



Features

- 220 Watts Peak Pulse Power per Line ($t_p = 8/20\mu s$)
- Replacement for MLV (0805)
- Protects one I/O or power line
- Low Clamping Voltage
- Working Voltage: 18 V
- Low Leakage Current
- Response Time is Typically $< 1\text{ ns}$



IEC Compatibility (EN61000-4)

- IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (air), $\pm 30\text{kV}$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 5.5A (8/20 μs)

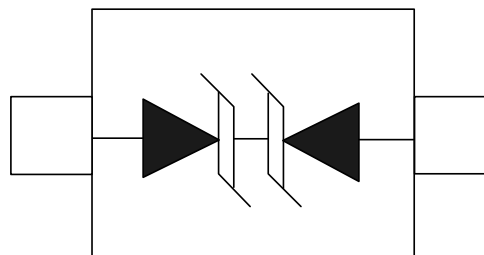
Mechanical Characteristics

- JEDEC SOD-323 package
- Molding compound flammability rating:
UL 94V-0
- Marking : Marking Code
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant

Applications

- Laptop Computers
- Cellular Phones
- Digital Cameras
- Personal Digital Assistants (PDAs)

Schematic & PIN Configuration



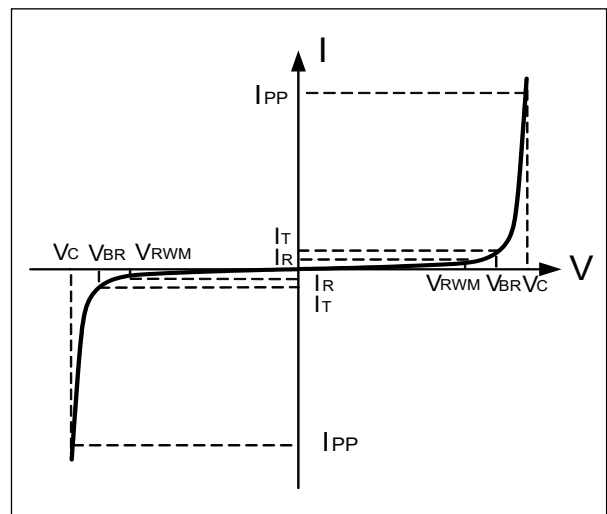
SOD-323 (Top View)

Absolute Maximum Rating

Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{PP}	220	Watts
Operating Temperature	T_J	-55 to + 125	$^{\circ}C$
Storage Temperature	T_{STG}	-55 to +150	$^{\circ}C$

Electrical Parameters (T=25 $^{\circ}C$)

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



Electrical Characteristics

DW18D-B-S						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}				18	V
Reverse Breakdown Voltage	V_{BR}	$I_T = 1mA$	19.8			V
nReverse Leakage Current	I_R	$V_{RWM} = 18V, T = 25^{\circ}C$			200	nA
Peak Pulse Current	I_{PP}	$t_p = 8/20\mu s$			5.5	A
Clamping Voltage	V_C	$I_{PP} = 5.5A, t_p = 8/20\mu s$			40	V
Dynamic Resistance ^{1,2}	R_{DYN}	TLP=0.2/100ns		0.25		Ω
ESD Clamping Voltage ¹	V_C	$I_{PP} = 4A, t_p = 0.2/100ns$ (TLP)		24.6		V
ESD Clamping Voltage ¹	V_C	$I_{PP} = 16A, t_p = 0.2/100ns$ (TLP)		27.5		V
Junction Capacitance	C_j	$V_R = 0V, f = 1MHz$		16		pF

Notes : 1、TLP Setting : $t_p = 100ns, t_r = 0.2ns, I_{TLP}$ and V_{TLP} sample window: $t_1 = 70ns$ to $t_2 = 90ns$.

2、Dynamic resistance calculated from $I_{PP} = 4A$ to $I_{PP} = 16A$ using "Best Fit".

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Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

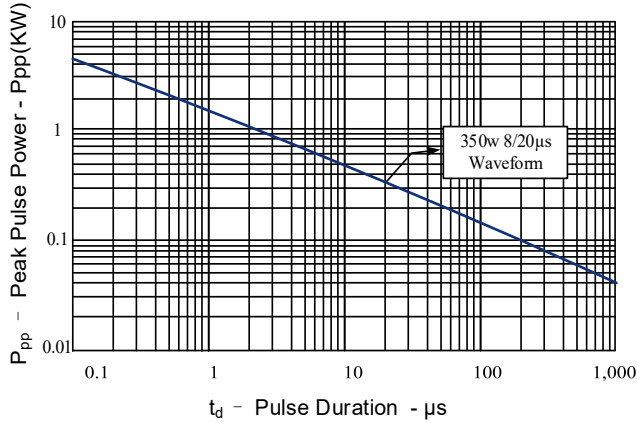


Figure 2: Power Derating Curve

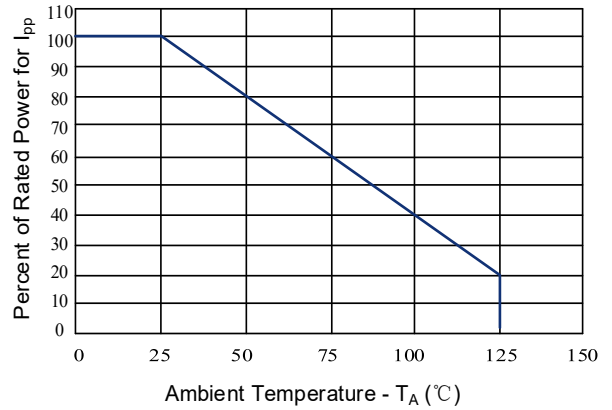


Figure 3: Clamping Voltage vs. Peak Pulse Current

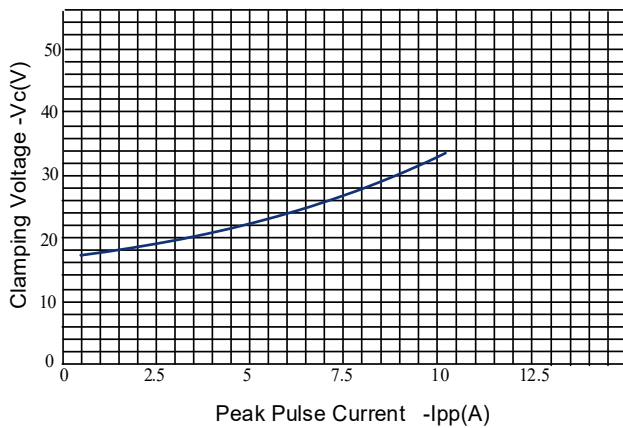


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

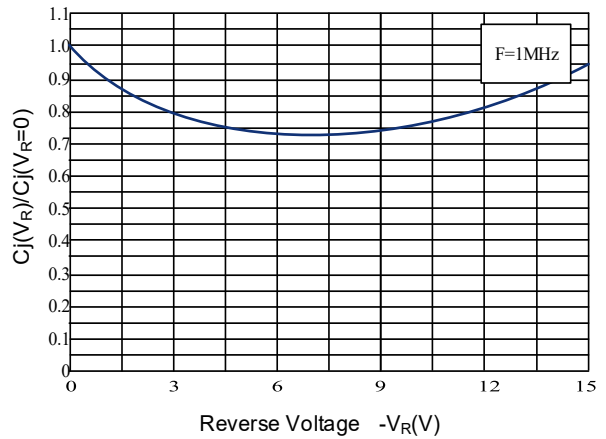


Figure 5: TLP Positive I-V Curve

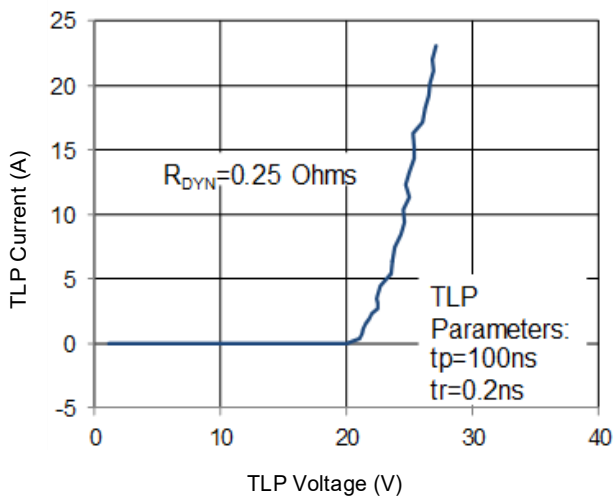
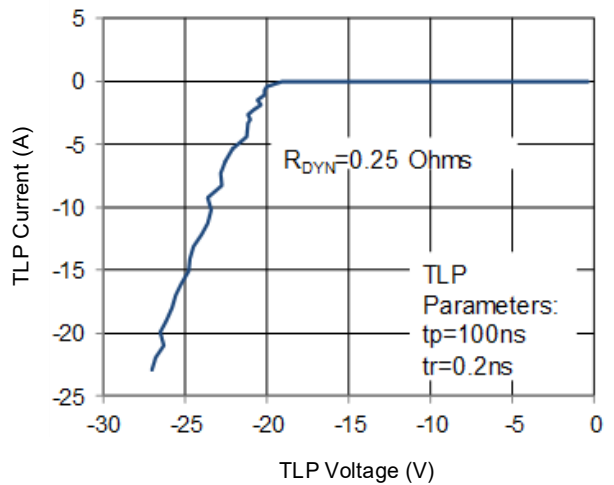


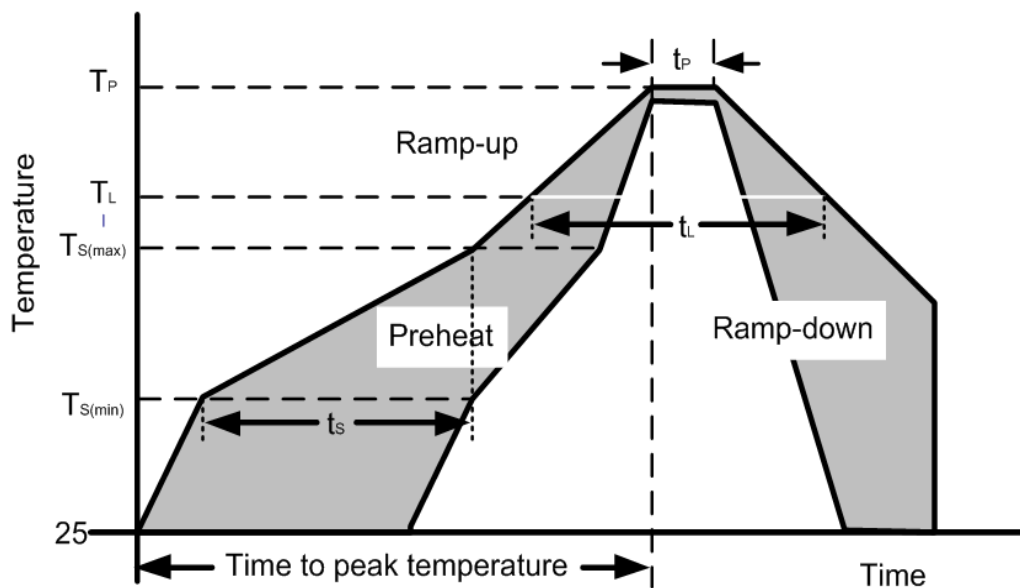
Figure 6: TLP Negative I-V Curve





Soldering Parameters

Reflow Condition		Pb – 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 – 190 secs
Average ramp up rate (Liquidus Temp) (T_L) to peak		5°C/second max
$T_{S(max)}$ to T_L —Ramp-up Rate		5°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Temperature (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260+0/-5 °C
Time within actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		280°C





Outline Drawing – SOD-323

PACKAGE OUTLINE

SOD-323

DIMENSIONS

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	1.600	1.800	0.063	0.071
B	0.250	0.350	0.010	0.035
C	2.500	2.700	0.098	0.106
D		1.000		0.039
E	1.200	1.400	0.047	0.055
F	0.080	0.150	0.003	0.006
L	0.475 REF		0.019REF	
L1	0.250	0.400	0.010	0.016
H	0.000	0.100	0.000	0.004

DIMENSIONS: MILLIMETERS

Notes

- Controlling Dimensions in Millimeters.
- Dimensions are exclusive of mold flash and metal burrs.

Marking Codes

Part Number	Marking Code
DW18D-B-S	

Package Information

Qty: 3k/Reel