

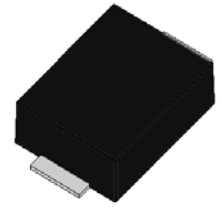


SMBFxxCANS Series Transient Voltage Suppressor

Rev.1.2

DESCRIPTION:

SMBFxxCANS series are designed for DC 48V, POE supply equipment, They are used to replace the SMDJ series TVS, also can be solved the POE normal solution which use TSPD.



SMBF



Bi-directional
Symbol

FEATURES:

- ✧ Low profile package.
- ✧ None negative resistance.
- ✧ Excellent clamping capability.
- ✧ Glass passivated junction.
- ✧ High temperature reflow soldering: 260°C/40s at terminals.
- ✧ Plastic package has underwriters 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.
- ✧ IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact).

SURGE LEVEL

- ✧ 10/700µs 40ohm 4KV
- ✧ 1.2/50µs-8/20µs 2ohm 1KV

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

Parameter	Symbol	Value	Unit
Storage and operating junction temperature range	T _{STG} /T _J	-55 to +150	°C
Peak pulse power dissipation at 10/1000µs waveform	P _{PP}	3000	W
Steady state power dissipation at T _L =75°C	P _{M(AV)}	5.0	W
Peak pulse voltage at 10/700µs@40Ω waveform	V _{PP}	4000	V
Peak pulse voltage at 1.2/50µs-8/20µs@2Ω waveform	V _{PP}	1000	V

MARKING



BF58C: Device Marking Code
1935: the 35th week, 2019

ELECTRICAL CHARACTERISTICS (T_A=25°C)

Part Number	Marking	V _R	I _{R@V_R}	V _{BR@I_T}		I _T	V _{C@}	V _{C@1.2/50μs-}	V _{C@I_{PP}} ^①	I _{PP} ^①
				10/700μs	8/20μs					
		V	max(μA)	min(V)	max(V)	mA	4kV/40Ω	1kV/2Ω	max(V)	A
SMBF54CANS	BF54C	54	1	60.0	66.3	1	95	100	85	34
SMBF58CANS	BF58C	58	1	64.4	71.2	1	100	105	90	32

① Surge waveform: 10/1000μs

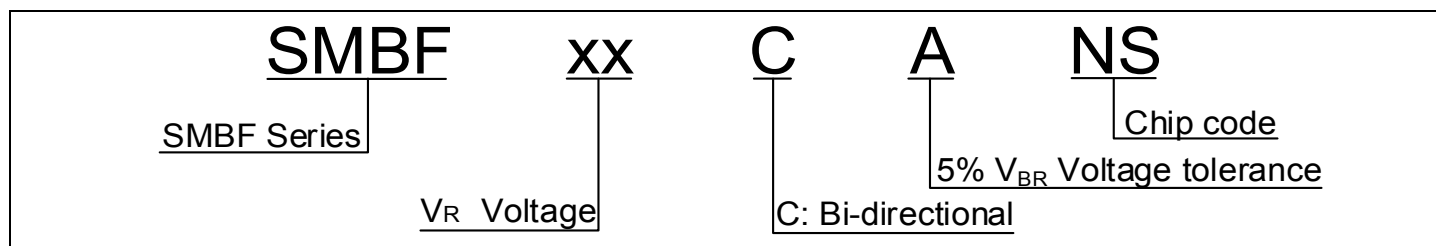
V_R: Stand-off voltage -- Maximum voltage that can be applied

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 (Bi-directional)

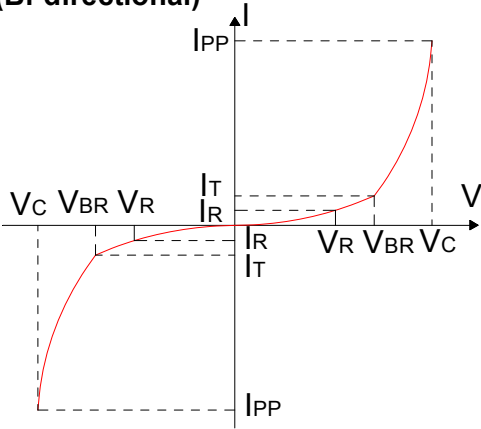


FIG.2: Pulse waveform

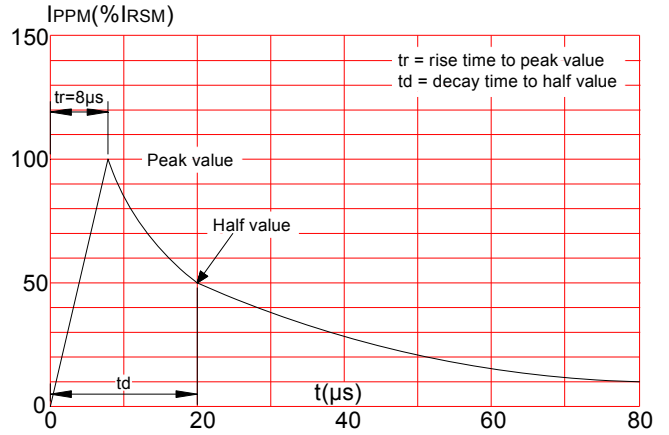


FIG.3: Pulse waveform

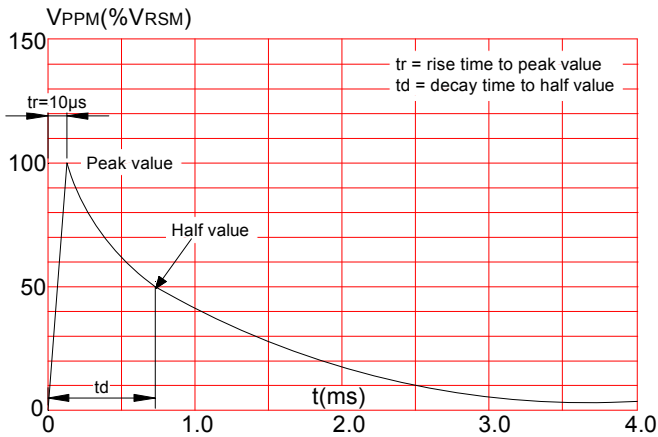


FIG.4: Pulse waveform

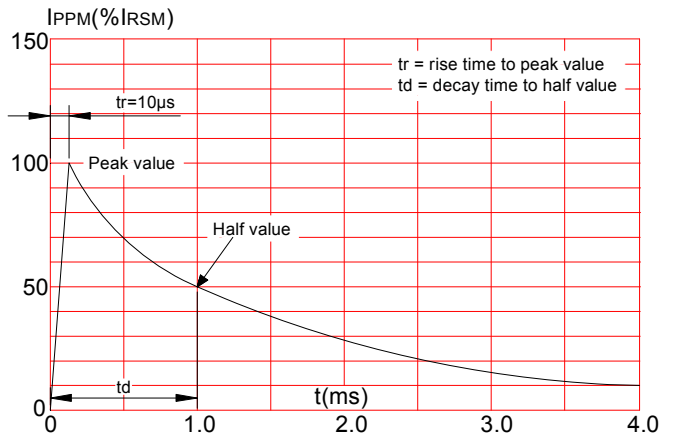


FIG.5: Pulse waveform

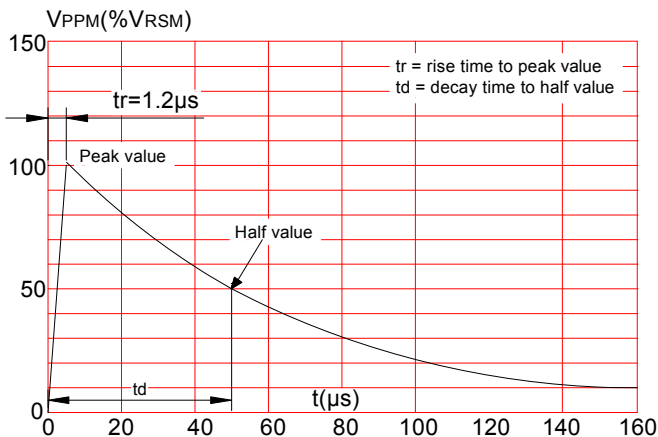
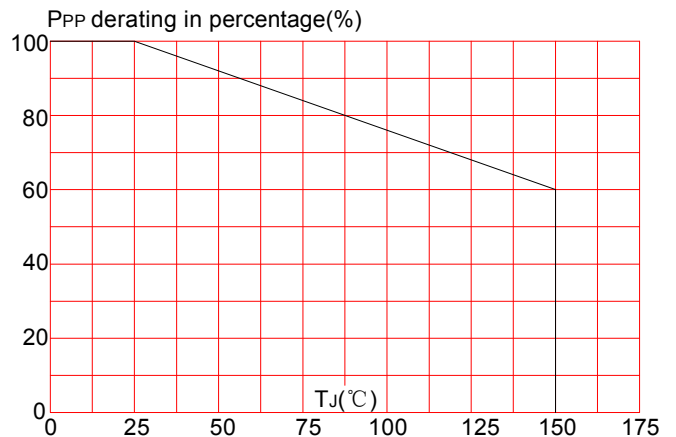
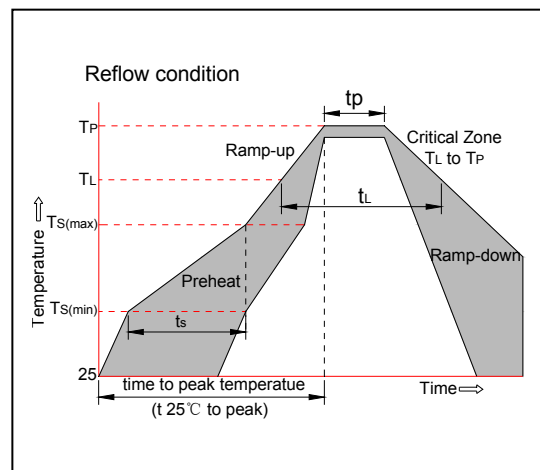


FIG.6: Pulse derating curve(10/1000μs)

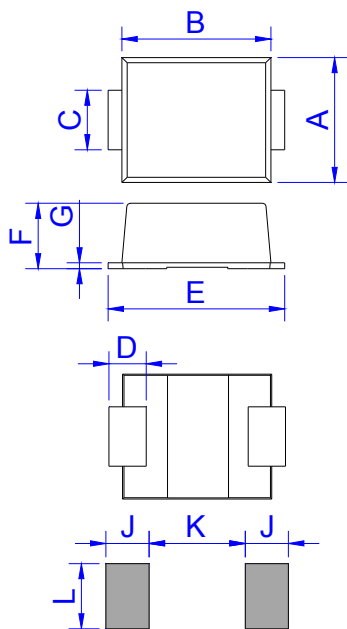


SOLDERING PARAMETERS

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) (ts)	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



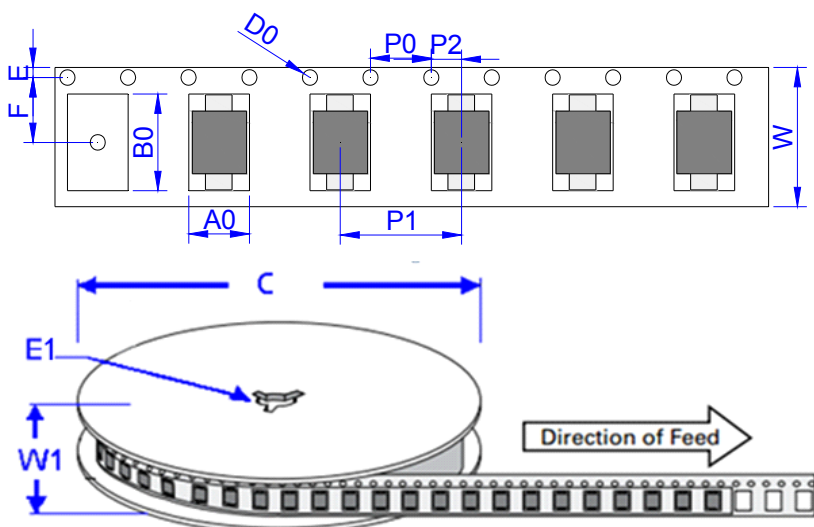
PACKAGE MECHANICAL DATA



SMBF

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.90	4.50	0.154	0.177
B	4.65	5.15	0.183	0.203
C	1.85	2.15	0.073	0.085
D	0.60		0.024	
E	5.60	6.00	0.220	0.236
F	2.05	2.35	0.081	0.093
G	0.12	0.28	0.005	0.011
J	2.00		0.079	
K		3.20		0.126
L	2.30		0.091	

TAPE AND REEL SPECIFICATION-SMBF



Ref.	Dimensions	
	Millimeters	Inches
A0	4.50±0.3	0.177 ± 0.012
B0	6.10±0.3	0.240 ± 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	5.5±0.2	0.217 ± 0.008
P0	4.00±0.2	0.157 ± 0.008
P1	8.00±0.2	0.315 ± 0.008
P2	2.00±0.2	0.079 ± 0.008
W	12.0±0.2	0.472 ± 0.008
W1	15.7±2.0	0.618 ± 0.079

PART No.	UNIT WEIGHT (g/PCS) typ.	REEL (PCS)	PER CARTON (PCS)	DESCRIPTION
SMBFxxCANS	0.13	3,000	48,000	13 inch reel pack

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