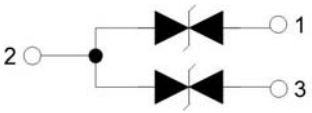
SMDJ58CA-3L Transient Voltage Suppressor

Rev.1.2

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.

SMC-3



Symbol

FEATURES:

- ✧ Low profile package.
- ✧ Low inductance.
- ✧ Excellent clamping capability.
- ✧ Fast response time: typically less than 1.0ps from 0V to V_{BR} min.
- ✧ High temperature to reflow soldering: 260℃/40s at terminals.
- ✧ Plastic package has underwriters laboratory flammability 94V-0.
- ✧ Meets MSL level 1, per J-STD-020, LF maximum peak of 260℃.
- ✧ 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).

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

Parameter	Symbol	Value	Unit
Storage temperature range	T_{STG}	-55 to +150	℃
Operating junction temperature range	T_J	-55 to +150	℃
Peak pulse current at 1.2/50-8/20μs@2Ω waveform	I_{PP}	500	A
Peak pulse voltage at 10/700μs@40Ω waveform	V_{PP}	4000	V
Typical thermal resistance junction to lead	$R_{\theta JL}$	30	℃/W
Typical thermal resistance junction to ambient	$R_{\theta JA}$	80	℃/W

Notes:

1. Surge rating: 500A@1.2/50-8/20μs(PIN 1 or 3 to 2)
2. Surge rating: 4000V@10/700μs(PIN 1 or 3 to 2)

MARKING

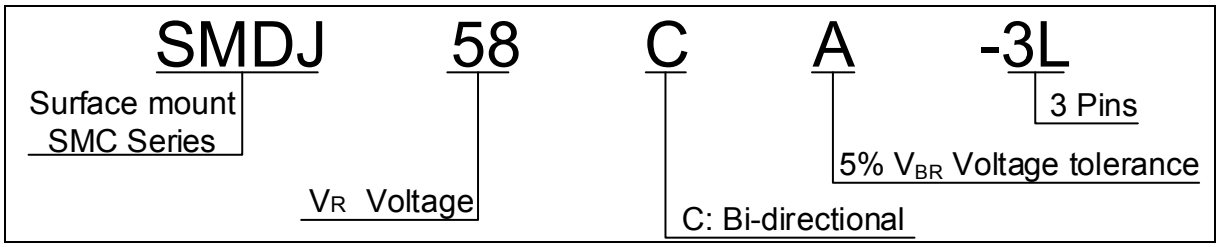
IGG: Device Marking Code
2009: In ninth week, 2020

ELECTRICAL CHARACTERISTICS(T_A=25℃)

Part Number	I_R@V_R		V_{BR}①@I_T		I_T	V_C@I_{PP}②	V_C@V_{PP}③	C_O④	Marking
	μA	V	V	V	mA	V	V	pF	
	max		min	max		max	max	typ	
SMDJ58CA-3L	5	58	64.4	71.2	1	95	93.6	1800	IGG

① V_{BR} is measured at I_T=1mA (PIN1 or 3 to 2)
②Surge waveform: 1.2/50-8/20μs I_{PP}: 500A (PIN1 or 3 to 2)
③Surge waveform: 10/700μs V_{PP}: 4000V (PIN1 or 3 to 2)
④Off-state capacitance is measured in V_{DC}=2V, V_{RMS}=1V, f=1MHz (PIN1 or 3 to 2)

ORDERING INFORMATION



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

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

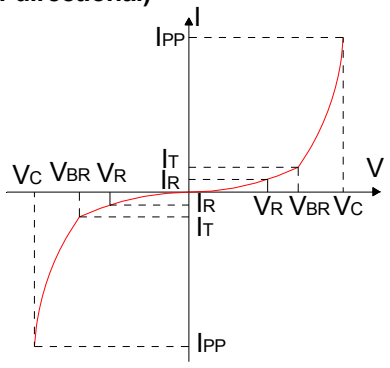


FIG.2: Pulse waveform

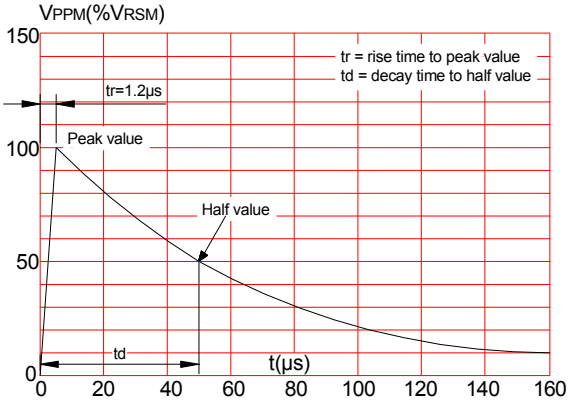


FIG.3: Pulse waveform

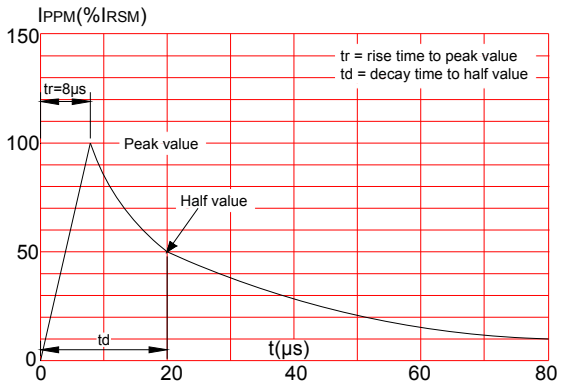


FIG.4: Pulse waveform

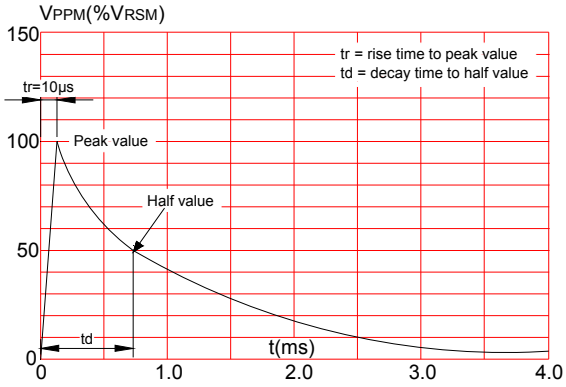
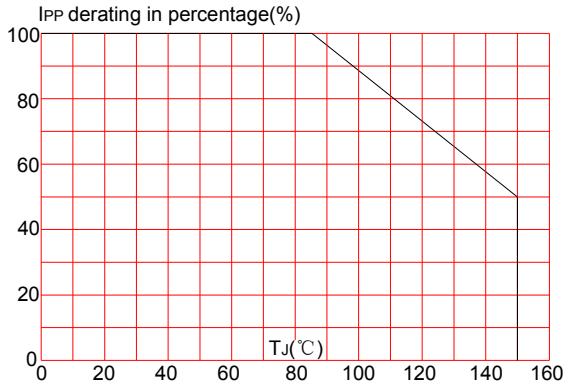
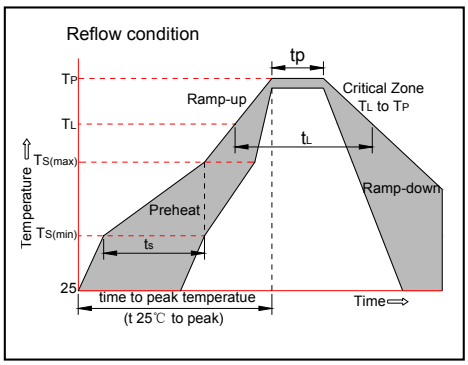


FIG.5: Pulse derating curve(8/20μs)

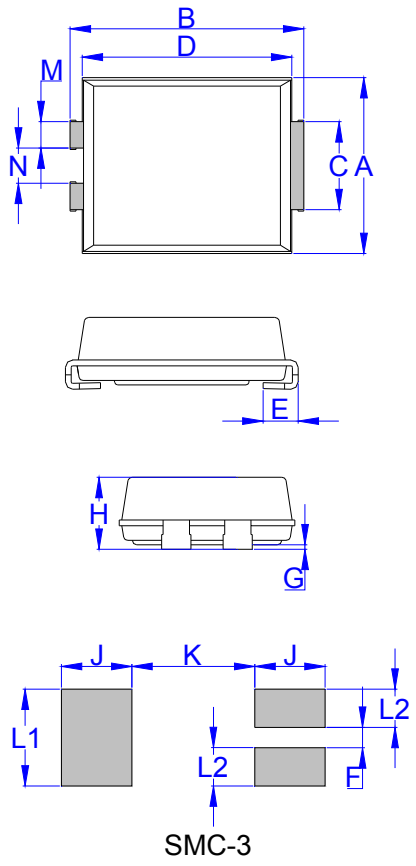


SOLDERING PARAMETERS

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



PACKAGE MECHANICAL DATA



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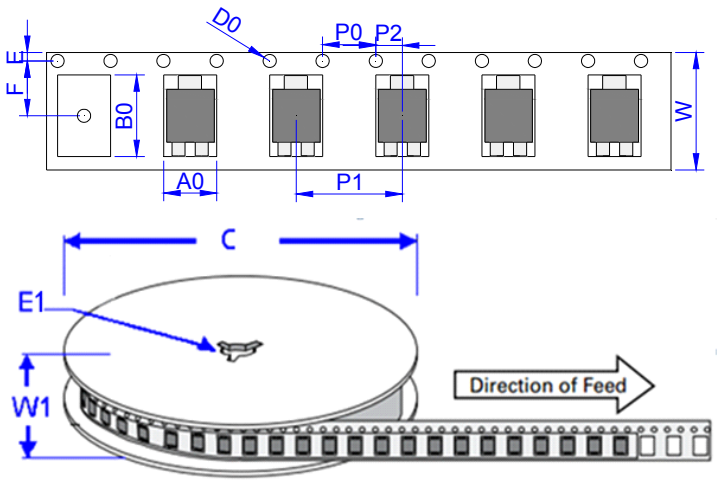
Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	5.75	6.25	0.226	0.246
B	7.70	8.20	0.303	0.323
C	2.75	3.25	0.108	0.128
D	6.90	7.40	0.272	0.291
E	0.95	1.52	0.037	0.060
G	-	0.30	-	0.012
H	2.15	2.62	0.085	0.103
M	0.70	1.10	0.028	0.043
N	1.00	1.40	0.039	0.055
L2	1.30		0.051	
F	0.70		0.028	
J	2.40		0.094	
K		4.20		0.165
L1	3.30		0.130	

TAPE AND REEL SPECIFICATION-SMC-3



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
SMDJ58CA-3L	0.33	3,000	48,000	13 inch reel pack

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