

Surface Mount Transient Voltage Suppressors (TVS)

SMBJ58CTB
DO-214AA(SMB)

Description

SMBJ58CTB is designed for DC 48V, POE supply equipment. It is used to replace the SMDJ series TVS, also can be solve the POE normal solution which use TSPD.

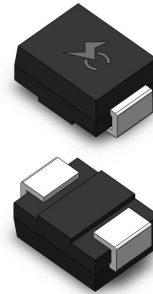
Surge Level

- ◆ 10/700 μ s 40ohm 4KV
- ◆ 1.2/50 μ s-8/20 μ s 2ohm 1KV

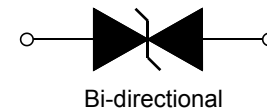
Features

- ◆ Low profile package.
- ◆ Excellent clamping capability.
- ◆ Glass passivated junction.
- ◆ High temperature reflow soldering: 260 $^{\circ}$ C/40s at terminals.
- ◆ Plastic package has underwriters laboratory flammability 94V-0.
- ◆ For surface mounted applications in order to optimize board space.

Bi-directional



Functional Diagram



Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Value	Unit
Steady state power dissipation at $T_L=75^{\circ}\text{C}$	$P_{M(AV)}$	5.0	W
Peak pulse power ($t_P=10/1000\mu\text{s}$)	P_{PP}	2000	W
Peak surge voltage on 10/700 μs waveform	V_{PP}	4000	V
Peak pulse current on 8/20 μs waveform	I_{PP}	500	A
Peak pulse current on 10/1000 μs waveform	I_{PP}	24	A
Storage and operating junction temperature range	T_{STG}, T_J	-55 to +150	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$)

Part Number	Marking Code	V_R (V)	$I_R @ V_R$ (μA)	$V_{BR} @ I_T$ (V)		I_T (mA)	V_C @10/700 μs 4KV /40 Ω max(V)	V_C @8/20 μs 500A max(V)	$V_C @$ 10/1000 μs 24A max(V)
				MIN	MAX				
SMBJ58CTB	58B	58	1	60	72	1	85	85	85

Notes:

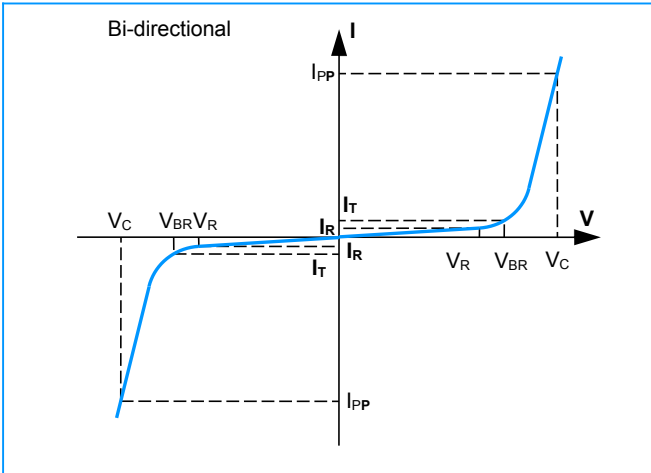
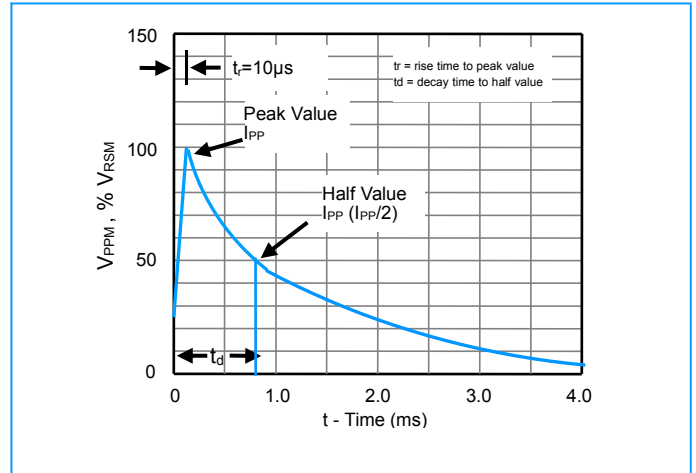
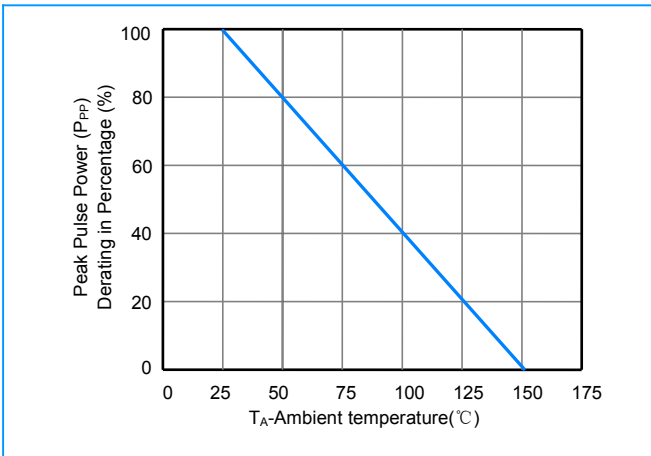
V_R : Stand-off Voltage -- Maximum voltage that can be applied.

V_{BR} : Breakdown Voltage.

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

I_R : Reverse Leakage Current.

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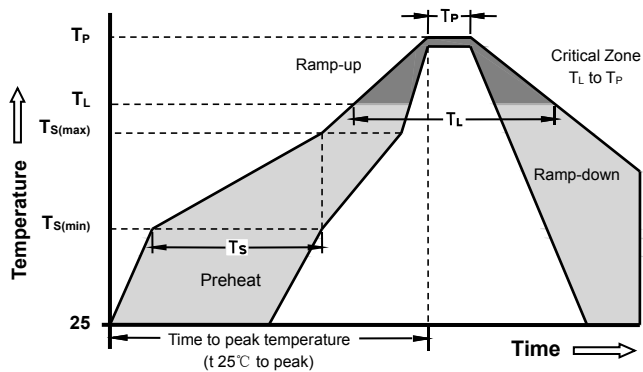
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Ratings and Characteristic Curves ($T_A=25^\circ\text{C}$ unless otherwise noted)
Figure 1 - V-I Curve Characteristics

Figure 2 - Pulse Waveform

Figure 3 - Pulse Derating Curve


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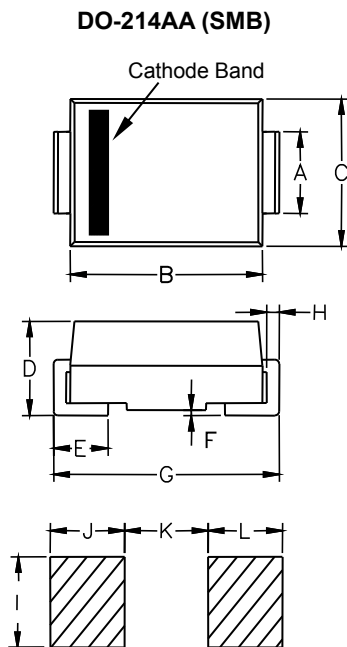
Soldering Parameters

Reflow Condition



Reflow Condition		Lead-free assembly
Pre Heat	-Temperature Min ($T_{s(min)}$)	150°C
	-Temperature Max ($T_{s(max)}$)	200°C
	- Time (min to max) (T_s)	60 - 180 seconds
Average ramp up rate (Liquidus Temp T_L) to peak		3°C/second max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/second max
Reflow	- Temperature (T_L) (Liquidus)	217°C
	- Time (min to max) (T_L)	60 - 150 seconds
Peak Temperature (T_P)		260 +0/-5°C
Time within 5 °C of actual peak Temperature (t_p)		20 - 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes max
Do not exceed		260°C

Dimensions



Dimensions	Inches		Millimeters	
	Min	Max	Min	Max
A	0.075	0.087	1.90	2.20
B	0.169	0.189	4.30	4.80
C	0.130	0.155	3.30	3.94
D	0.083	0.094	2.10	2.40
E	0.037	0.060	0.95	1.52
F	0.002	0.008	0.051	0.203
G	0.205	0.220	5.20	5.60
H	0.006	0.012	0.15	0.31
I	0.091	-	2.30	-
J	0.087	-	2.20	-
K	-	0.102	-	2.60
L	0.087	-	2.20	-

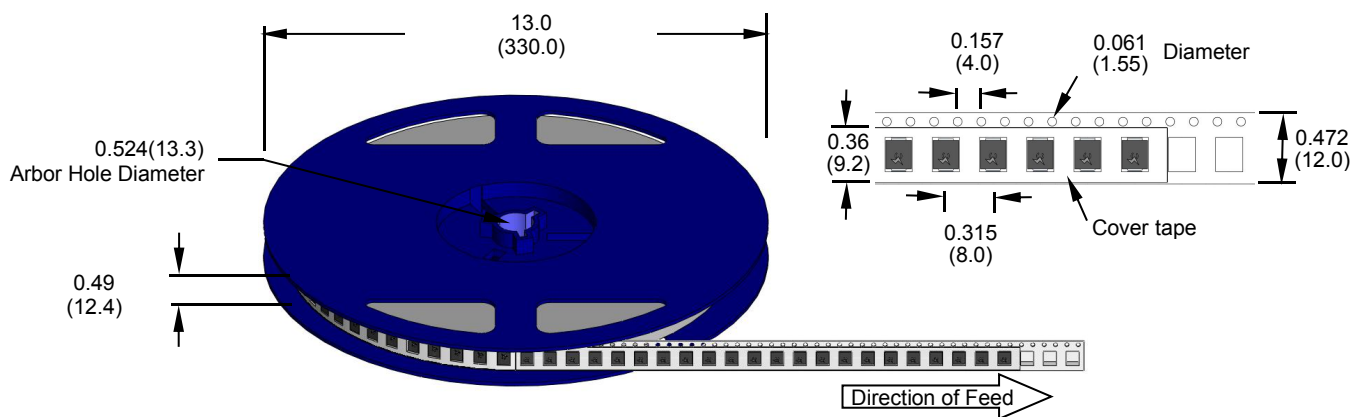
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Packaging

Part Number	Package	Reel (pcs)	Per Carton (pcs)	Reel Diameters (mm)
SMBJ58CTB	DO-214AA(SMB)	3000	48000	330

Tape and Reel Specifications



Dimensions are in inches
(and millimeters)