

DWOS2413NLA ESD Protection Diode

Feature

- Uni-directional ESD protection of one line
- 5000Watts peak pulse power ($t_p = 8/20\mu s$)
- Working voltage: 24V
- Junction Capacitance: 750pF(Typ)
- Low clamping voltage
- Low leakage current
- IEC 61000-4-2 $\pm 30kV$ contact $\pm 30kV$ air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 110A (8/20 μs)

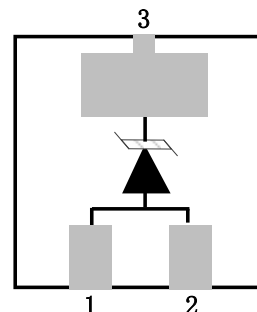
Application

- Cellular Handsets
- Portable Electronics
- Computers and Peripheral

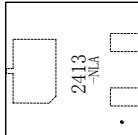
Mechanical Data

- Package: DFN2020-3L
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	Packing	Reel Size
DWOS2413NLA	DFN2020-3L		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}	5000	Watts
Peak Pulse Current ($t_p=8/20\mu\text{s}$) (note1)	I_{pp}	110	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 + 125	$^{\circ}\text{C}$

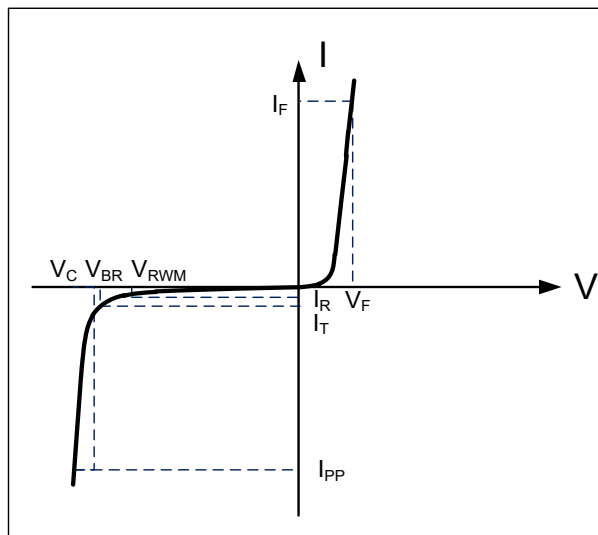
Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				24.0	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	26.5			V
Reverse Leakage Current	I_R	$V_{RWM}=24\text{V}, T=25^{\circ}\text{C}$			1	μA
Clamping Voltage	V_C	$I_{PP}=110\text{A}, t_p=8/20\mu\text{s}$ (Pin3 to Pin1+Pin2)		45		V
Junction Capacitance	C_j	$V_R = 0\text{V}, f = 1\text{MHz}$		750		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 Characteristic ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Figure 1: Peak Pulse Power vs. Pulse Time

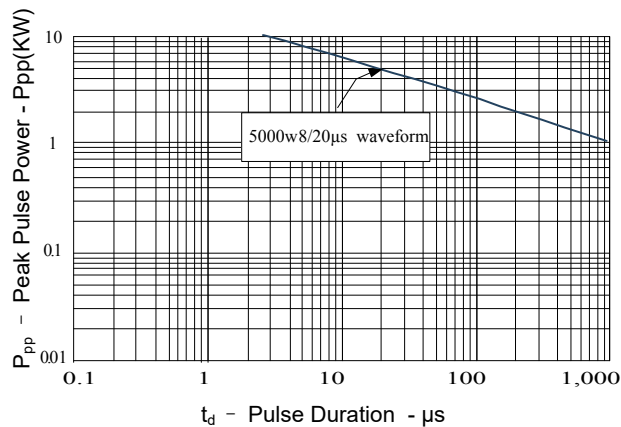


Figure 2: Power Derating Curve

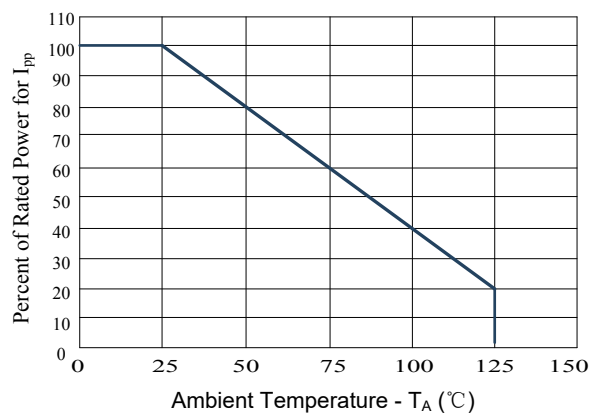


Figure3: Pulse Waveform

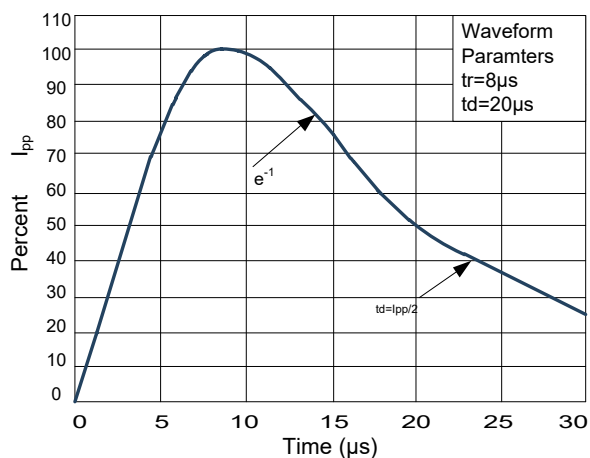
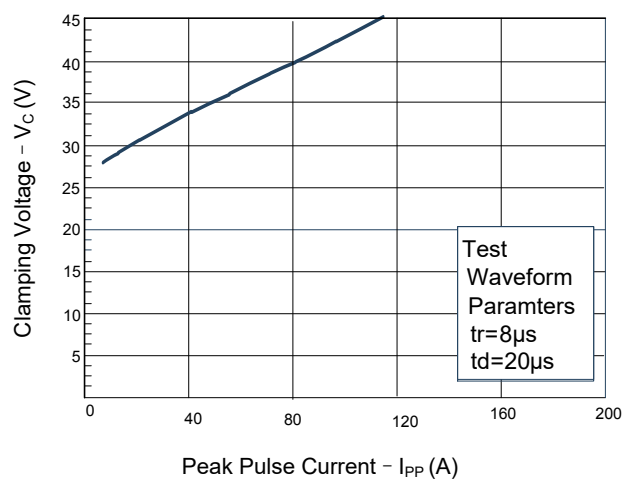
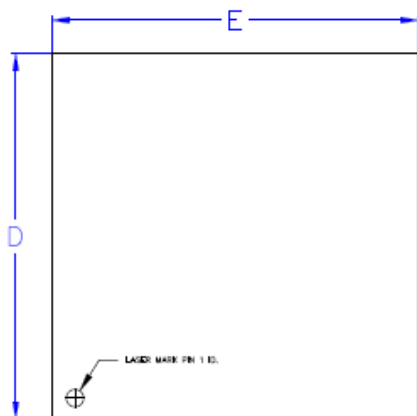


Figure 4: Clamping Voltage vs. Ipp

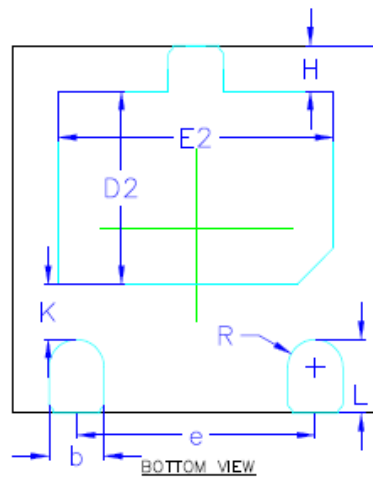




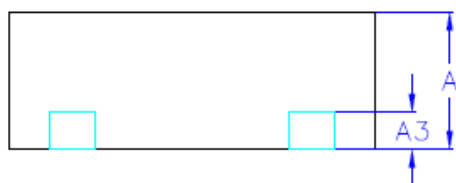
DFN2020-3L Outline Drawing



SIDE VIEW



BOTTOM VIEW



SIDE VIEW

COMMON DIMENSION (MM)			
PKG	DFN2020		
REF.	MIN.	NOM.	MAX.
A	0.527	0.552	0.577
A3	0.127 REF		
b	0.25	0.30	0.35
D	1.90	2.00	2.10
E	1.90	2.00	2.10
D2	0.95	1.05	1.15
E2	1.40	1.50	1.60
e	1.20	1.30	1.40
H	0.20	0.25	0.30
K	0.20	0.30	0.40
L	0.35	0.40	0.45
R1	0.13	—	—