

DWNC23T48V2B-Q ESD Protection Diode

Feature

- Bi-directional ESD protection of two lines
- 1000Watts peak pulse power ($t_p = 8/20\mu s$)
- Working voltage: 48V
- Junction capacitance: 10pF(Typ)
- Low leakage current
- Low clamping voltage
- AEC-Q101 qualified
- IEC 61000-4-2 $\pm 30kV$ contact $\pm 30kV$ air
- IEC 61000-4-5 (Lightning) 9A ($8/20\mu s$)

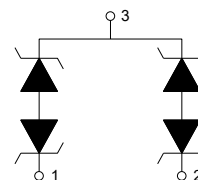
Application

- Portable electronics
- Control & monitoring systems
- Servers, notebooks, and desktop PCs
- CAN bus protection
- Automotive application
- Cellular handsets and accessories

Mechanical Data

- Package: SOT-23
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

Circuit Diagram



Ordering Information

Part Number	Package	Marking	Packing	Reel Size
DWNC23T48V2B-Q	SOT-23		3000 Tape & Reel	7 inches

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

Parameter	Symbol	Min.	Max.	Unit
Peak pulse power ($t_p=8/20\mu\text{s}$)@ 25°C	P_{pk}	-	1000	W
Peak pulse current ($t_p=8/20\mu\text{s}$)@ 25°C	I_{PP}		9	A
ESD (IEC61000-4-2 air discharge) @ 25°C	V_{ESD}	-	± 30	kV
ESD (IEC61000-4-2 contact discharge) @ 25°C	V_{ESD}	-	± 30	kV
Junction temperature	T_J	-	150	$^{\circ}\text{C}$
Operating temperature	T_{OP}	-40	125	$^{\circ}\text{C}$
Storage temperature	T_{STG}	-55	150	$^{\circ}\text{C}$
Lead temperature	T_L	-	260	$^{\circ}\text{C}$

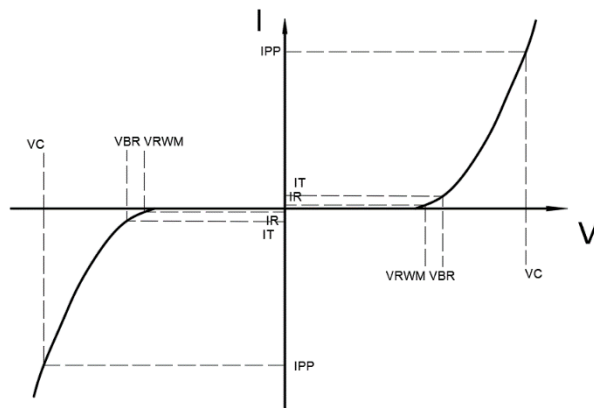
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				48	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	52			V
Reverse Leakage Current	I_R	$V_{RWM}=48\text{V}$			1.0	μA
Clamping Voltage	V_C	$I_{PP}=1\text{A}$; $t_p=8/20\mu\text{s}$		65	70	V
Clamping Voltage	V_C	$I_{PP}=9\text{A}$; $t_p=8/20\mu\text{s}$		87	95	V
Junction Capacitance	C_J	$V_R=0\text{V}$; $f=1\text{MHz}$		10	20	pF



Electrical Parameters

Symbol	Parameters
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}



Typical Characteristic

Figure1: Clamping Voltage vs. Peak Pulse Current

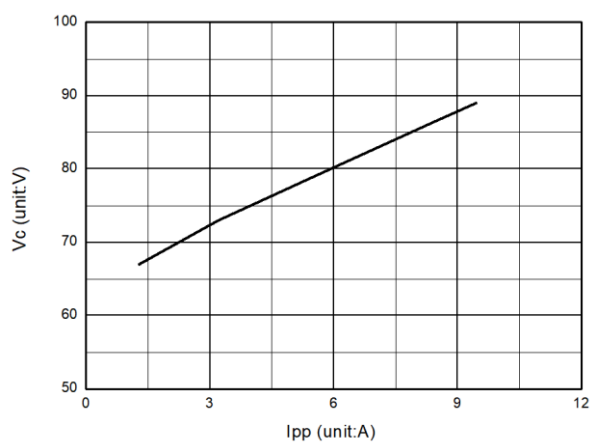


Figure2: Junction Capacitance vs. Reverse Voltage

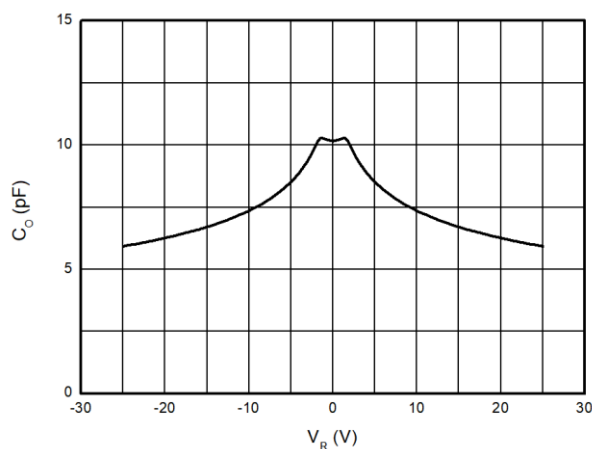


Figure3: 8 X 20us Pulse Waveform

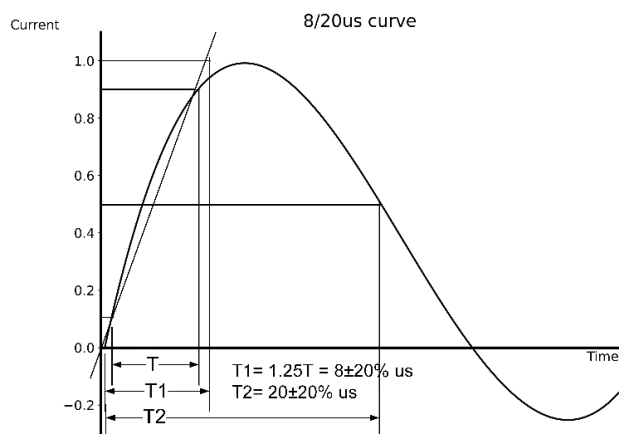
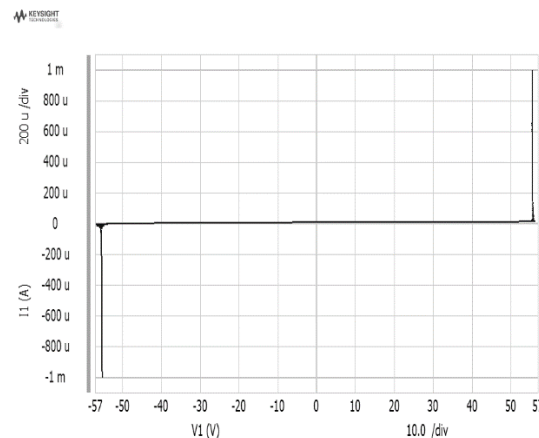


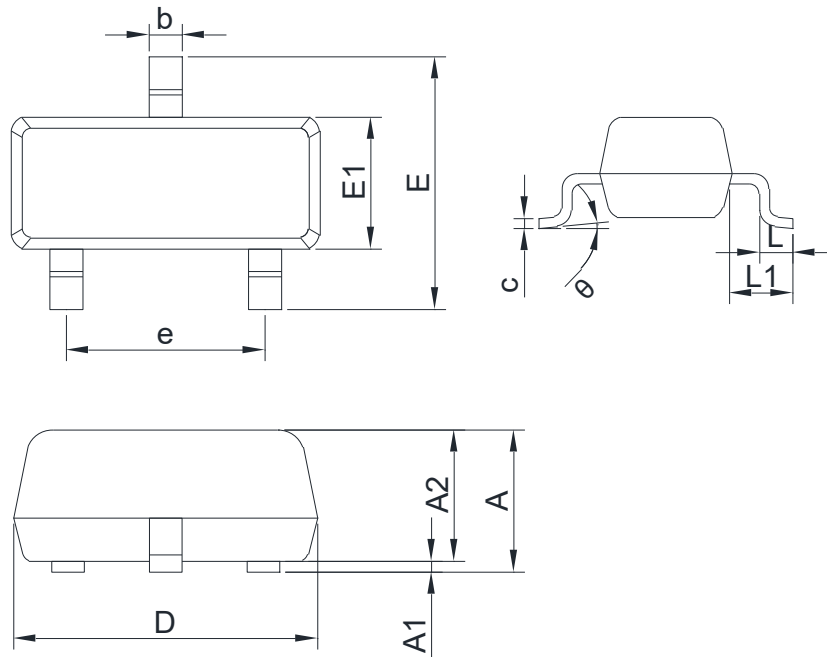
Figure4: I-V Curve





SOT-23 Package Outline Drawing

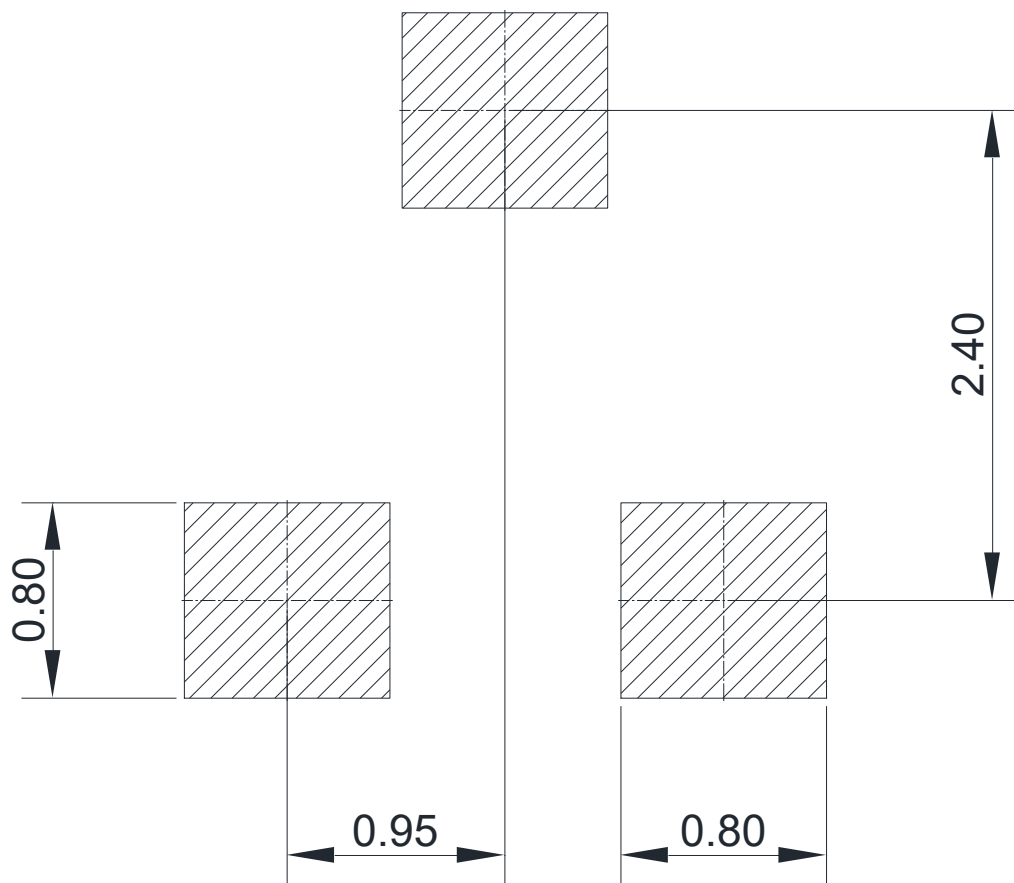
POD(Z)



COMMON DIMENSIONS CUNITS MEASURE=MILLIMETER					
SYMBOL	MIN	MAX	SYMBOL	MIN	MAX
A	0.90	1.20	E	2.25	2.55
A1	0.00	0.10	E1	1.20	1.40
A2	0.90	1.10	e	1.80	2.00
b	0.30	0.50	L	0.30	0.50
c	0.07	0.18	L1	0.475	0.625
D	2.80	3.04	θ	0°	8°



Recommended Soldering Footprint



DIMENSIONS: MILLIMETERS