage or retrieval system, or otherwise, without the prior written permission of MSKSEMI Semiconductor.
- Information (including circuit diagrams and circuit parameters) herein is for example only ; it is not guaranteed for volume production. MSKSEMI Semiconductor believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringement of intellectual property rights or other rights of third parties.
- Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the MSKSEMI Semiconductor product that you intend to use.

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [ESD Suppressors / TVS Diodes](#) category:

Click to view products by [MSKSEMI](#) manufacturer:

Other Similar products are found below :

[60KS200C](#) [D18V0L1B2LP-7B](#) [D5V0F4U5P5-7](#) [NTE4902](#) [P4KE27CA](#) [P6KE11CA](#) [P6KE39CA-TP](#) [P6KE8.2A](#) [JANTX1N6053A](#)
[SA110CA](#) [SA60CA](#) [SA64CA](#) [SMBJ12CATR](#) [SMBJ33CATR](#) [SMBJ8.0A](#) [ESD101-B1-02ELS E6327](#) [ESD105-B1-02EL E6327](#) [ESD112-B1-02EL E6327](#) [ESD119B1W01005E6327XTSA1](#) [ESD5V0L1B02VH6327XTSA1](#) [ESD7451N2T5G](#) [19180-510](#) [CPDT-5V0USP-HF](#)
[3.0SMCJ33CA-F](#) [3.0SMCJ36A-F](#) [HSPC16701B02TP](#) [JANTX1N6126A](#) [JANTX1N6462](#) [JANTX1N6465](#) [USB50805e3/TR7](#)
[D3V3Q1B2DLP3-7](#) [D55V0M1B2WS-7](#) [DRTR5V0U4SL-7](#) [SCM1293A-04SO](#) [ESD200-B1-CSP0201 E6327](#) [SM12-7](#) [SM1605E3/TR13](#)
[SMLJ45CA-TP](#) [CEN955 W/DATA](#) [82350120560](#) [VESD12A1A-HD1-GS08](#) [CPDUR5V0R-HF](#) [CPDQC5V0U-HF](#) [CPDQC5V0USP-HF](#)
[CPDQC5V0-HF](#) [D1213A-01LP4-7B](#) [ESD101-B1-02EL E6327](#) [824500181](#) [MMAD1108/TR13](#) [5KP100A](#)