



DW12D5-S-Q ESD Protection Diode

Feature

- Uni-directional ESD protection of one line
- 150Watts peak pulse power ($t_p = 8/20\mu s$)
- Working voltage: 12V
- Junction Capacitance: 42pF(Typ)
- Low clamping voltage
- Low leakage current
- AEC-Q101 qualified
- IEC 61000-4-2 $\pm 8kV$ contact $\pm 15kV$ air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 7A (8/20 μs)

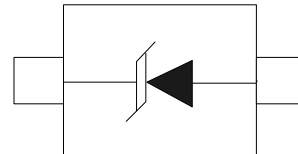
Application

- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Pagers Peripherals

Mechanical Data

- Package: SOD-523
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	QTY per Reel	Reel Size
DW12D5-S-Q	SOD-523		5000 pcs	7 inches



Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Units
Peak Pulse Power ($t_p=8/20\mu\text{s}$)	P_{PP}	150	Watts
Peak Pulse Current ($t_p=8/20\mu\text{s}$) (note1)	I_{pp}	7	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	± 15 ± 8	kV
Lead Soldering Temperature	T_L	260(10seconds)	$^{\circ}\text{C}$
Junction Temperature	T_J	-55 to + 150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 to + 150	$^{\circ}\text{C}$

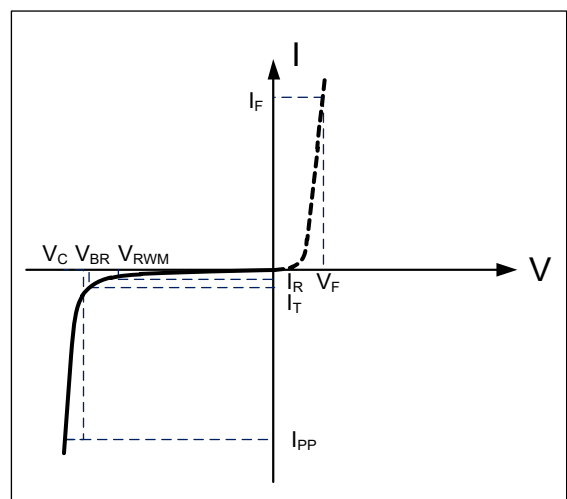
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				12	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	13.3			V
Reverse Leakage Current	I_R	$V_{RWM}=12\text{V}, T=25^{\circ}\text{C}$			1.0	μA
Clamping Voltage	V_C	$I_{PP}=7\text{A}, t_p=8/20\mu\text{s}$			22	V
Junction Capacitance	C_J	$V_R = 0\text{V}, f = 1\text{MHz}$		42		pF

Electrical Parameters

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

Note: 8/20 μs pulse waveform.





Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

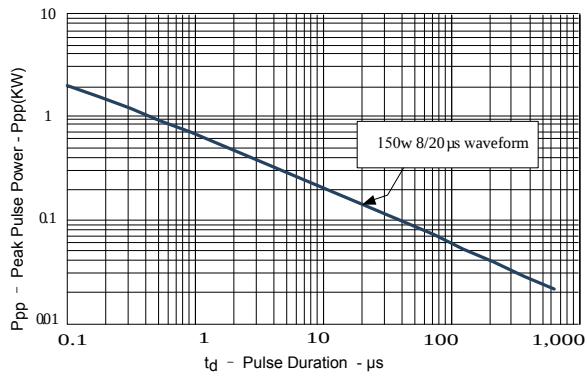


Figure 2: Power Derating Curve

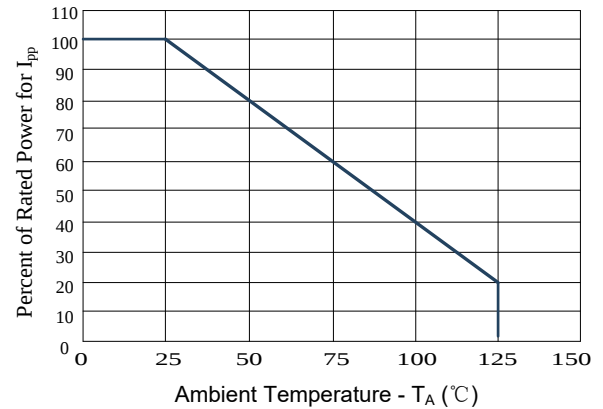


Figure3: Pulse Waveform

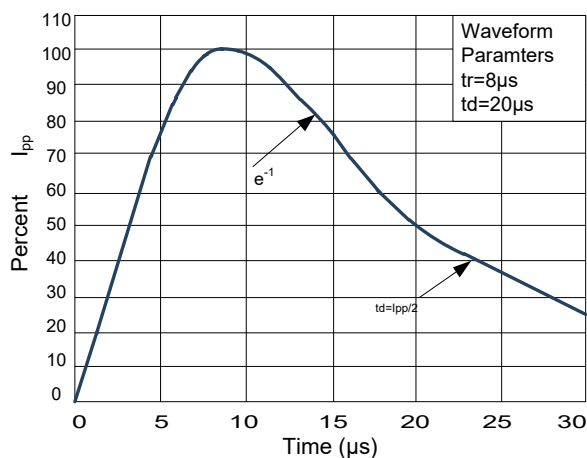
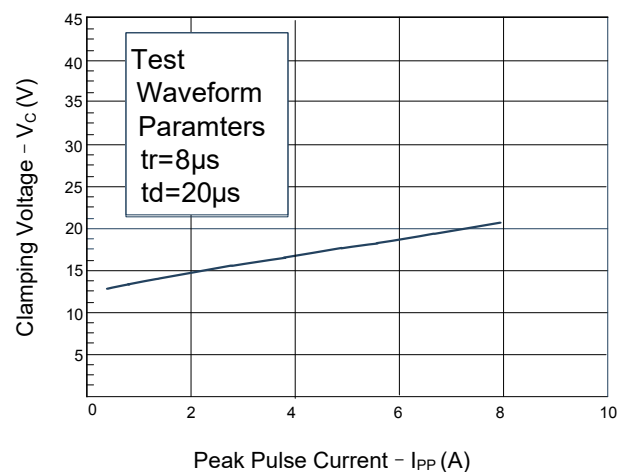
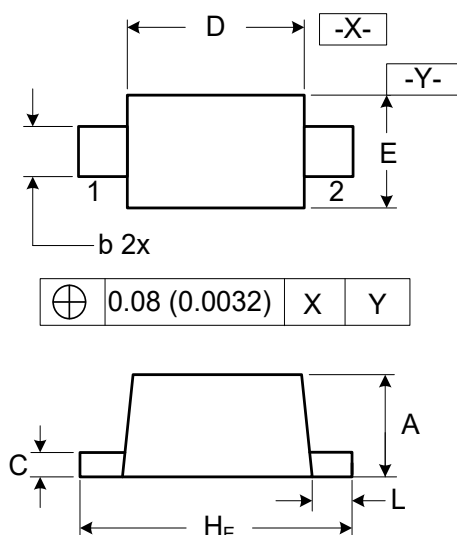


Figure 4: Clamping Voltage vs.Ipp



SOD-523 Outline Drawing



DIMENSIONS

SYMBOL	MILLIMETER		INCHES	
	MIN	MAX	MIN	MAX
A	0.50	0.70	0.020	0.028
b	0.25	0.35	0.010	0.014
C	0.07	0.20	0.0028	0.0079
D	1.10	1.30	0.043	0.051
E	0.70	0.90	0.028	0.035
HE	1.50	1.70	0.059	0.067
L	0.15	0.25	0.006	0.010