

1-Line Bi-directional TVS Diode

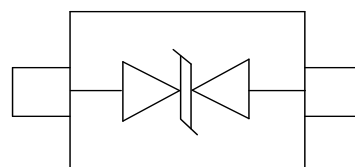
Features:

- Small SOD-323 package
 - Protects one data or power line
 - Working Voltage: 4.5V
 - High peak pulse current capability
 - Ultra low clamping voltage
 - Complies with following standards:
 - IEC 61000-4-2 (ESD) immunity test
- Air discharge: $\pm 30\text{kV}$ Contact discharge: $\pm 30\text{kV}$
- IEC61000-4-4 (EFT) 80A (5/50ns)
 - IEC61000-4-5 (Lightning) 100A (8/20 μs)
 - RoHS Compliant

SOD-323



Pin Configuration



Applications:

- Mobile Phones and Accessories
- Battery Protection
- USB VBus
- Power Line Protection
- Hand Held Portable Applications

Mechanical Characteristics

- Package: SOD-323
- Lead Finish: Sn
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 3,000 pcs
- Reel Size: 7 inch

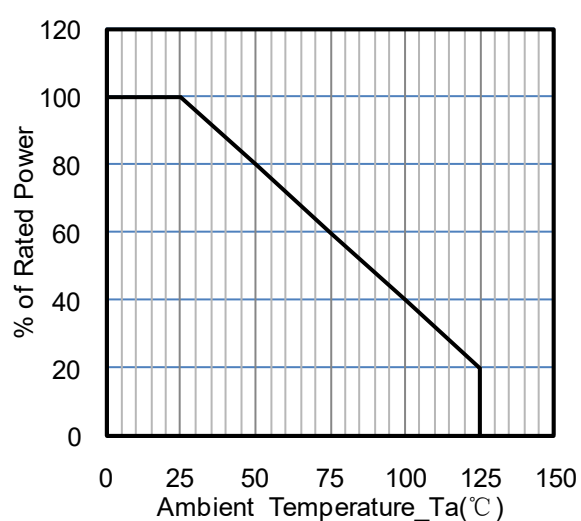
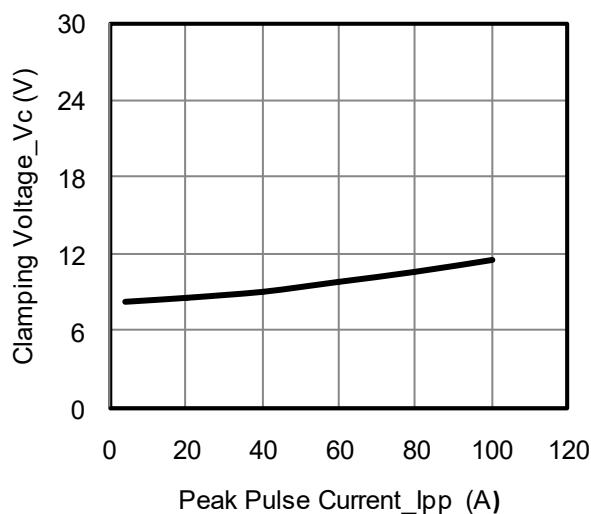
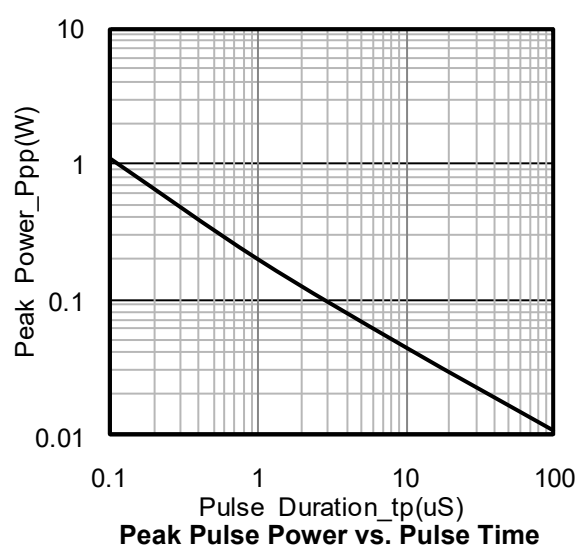
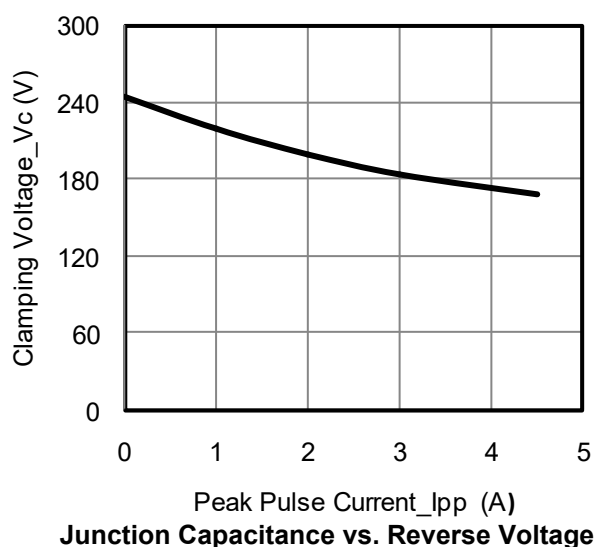
Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P _{pp}	1450	W
ESD per IEC 61000-4-2 (Air)	V _{ESD}	± 30	Kv
ESD per IEC 61000-4-2 (Contact)		± 30	
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{STJ}	-55 to +150	°C

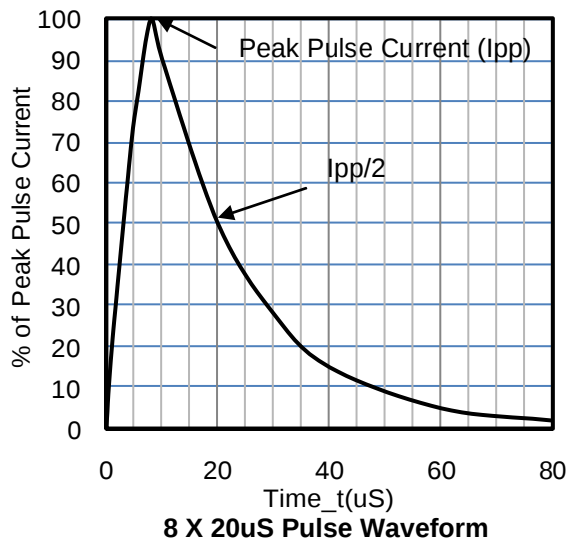
Electrical Characteristics (TA=25°C unless otherwise specified)

Part Number	Device Marking	V _{RWM} (V)	V _{BR} (V)	I _T (mA)	V _C @20A	V _C		I _R μA (Max)	C (Pf) (Typ.)
						(Max)	(@A)		
KWSD4581D3W	48D	4.5	4.7	1	9	14.5	100	1	300

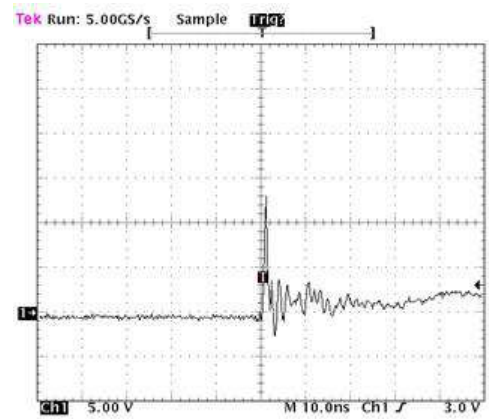
Characteristic Curves



Clamping Voltage vs. Peak Pulse Current ($t_p = 8/20\mu s$)



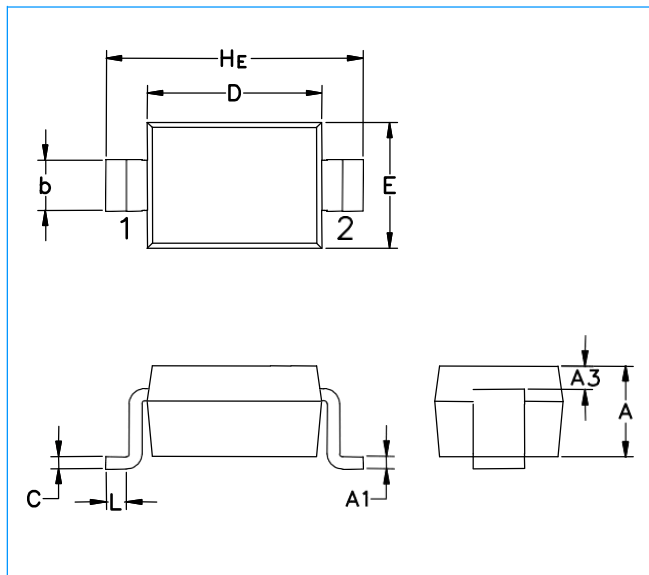
Power Derating Curve



ESD Clamping Voltage

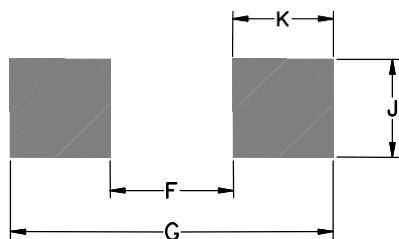
8 kV Contact per IEC61000-4-2

SOD-323 Package Outline & Dimensions



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.80	0.90	1.00	0.031	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A3	0.15 REF			0.006 REF		
b	0.25	0.32	0.40	0.010	0.012	0.016
C	0.089	0.12	0.177	0.003	0.005	0.007
D	1.60	1.70	1.80	0.062	0.066	0.070
E	1.15	1.25	1.35	0.045	0.049	0.053
L	0.08			0.003		
HE	2.30	2.50	2.70	0.090	0.098	0.105

Soldering Footprint



Symbol	Millimeters	Inches
F	1.60	0.063
G	2.85	0.112
J	0.83	0.033
K	0.63	0.025