THE DATASHEET OF

SMB10J33CAHR5G

1000W, 9V - 40V Surface Mount Transient Voltage Suppressor

FEATURES

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Excellent clamping capability
- Fast response time: Typically less than 1.0ps
- Meets ISO 7637-2 (Pulse 1/2a/2b/3a/3b)
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant
- Halogen-free according to IEC 61249-2-21

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
V_{WM}	9 - 40	V
V_{BR}	10.0 - 49.1	V
P_{PK}	1,000	W
$T_{J\ MAX}$	175	°C
Package	DO-214AA (SMB)	
Configuration	Single die	

Pb-Free RoHS COMPLIANT HALOGEN FREE

DO-214AA (SMB)

APPLICATIONS

- Protect sensitive circuit from damage by high voltage transients
- Lighting, ESD transient voltage protection of IC, system
- Inductive switching load protection of IC, system
- Electrical Fast Transient Immunity protection of IC, system

MECHANICAL DATA

- Case: DO-214AA (SMB)
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Polarity: As marked
- Weight: 0.110g (approximately)

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	VALUE	UNIT
Peak power dissipation at T_A = 25°C, tp = 1ms[(1)]	P_{PK}	1,000	W
Steady state power dissipation	P_D	5	W
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	100	A
Forward Voltage @ I_F = 50A for Uni-directional only	V_F	3.5	V
Junction temperature	T_J	-55 to +175	°C
Storage temperature	T_{STG}	-55 to +175	°C

Note:

1. Non-repetitive current pulse per Fig.3 and derated above T_A = 25°C per Fig.2

Devices for Bipolar Applications

1. For bidirectional use CA suffix

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\Theta JL}$	20	°C/W
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	100	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

Device		Device Marking Code		Breakdown Voltage @ I_T V_{BR} (V)		Test Current I_T (mA)	Stand-Off Voltage V_{WM} (V)	Maximum Reverse Leakage @V_{WM} I_D (μA)	Maximum Peak Pulse Current I_{PPM} (A)	Maximum clamping voltage @I_{PPM} V_C (V)
UNI	BI	UNI	BI	Min	Max					
SMB10J9.0A	SMB10J9.0CA	1KV	KVC	10.0	11.1	1	9	10	64.9	15.4
SMB10J10A	SMB10J10CA	1KX	KXC	11.1	12.3	1	10	8	58.8	17.0
SMB10J11A	SMB10J11CA	1KZ	KZC	12.2	13.5	1	11	5	54.9	18.2
SMB10J12A	SMB10J12CA	1LE	LEC	13.3	14.7	1	12	5	50.3	19.9
SMB10J13A	SMB10J13CA	1LG	LGC	14.4	15.9	1	13	5	46.5	21.5
SMB10J14A	SMB10J14CA	1LK	LKC	15.6	17.2	1	14	5	43.1	23.2
SMB10J15A	SMB10J15CA	1LM	LMC	16.7	18.5	1	15	1	41.0	24.4
SMB10J16A	SMB10J16CA	1LP	LPC	17.8	19.7	1	16	1	38.5	26.0
SMB10J17A	SMB10J17CA	1LR	LRC	18.9	20.9	1	17	1	36.2	27.6
SMB10J18A	SMB10J18CA	1LT	LTC	20.0	22.1	1	18	1	34.2	29.2
SMB10J20A	SMB10J20CA	1LV	LVC	22.2	24.5	1	20	1	30.9	32.4
SMB10J22A	SMB10J22CA	1LX	LXC	24.4	26.9	1	22	1	28.2	35.5
SMB10J24A	SMB10J24CA	1LZ	LZC	26.7	29.5	1	24	1	25.7	38.9
SMB10J26A	SMB10J26CA	1ME	MEC	28.9	31.9	1	26	1	23.8	42.1
SMB10J28A	SMB10J28CA	1MG	MGC	31.1	34.4	1	28	1	22.0	45.4
SMB10J30A	SMB10J30CA	1MK	MKC	33.3	36.8	1	30	1	20.7	48.4
SMB10J33A	SMB10J33CA	1MM	MMC	36.7	40.6	1	33	1	18.8	53.3
SMB10J36A	SMB10J36CA	1MP	MPC	40.0	44.2	1	36	1	17.2	58.1
SMB10J40A	SMB10J40CA	1MR	MRC	44.4	49.1	1	40	1	15.5	64.5

ORDERING INFORMATION

ORDERING CODE(1)	PACKAGE	PACKING
SMB10Jx	DO-214AA (SMB)	3,000 / Tape & Reel

Notes:

1. "x" defines voltage from 9V(SMB10J9.0A) to 40V(SMB10J40CA)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Peak Pulse Power Rating Curve

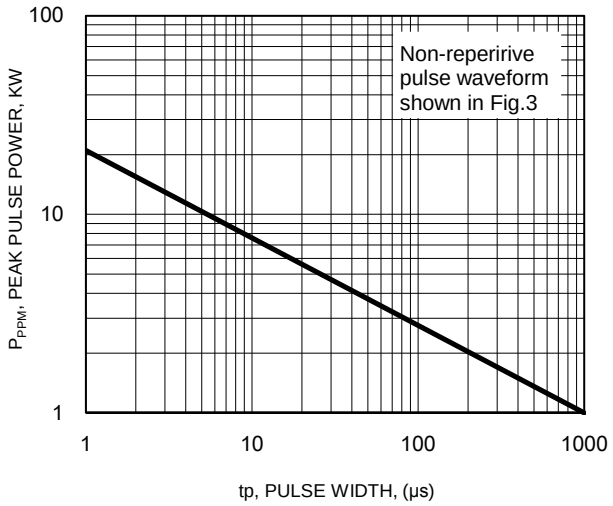


Fig.2 Pulse Derating Curve

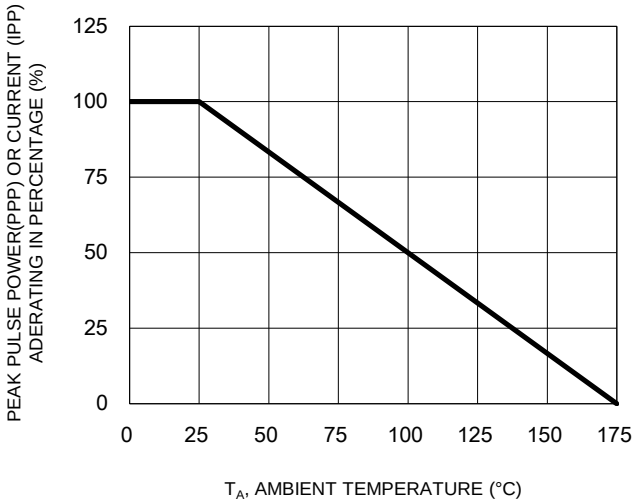


Fig.3 Clamping Power Pulse Waveform

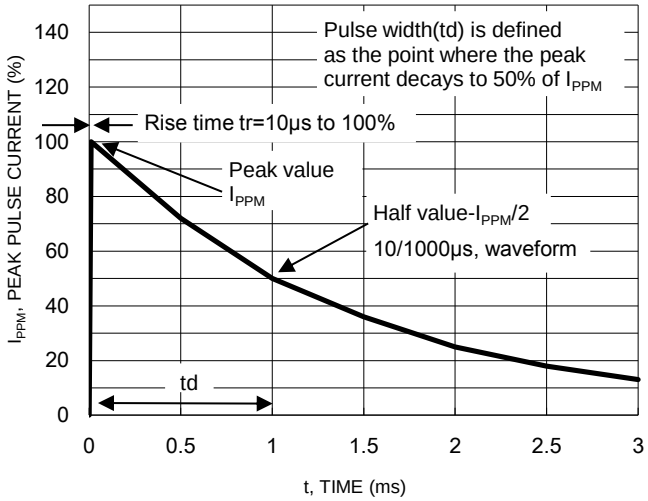
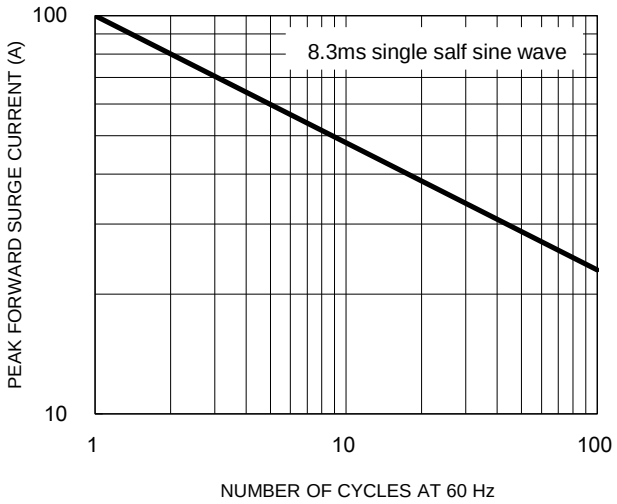
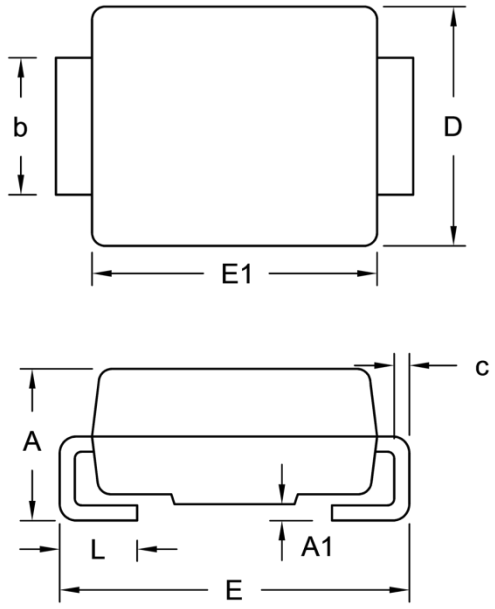


Fig.4 Maximum Non-Repetitive Forward Surge Current Unidirectional Only



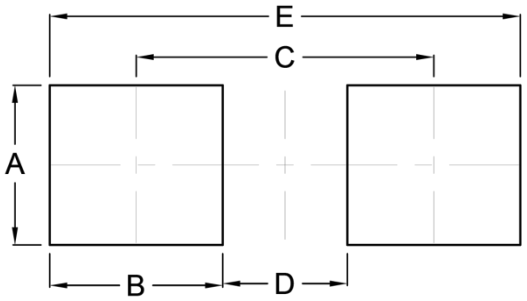
PACKAGE OUTLINE DIMENSIONS

DO-214AA (SMB)



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	1.95	2.65	0.077	0.104
A1	0.05	0.20	0.002	0.008
b	1.95	2.20	0.077	0.087
c	0.15	0.31	0.006	0.012
D	3.30	3.95	0.130	0.156
E	5.10	5.60	0.201	0.220
E1	4.05	4.60	0.159	0.181
L	0.75	1.60	0.030	0.063

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	2.30	0.091
B	2.50	0.098
C	4.30	0.169
D	1.80	0.071
E	6.80	0.268

MARKING DIAGRAM

Cathode band for uni-directional products only

P/N = Marking Code
G = Green Compound
YW = Date Code
F = Factory Code

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Purchasers are solely responsible for the choice, selection, and use of TSC products and TSC assumes no liability for application assistance or the design of Purchasers' products.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.

Looking for pricing, stock, or lifecycle information?

Click below to explore more details on WIN SOURCE:

- View SMB10J33CAHR5G on WIN SOURCE
- Taiwan Semiconductor Information

Optimize Your Supply Chain with WIN SOURCE Solutions

- Global Sourcing Solution
- Obsolete Management
- Cost Control Management
- Shortage Management
- Alternative Solution
- Excess Inventory Management