



DWRB0510S9-Q ESD Protection Diode

Feature

- Bi-directional ESD protection of one line
- 50Watts peak pulse power ($t_p = 8/20\mu s$)
- Working voltage: 5V
- Junction Capacitance: 0.8pF(Typ)
- Low clamping voltage
- Low leakage current
- AEC-Q101 qualified
- IEC 61000-4-2 $\pm 8kV$ contact $\pm 10kV$ air
- IEC 61000-4-5 (Lightning) 2A ($8/20\mu s$)

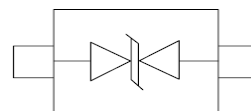
Application

- Smart phones
- Display Ports
- MDDI Ports
- USB Ports
- Digital Video Interface (DVI)
- PCI Express and Serial SATA Ports

Mechanical Data

- Package: SOD-923
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	QTY per Reel	Reel Size
DWRB0510S9-Q	SOD-923		8000 pcs	7 inches



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

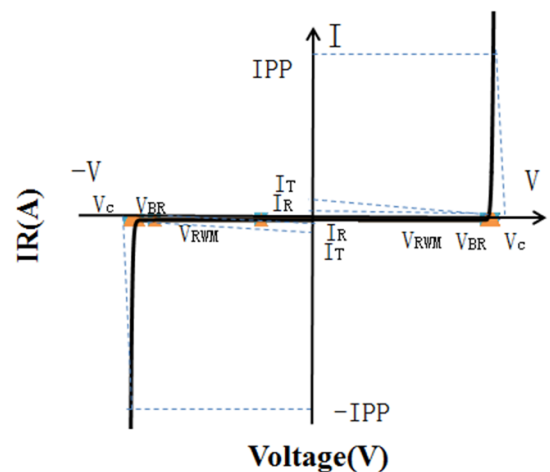
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P_{pk}	50	W
Peak Pulse Current (8/20 μs)	I_{PP}	2	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	± 10 ± 8	kV
Operating Temperature Range	T_J	-55 to $+125$	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 to $+150$	$^{\circ}\text{C}$

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

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RWM}				5.0	V
Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	6.0	7.5	8.5	V
Reverse Leakage Current	I_R	$V_{RWM} = 5.0\text{V}$			0.5	μA
Clamping Voltage	V_C	$I_{PP} = 1\text{A}$ (8 x 20 μs pulse)			12	V
Clamping Voltage	V_C	$I_{PP} = 2\text{A}$ (8 x 20 μs pulse)			20	V
Junction Capacitance	C_J	$V_R = 0\text{V}$, $f = 1\text{MHz}$		0.8	1.1	pF

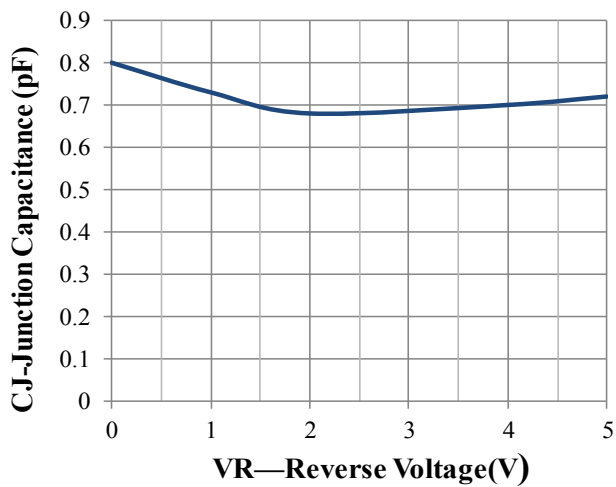
Electrical Parameters

Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_C

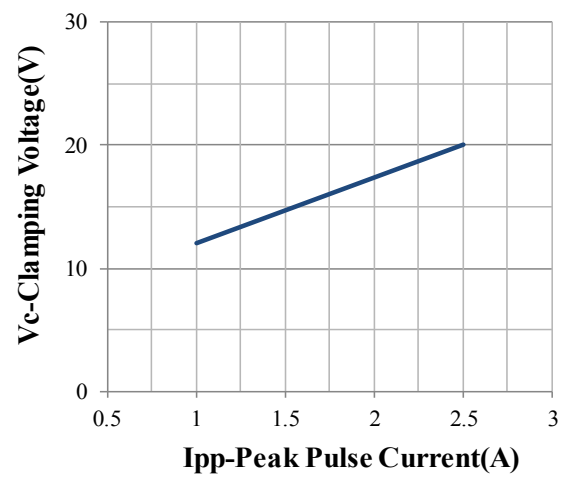




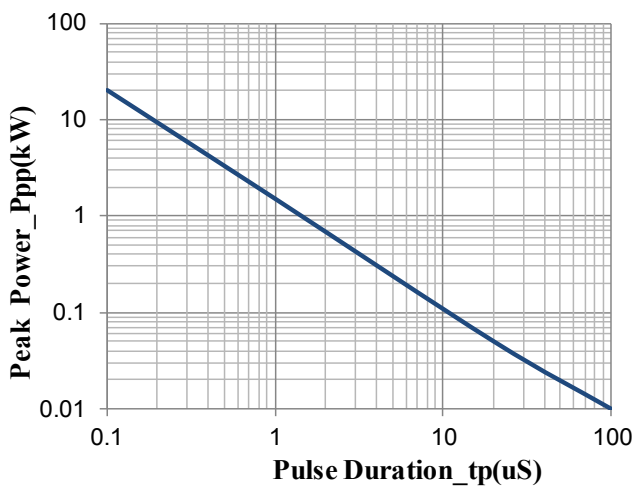
Typical Characteristics



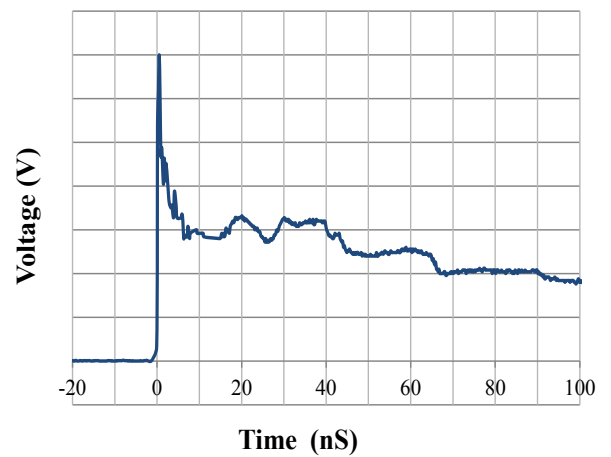
Junction Capacitance vs. Reverse Voltage



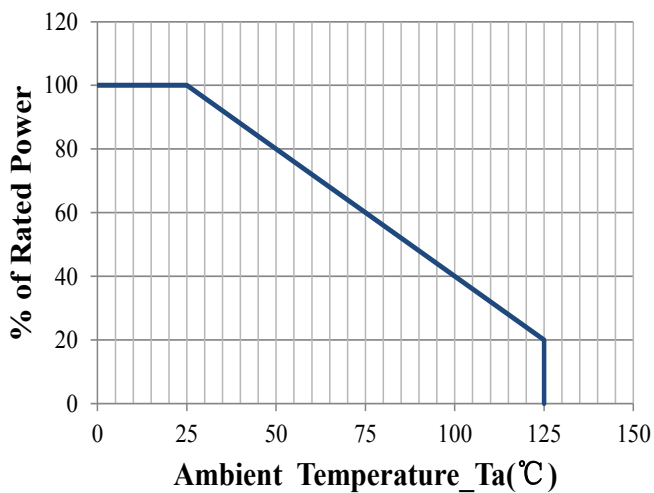
Clamping Voltage vs. Peak Pulse Current



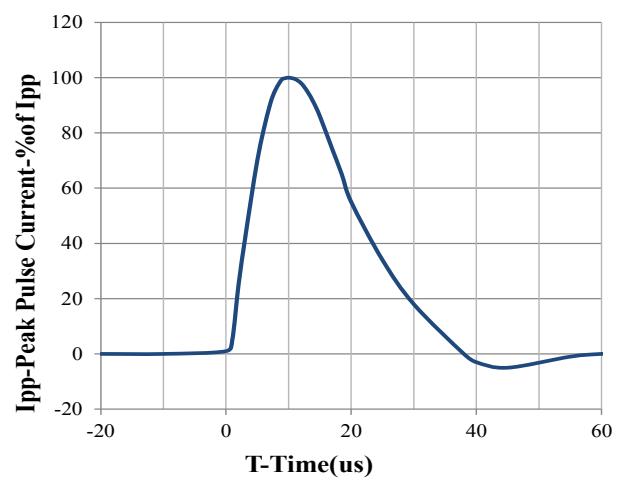
Peak Pulse Power vs. Pulse Time



IEC61000-4-2 Pulse Waveform



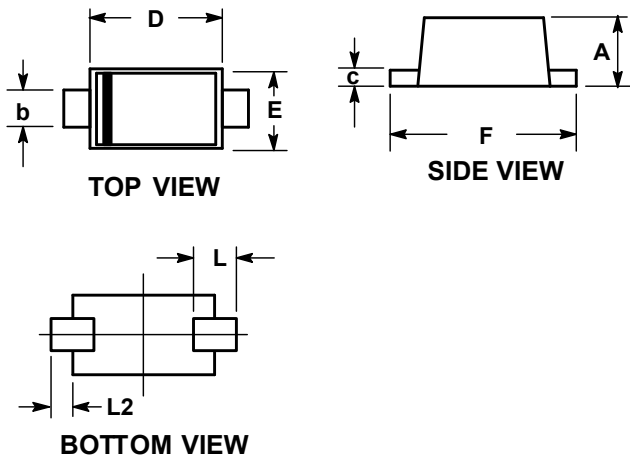
Power Derating Curve



8 X 20us Pulse Waveform



SOD-923 Outline Drawing



Sym	Dimensions					
	Millimeters			Inches		
	Min	Nom	Max	Min	Nom	Max
A	0.39	0.42	0.45	0.016	0.017	0.018
b	0.15	0.20	0.25	0.006	0.008	0.010
c	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.032	0.034
E	0.55	0.60	0.65	0.022	0.024	0.026
F	0.95	1.00	1.05	0.038	0.040	0.042
L	0.19 REF			0.007 REF		
L2	0.05	0.10	0.15	0.002	0.004	0.006