



5.0SMDJ58AS 5000W Transient Voltage Suppressor

Rev.1.1

DESCRIPTION:

TVS diodes can be used in a wide range of applications which like consumer electronic products, automotive industries, munitions, telecommunications, aerospace industries, and intelligent control systems.

FEATURES:

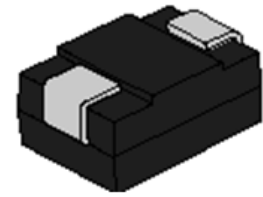
- ✧ Low profile package.
- ✧ Low inductance.
- ✧ Excellent clamping capability.
- ✧ 5000W peak pulse power capability at 10/1000μs waveform.
- ✧ Typical I_R less than 1μA.
- ✧ Fast response time: typically less than 1.0ps from 0V to V_{BR} min.
- ✧ High temperature to reflow soldering: 260°C/40s at terminals.
- ✧ Plastic package has under writers laboratory flammability 94V-0.
- ✧ Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C.
- ✧ Terminal: solder plated, solderable per J-STD-002.
- ✧ For surface mounted applications in order to optimize board space.
- ✧ UL 497B item recognized. (File No.:E480698).
- ✧ IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact).

SURGE LEVEL

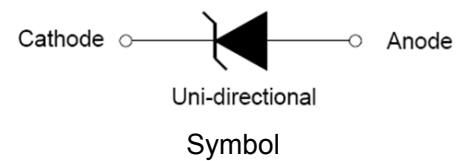
- ✧ 10/700μs 40ohm 6KV
- ✧ 1.2/50μs-8/20μs 2ohm 1KV

ABSOLUTE MAXIMUM RATINGS ($T_A=25^\circ\text{C}$, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Operating junction and storage temperature range	T_J/T_{STG}	-55 to +150	°C
Peak pulse power dissipation at 10/1000μs waveform	P_{PP}	5000	W
Steady state power dissipation at $T_L=75^\circ\text{C}$	$P_{M(AV)}$	6.5	W
Peak pulse voltage at 10/700μs@40Ω waveform	V_{PP}	6000	V
Peak pulse voltage at 1.2/50μs-8/20μs@2Ω waveform	V_{PP}	1000	V
Maximum instantaneous forward voltage at 100A for unidirectional only	V_F	5.0	V



SMC



ABSOLUTE MAXIMUM RATINGS (T_A=25°C, RH=45%-75%, unless otherwise noted, continue)

Parameter	Symbol	Value	Unit
Peak forward surge current, 8.3ms single half sine wave(Note 1)	I _{FSM}	300	A
Typical thermal resistance junction to lead	R _{θJL}	15	°C/W
Typical thermal resistance junction to ambient	R _{θJA}	75	°C/W

Notes:

1. Measured on 8.3ms single half sine wave or equivalent square wave for unidirectional device only, duty cycle=4 per minute maximum

MARKING



5PGGS : Device Marking Code
1937: the 37th week, 2019

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Part Number	V _R	I _R @V _R	V _{BR} @I _T		I _T	V _C @10/700μs 6KV/40Ω	V _C @1.2/50μs- 8/20μs 1KV/2Ω	V _C @ 10/1000μs 53.5A
			min(V)	max(V)		max(V)	max(V)	max(V)
5.0SMDJ58AS	58	1	64.40	71.20	1	100	120	93.6

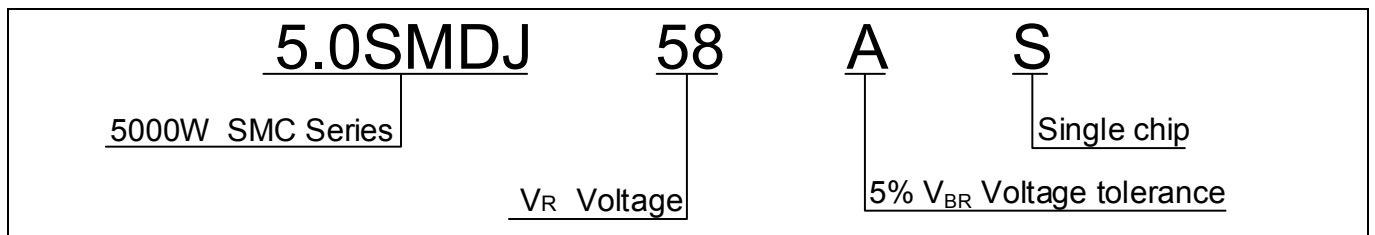
V_R: Stand-off voltage -- Maximum voltage that can be applied

V_{BR}: Breakdown voltage

V_C: Clamping voltage -- Peak voltage measured across the suppressor at a specified surge value

I_R: Reverse leakage current

ORDERING INFORMATION



RATINGS AND V-I CHARACTERISTICS CURVES (T_A=25°C, unless otherwise noted)

FIG.1: V- I curve characteristics (Uni-directional)

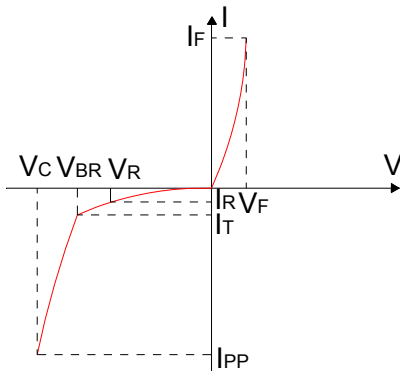


FIG.2: Pulse waveform

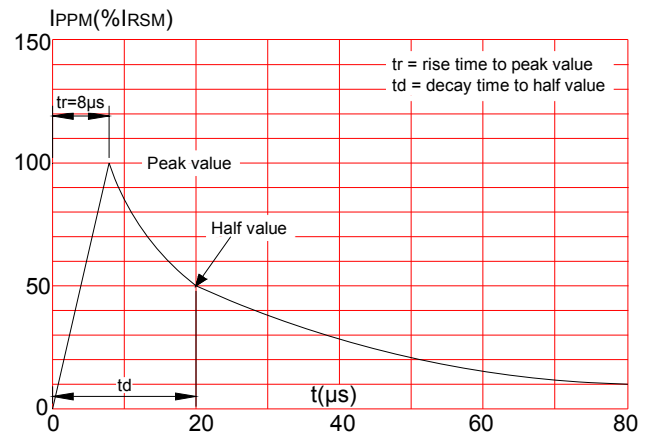


FIG.3: Pulse waveform

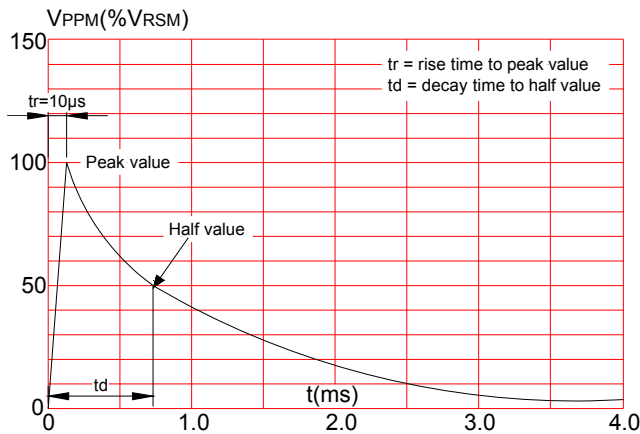


FIG.4: Pulse waveform

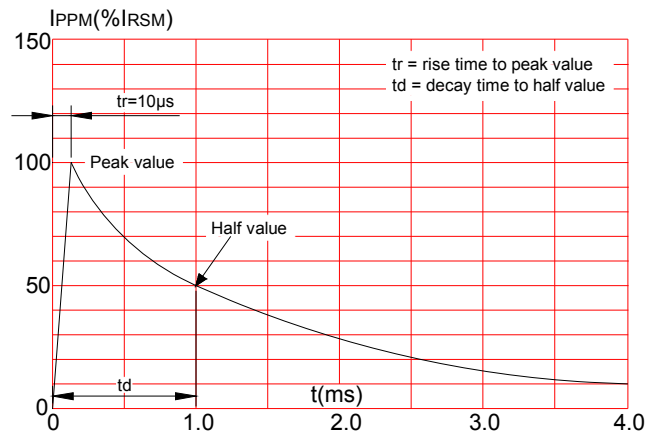


FIG.5: Pulse waveform

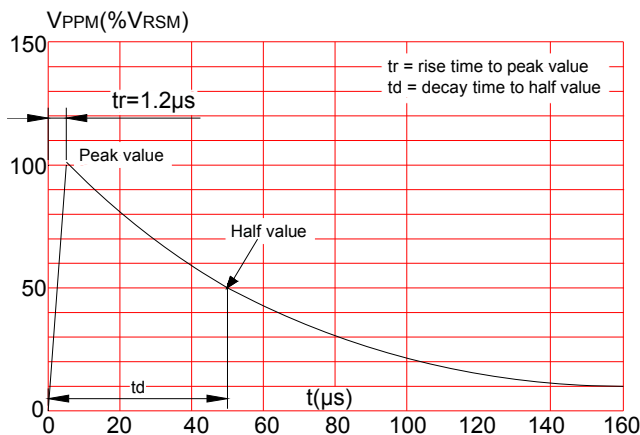
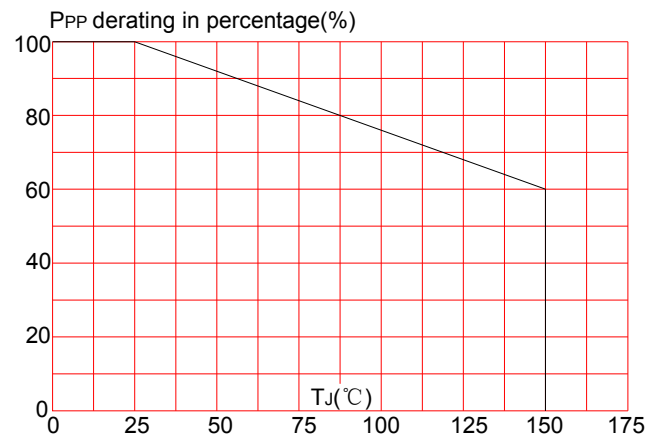
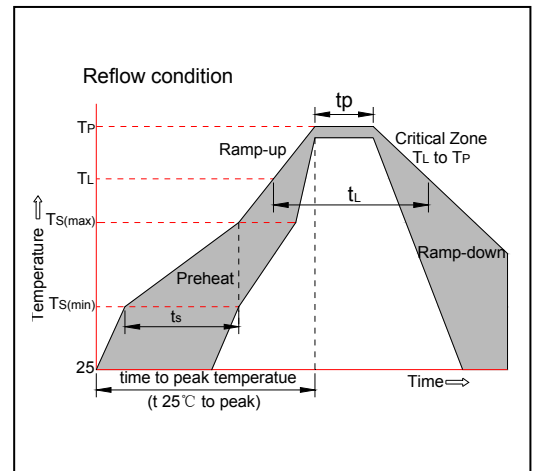


FIG.6: Pulse derating curve(10/1000μs)

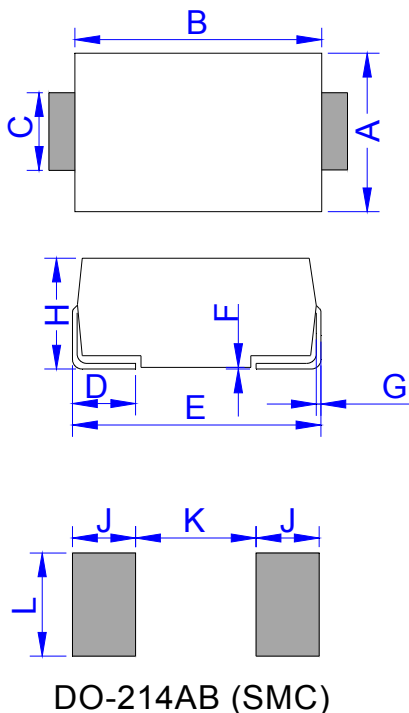


SOLDERING PARAMETERS

Reflow Condition		Pb-Free assembly (see figure at right)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquidus Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquidus)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		20-40secs.
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

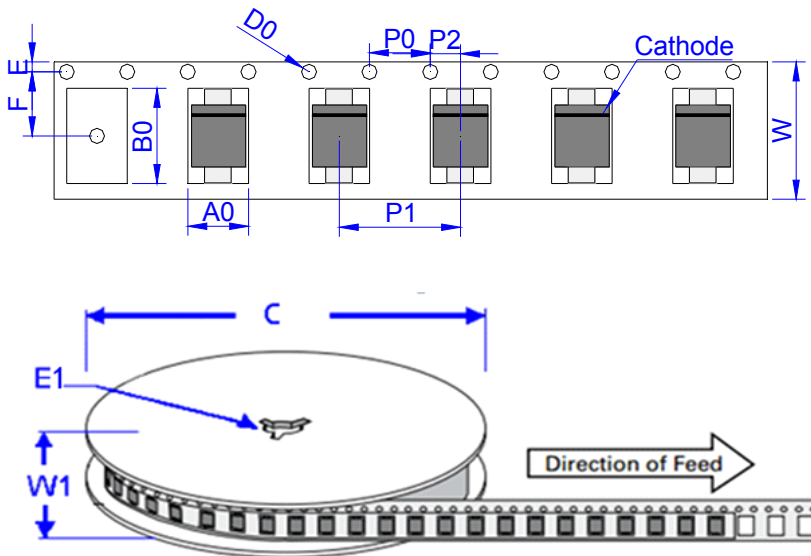


PACKAGE MECHANICAL DATA



Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	5.75	6.25	0.226	0.246
B	6.90	7.40	0.272	0.291
C	2.75	3.25	0.108	0.128
D	0.95	1.52	0.037	0.060
E	7.70	8.20	0.303	0.323
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.15	2.62	0.085	0.103
J	2.40		0.094	
K		4.20		0.165
L	3.30		0.130	

TAPE AND REEL SPECIFICATION-SMC



Ref.	Dimensions	
	Millimeters	Inches
A0	6.05 ± 0.3	0.238 ± 0.012
B0	8.31 ± 0.3	0.327 ± 0.012
C	330.0	13.0
D0	1.55 ± 0.1	0.061 ± 0.004
E	1.75 ± 0.2	0.069 ± 0.008
E1	13.3 ± 0.3	0.524 ± 0.012
F	7.50 ± 0.2	0.295 ± 0.008
P0	4.00 ± 0.2	0.157 ± 0.008
P1	8.00 ± 0.2	0.3145 ± 0.008
P2	2.00 ± 0.2	0.079 ± 0.008
W	16.0 ± 0.2	0.630 ± 0.008
W1	19.7 ± 2.0	0.776 ± 0.079

PART No.	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	PER CARTON (PCS)	DESCRIPTION
5.0SMDJ58AS	0.342	3,000	48,000	13 inch reel pack

Information furnished in this document is believed to be accurate and reliable. However, Jiangsu JieJie Microelectronics Co.,Ltd assumes no responsibility for the consequences of use without consideration for such information nor use beyond it.

Information mentioned in this document is subject to change without notice, apart from that when an agreement is signed, Jiangsu JieJie complies with the agreement.

Products and information provided in this document have no infringement of patents. Jiangsu JieJie assumes no responsibility for any infringement of other rights of third parties which may result from the use of such products and information.

This document is the 1.1st version which is made in 3-Aug.-2021. This document supersedes and replaces all information previously supplied.

 is a registered trademark of Jiangsu JieJie Microelectronics Co.,Ltd.

Copyright©2021 Jiangsu JieJie Microelectronics Co.,Ltd. Printed All rights reserved.