



DWOS3313PLAS ESD Protection Diode

Feature

- Protects I/O line or power line with uni-directional
- 1600Watts peak pulse power ($t_p = 8/20\mu s$)
- Working voltage: 33V
- Junction Capacitance: 150pF(Typ)
- Low clamping voltage
- Low leakage current
- IEC 61000-4-2 $\pm 30kV$ contact $\pm 30kV$ air
- IEC61000-4-4(EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 40A (8/20 μs)

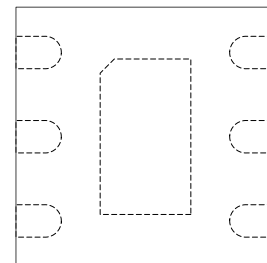
Application

- USB Vbus Industrial Electronics
- USB Type-C
- Notebooks and Tablets
- Portable Electronics
- Industrial Electronics

Mechanical Data

- Package: DFN2020-6L
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	Packing	Reel Size
DWOS3313PLAS	DFN2020-6L		3000 Tape & Reel	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}	1600	Watts
Peak Pulse Current ($t_p=8/20\mu\text{s}$) (note1)	I_{PP}	40	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	30 30	kV
Lead Soldering Temperature	T_L	260 (10seconds)	$^{\circ}\text{C}$
Junction Temperature	T_J	-55 to + 125	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55 to + 150	$^{\circ}\text{C}$

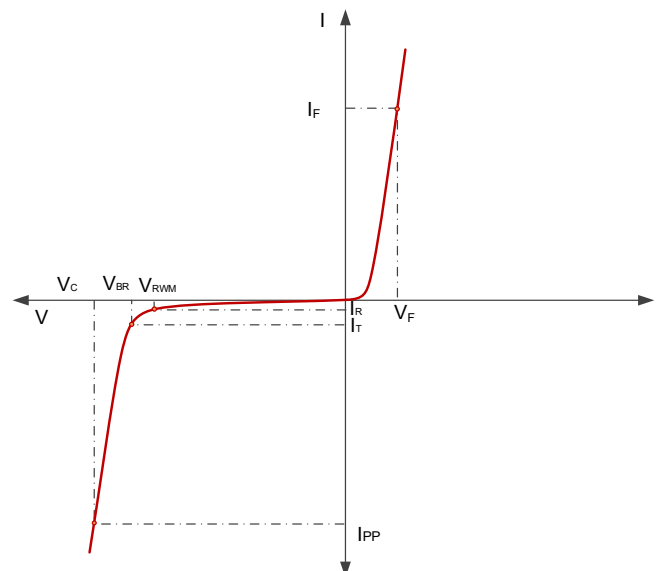
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				33	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	37			V
Reverse Leakage Current	I_R	$V_{RWM}=33\text{V}, T=25^{\circ}\text{C}$			1.0	μA
Forward Voltage	I_F	$I_T=10\text{mA}$	0.6		1.2	V
Clamping Voltage	V_C	$I_{PP}=40\text{A}, t_p=8/20\mu\text{s}$			40	V
Junction Capacitance	C_J	$V_R=0\text{V}, f=1\text{MHz}$		150	200	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

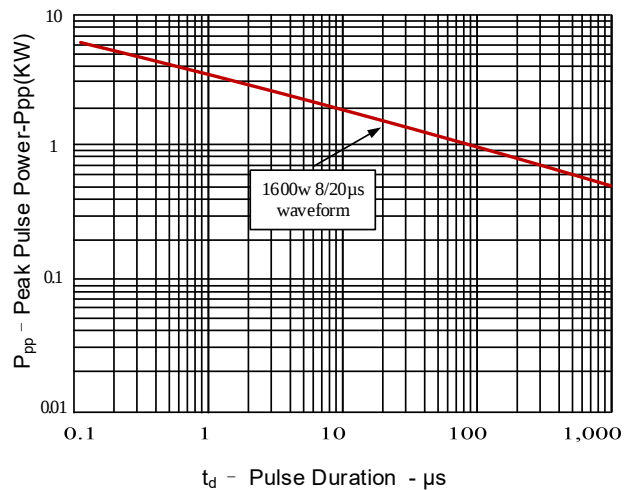


Figure 2: Power Derating Curve

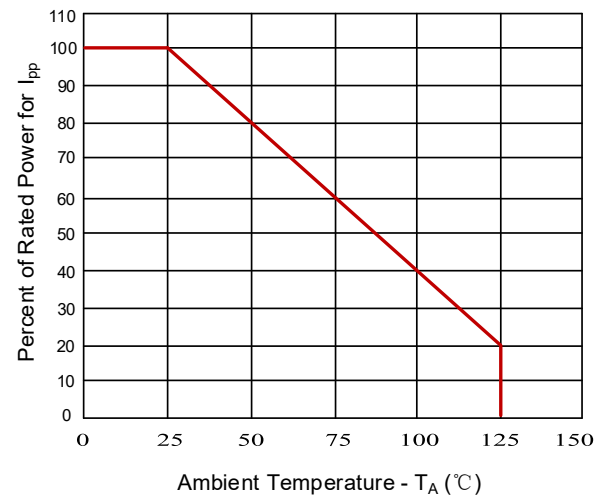


Figure3: Pulse Waveform

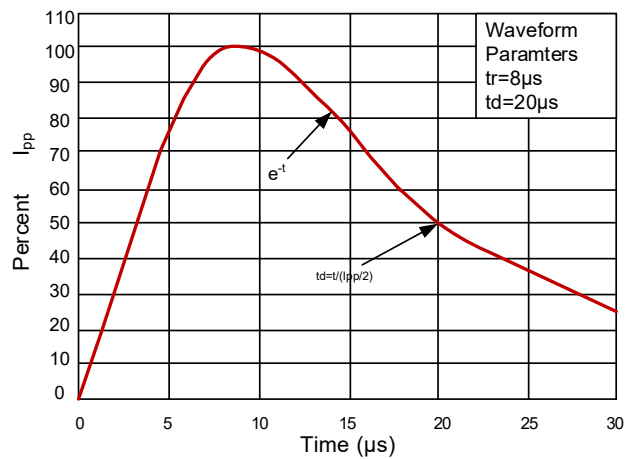
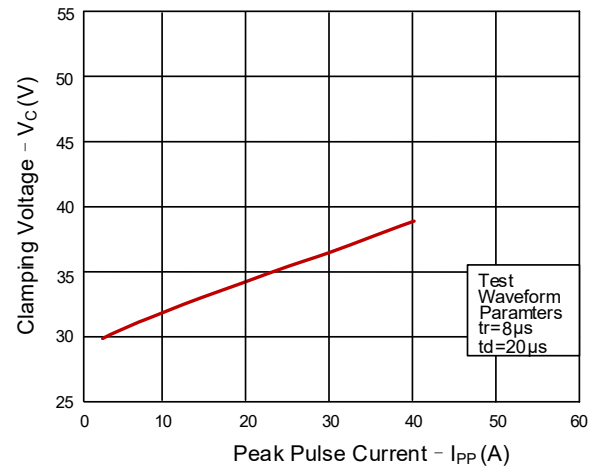
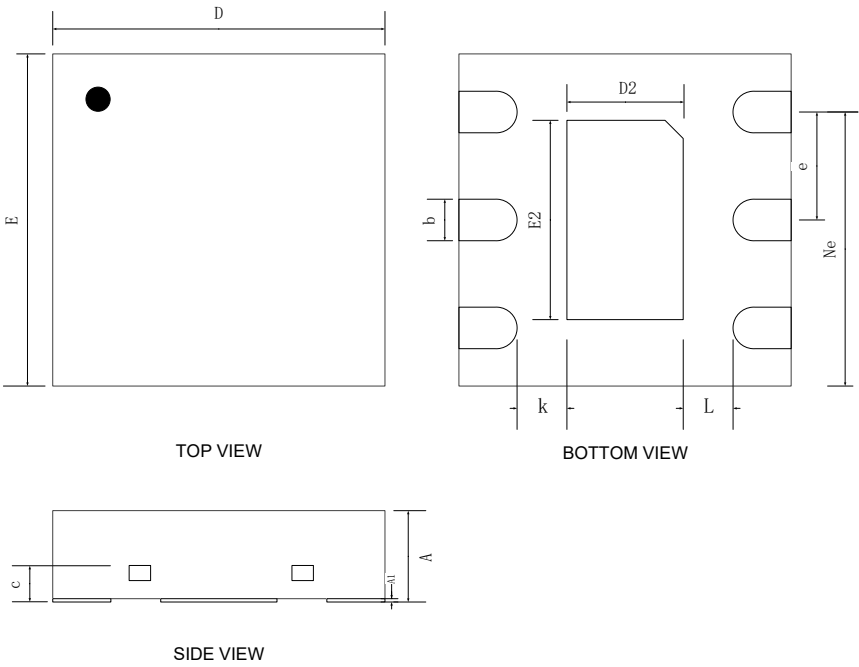


Figure 4: Clamping Voltage vs. I_pp





DFN2020-6L Outline Drawing



COMMON DIMENSION (mm)			
PKG	DFN2x2-6L		
REF.	MIN.	NOM.	MAX.
A	0.50	0.55	0.60
A1	-	0.02	0.05
b	0.20	0.25	0.30
c	0.203 REF		
D	1.90	2.00	2.10
D2	0.60	0.70	0.80
e	0.65 BSC		
E	1.90	2.00	2.10
E2	1.10	1.20	1.30
Ne	1.30 BSC		
k	0.25	0.30	0.35
L	0.30	0.35	0.40