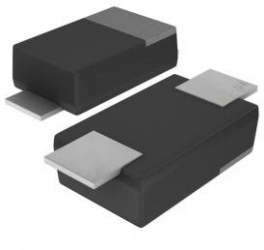
WS30P4S1-B

Power Transient Voltage Suppressor

Features

- Bidirectional Protection
- Fast Response Time : Typically < 1ns
- Excellent Clamping Capability
- Low clamping voltage
- Built-in Strain relief
- Low inductance
- Low profile package
- High temperature solder:260℃/10 seconds at terminal



SOD-123

Mechanical Characteristics

- SOD-123 package
- Matte tin lead – free plated
- Marking: Marking Code
- RoHS Compliant

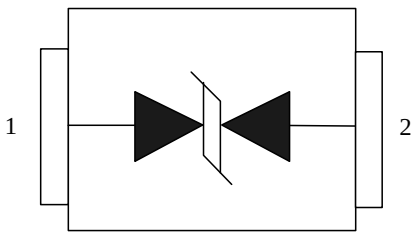
Applications

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

Absolute Maximum Rating

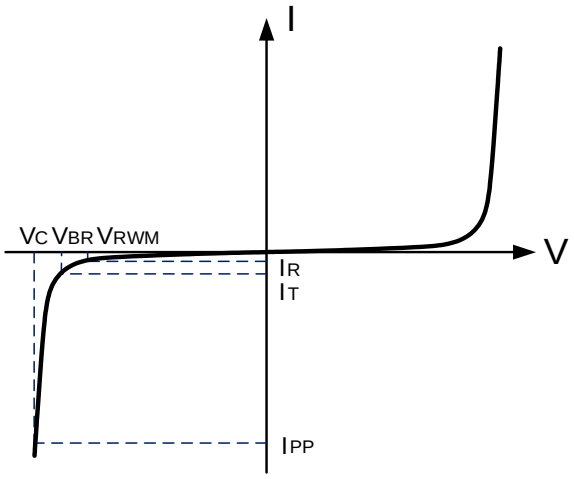
Rating	Symbol	Value	Units
Peak pulse power (8/20μs)	P_{PP}	4800	W
Peak pulse current (8/20μs)	I_{PP}	100	A
Operating Junction Temperature range	T_J	-55 to + 150	℃
Storage Temperature range	T_{STG}	-55 to + 150	℃

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



Electrical Characteristics

WS30P4S1-B						
Parameter	**Symbol**	**Conditions**	**Minimum**	**Typical**	**Maximum**	**Units**
Reverse Stand-Off Voltage	V_{RWM}				30	V
Reverse Breakdown Voltage	V_{BR}	I_T=1mA	33		37	V
Reverse Leakage Current	I_R	V_{RWM}=30V, T=25°C			1	μA
Clamping Voltage	V_C	I_{PP}=100A, t_p=8/20μs		48	53	V
Junction Capacitance	Cj	VBIAS=0V, f=1MHz		300		pF

Typical Characteristics

Figure 1: Peak Pulse Power Rating Curve

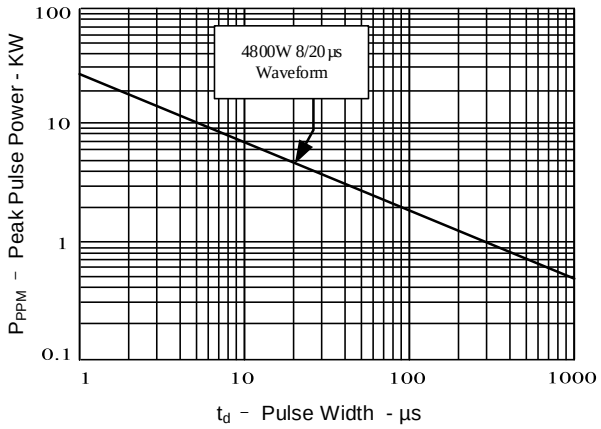


Figure 2: Pulse Derating Curve

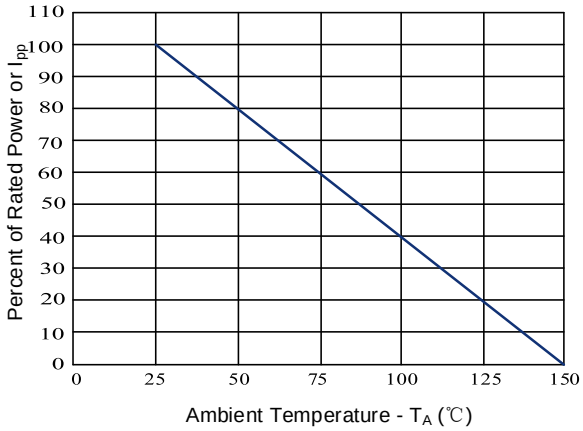
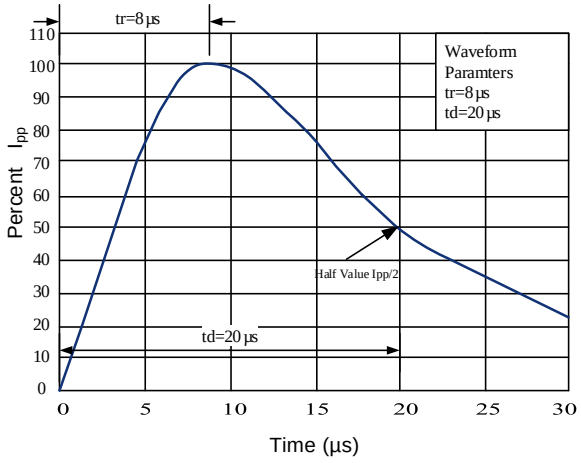
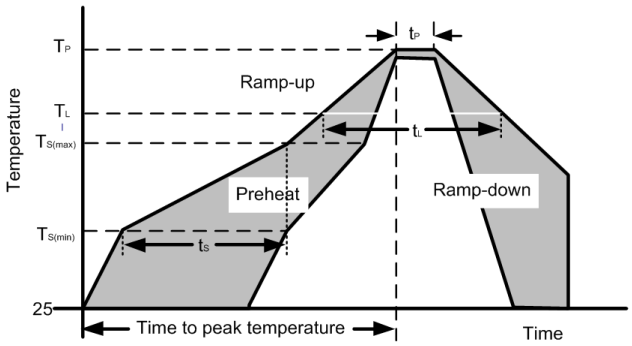


Figure 3: 8/20μs Pulse Waveform



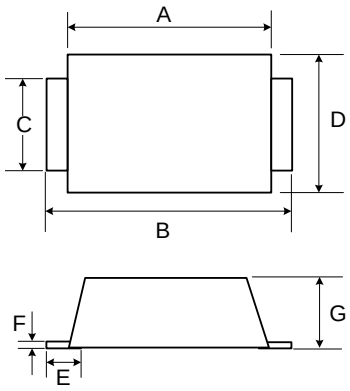
Recommended Soldering Parameters

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
Ts(max) to TL - 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

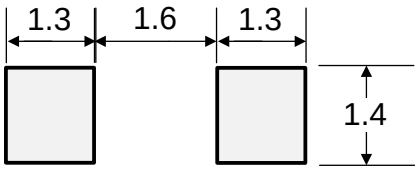


Outline Drawing – SOD-123

Ref.（mm）	Millimeters	
	Min.	Max.
A	2.50	2.95
B	3.40	3.95
C	0.70	1.10
D	1.50	1.90
E	0.45	0.95
F	0.05	0.26
G	0.90	1.05



Recommended Solder Pad Layout



Dimensions in mm

Marking Code

Package Information

Package Type	Description	Quantity（pcs）
SOD-123	Tape & Reel -8mm/7″ tape	3000

Contact Information

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