

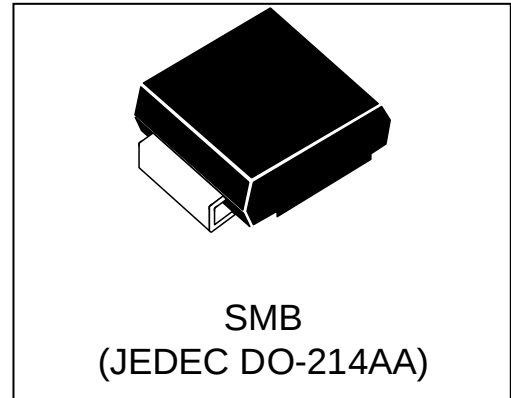


WS58P10SMB-BNRL

Power Transient Voltage Suppressor

Features

- 1000 watts Peak Pulse Power (10/1000 μ s)
- Bidirectional Protection
- Fast Response Time : Typically < 1ns
- Excellent Clamping Capability
- Glass Passivated Junction
- Built-in Strain relief
- Low inductance
- Low profile package
- High temperature solder:260°C/10 seconds at terminal
- IEC 61000-4-2 (ESD) $\pm$ 30kV(air), $\pm$ 30kV(contact)



Mechanical Characteristics

- JEDEC DO-214AA package
- Molding compound flammability rating:
UL 94V-0
- Marking: Marking Code
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant

Applications

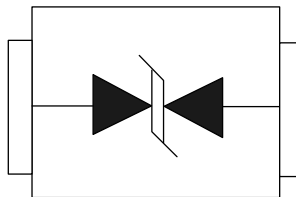
- I/O Interfaces
- Power lines
- Automotive and Telecommunication
- Computers & Consumer Electronics
- Industrial Electronics

Absolute Maximum Rating			
Rating	Symbol	Value	Units
Peak Pulse Power (tp =10/1000 μ s) (see Note1,2)	P _{PPM}	1000	Watts
Non-repetitive peak impulse Voltage 10/700 μ s (ITU-T K.20, K.21 & K.45, K.44)	V _{PPSM}	2000	V
Peak pulse current (10/1000 μ s) (see Note2)	I _{PP}	10.68	A
Power Dissipation on infinite heat sink T _L = 50 °C (Fig4)	P _D	6.5	W
Operating Junction Temperature range	T _J	-65 to + 150	°C
Storage Temperature range	T _{STG}	-65 to + 150	°C

Note1: Peak Pulse Power Rating as Pulse Width ,per Fig1.

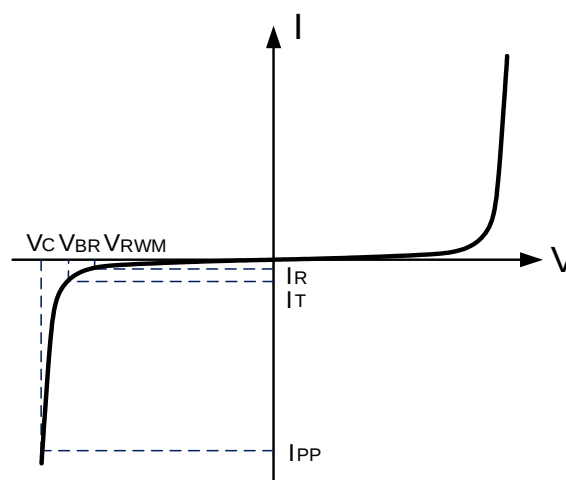
Note2: Peak Pulse Power or Current Derated above T_A=25°C Per Fig. 2 and Non-Repetitive Current Pulse,Per Fig.3.

Pin Configuration



Electrical Characteristics

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Maximum Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current



Parameter	Symbol	Conditions	Minimum	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}			58	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	62	71.2	V
Reverse Leakage Current	I_R	$V_{RWM}=58V$, $T=25^{\circ}C$		1	μA
Clamping Voltage	V_C	$I_{PP}=10.68A$, $t_p=10/1000\mu s$		93.6	V
Clamping Voltage	V_C	$V_{PPSM}=2KV$, $t_p=10/700-5/320\mu s$ 40 Ω		80	V

Typical Characteristics

Figure 1: Peak Pulse Power Rating Curve

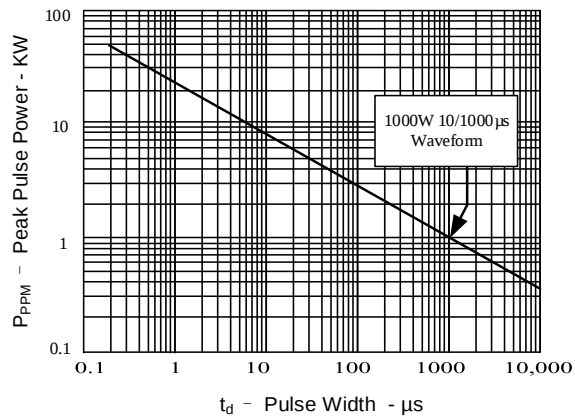


Figure 2: Pulse Derating Curve

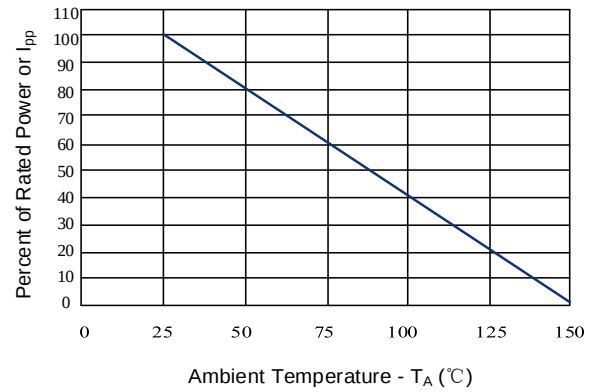


Figure 3: Pulse Waveform

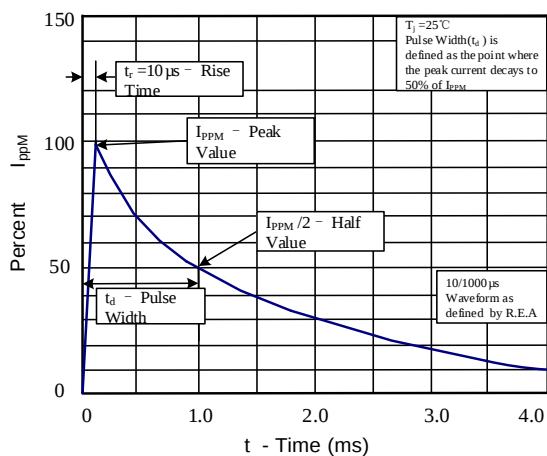
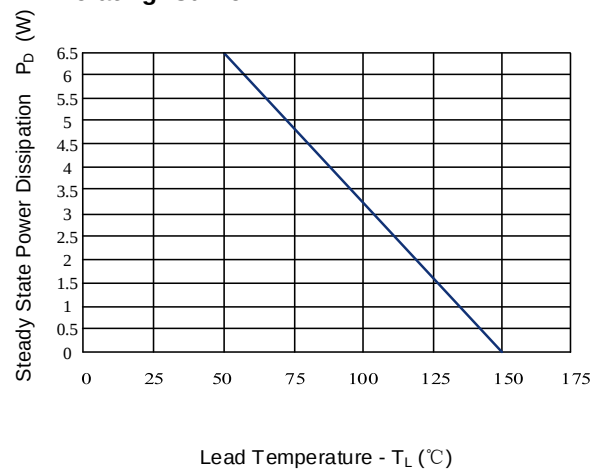
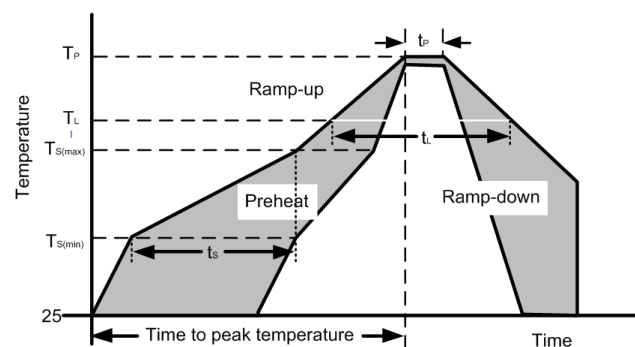


Figure 4: Steady State Power Dissipation Derating Curve



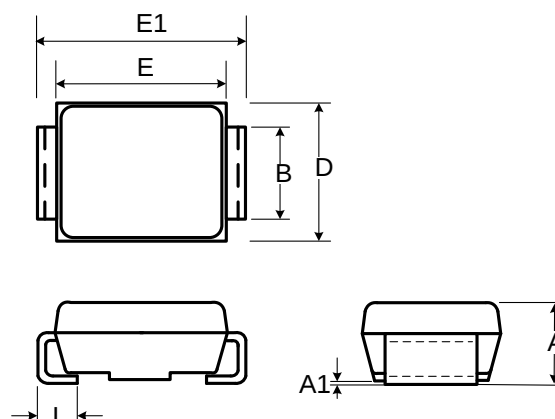
Recommended Soldering Parameters

Reflow Condition		
Pre-Heat	Temperature min ($T_{S(min)}$)	150°C
	Temperature max ($T_{S(max)}$)	200°C
	Time (min to max) (t_s)	60-190 s
Average ramp up rate (Liquidus Temp) (T_L) to peak		3°C/s max
$T_{S(max)}$ to T_L - Ramp-up Rate		3°C/s max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Temperature (t_L)	60-150 s
Peak Temperature (T_P)		260 $^{+0/-5}$ °C
Time within actual peak Temperature (t_p)		20-40 s
Ramp-down Rate		5°C/s max
Time 25°C to peak Temperature (T_P)		8 minutes max
Do not exceed		260°C

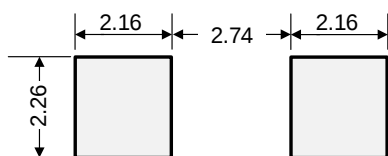


Outline Drawing – SMB(DO-214AA)

Ref. (mm)	Millimeters	
	Min.	Max.
A	2.130	2.600
A1	-	0.300
B	1.900	2.200
E	4.100	4.750
E1	5.210	5.590
D	3.300	3.940
L	0.760	1.520

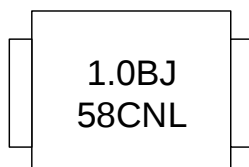


Recommended Solder Pad Layout



Dimensions in mm

Marking Code



Package Information

Package Type	Description	Quantity (pcs)
SMB(DO-214AA)	Tape & Reel -12mm/13" tape	3000

Contact Information

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For additional information, please contact your local Sales Representative.

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