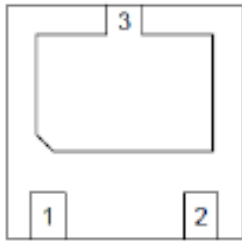
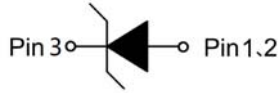


1-Line , Uni-directional , Transient Voltage Suppressor



DFN2020-3L

Features

- Ultra small package
- Stand-off voltage: 15V
- Transient protection for each line according to
IEC61000-4-2(ESD): $\pm 30\text{kV}$ (contact/air)
IEC61000-4-4 (EFT): 80A (5/50ns)
IEC61000-4-5(surge): 180 A (8/20ns)
- Low clamping voltage
- RoHS Compliant

Applications

- Power Management
- Power Supply Protection
- Battery Contacts

Mechanical Characteristics

- Package: DFN2020-3L
- Case Material: "Green" Molding Compound.
- Marking Information: See Below

5117
V15

■Definitions of electrical characteristics

V_F Forward voltage

I_F Forward current

V_{FC} Forward clamping voltage

I_{PP} Peak pulse current

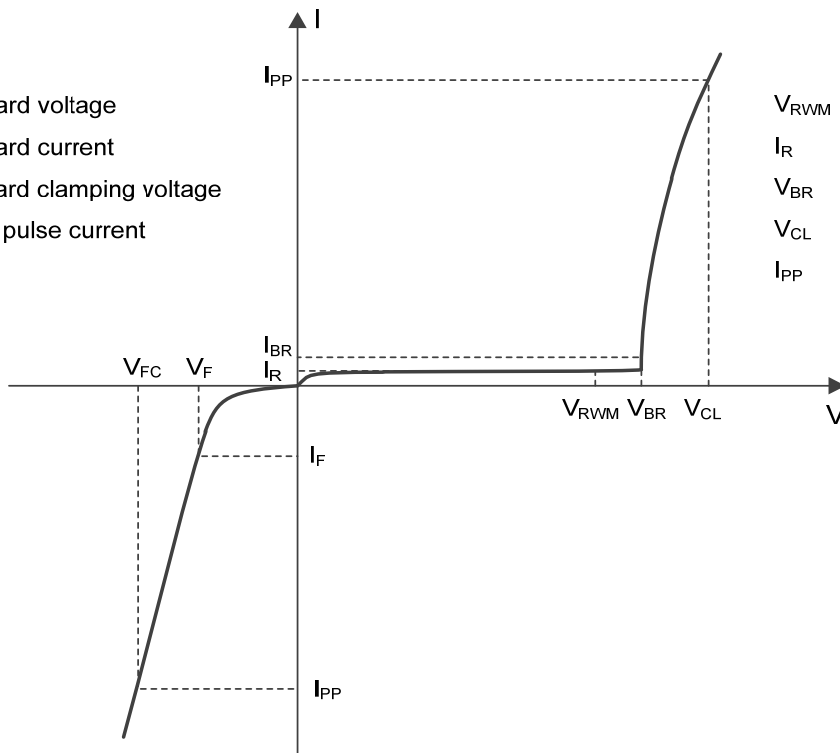
V_{RWM} Reverse stand-off voltage

I_R Reverse leakage current

V_{BR} Reverse breakdown voltage

V_{CL} Clamping voltage

I_{PP} Peak pulse current





ESD15VP4

■Absolute Maximum Ratings (Ta=25°C unless otherwise specified)

PARAMETER	SYMBOL	VALUE	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	5400	W
Peak pulse Current ($t_p = 8/20\mu s$)	I_{PP}	180	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 30	KV
ESD according to IEC61000-4-2 contact discharge		± 30	KV
Junction temperature	T_J	-55~125	°C
Storage Temperature Range	T_{STG}	-55~150	°C

■Electrical Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				15
Reverse leakage current	I_R	uA	$V_{RWM} = 15V$,			1
Reverse breakdown voltage	$V_{(BR)}$	V	$I_T = 1mA$,	15.5	18	19
Clamping voltage	V_{CL}	V	$I_{PP} = 180A$, $t_p = 8/20\mu s$		28	30
Junction capacitance	CJ	pF	$V_R = 0V$, $f = 1MHz$		1200	1450

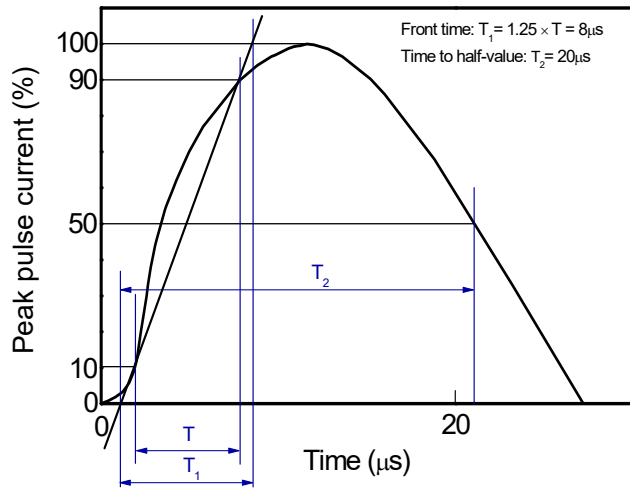
■Ordering Information (Example)

PREFERED P/N	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD15VP4	Approximate 10	3000	30000	120000	Tape & reel

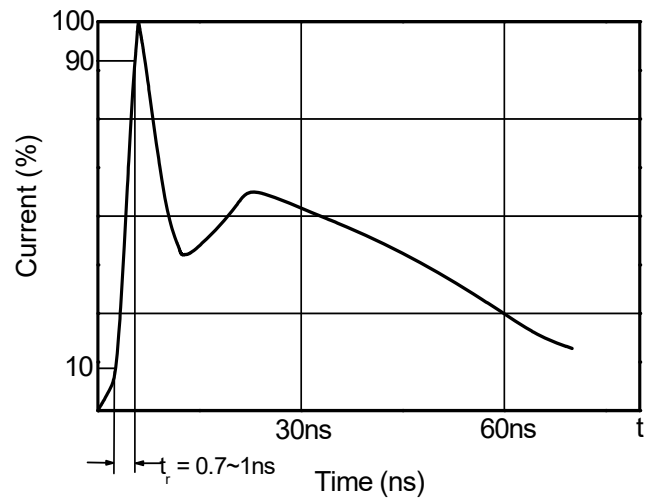


■ Typical Performance Characteristics ($T_A=25^\circ\text{C}$ unless otherwise Specified)

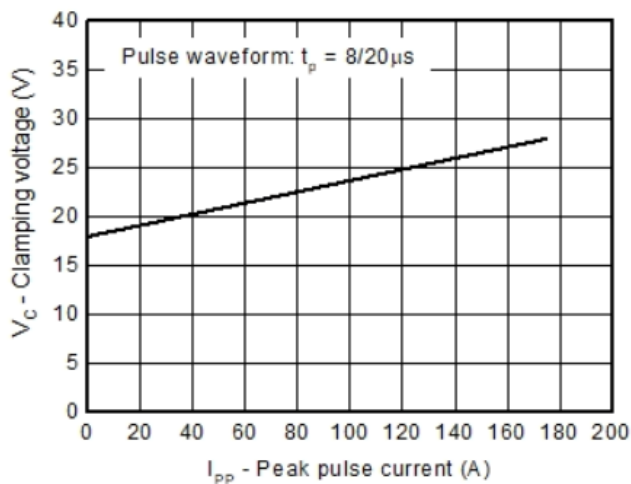
8/20 μs waveform per IEC61000-4-5



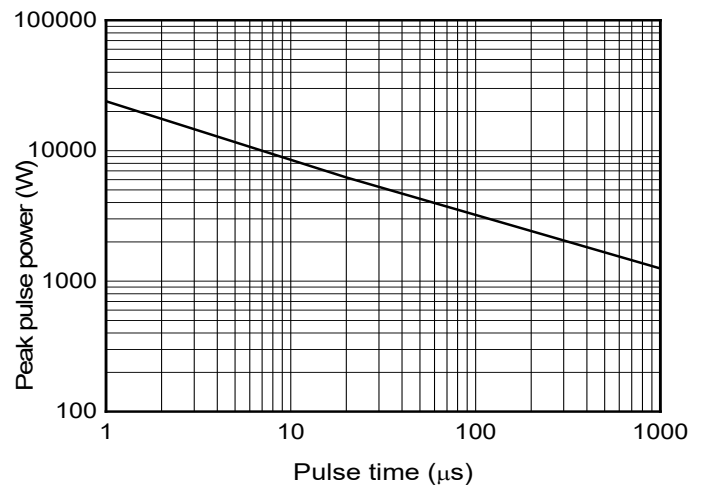
Contact discharge current waveform per IEC61000-4-2



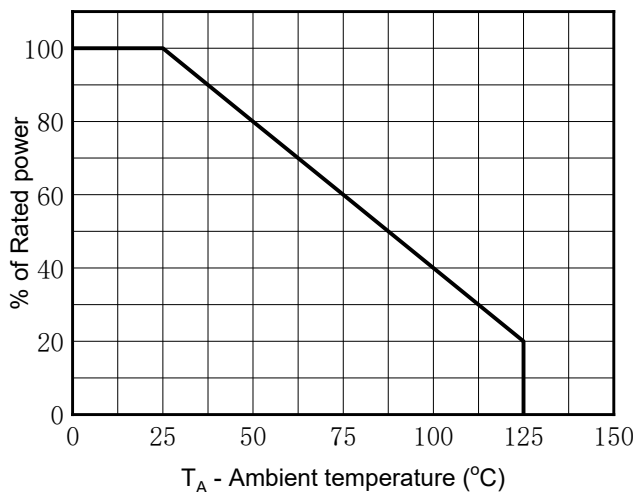
Clamping voltage vs. Peak pulse current



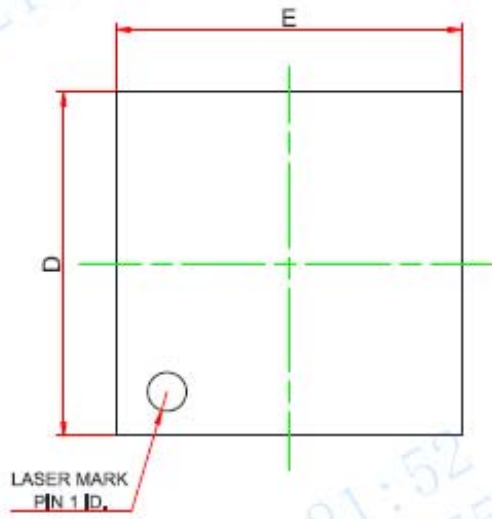
Non-repetitive peak pulse power vs. Pulse time



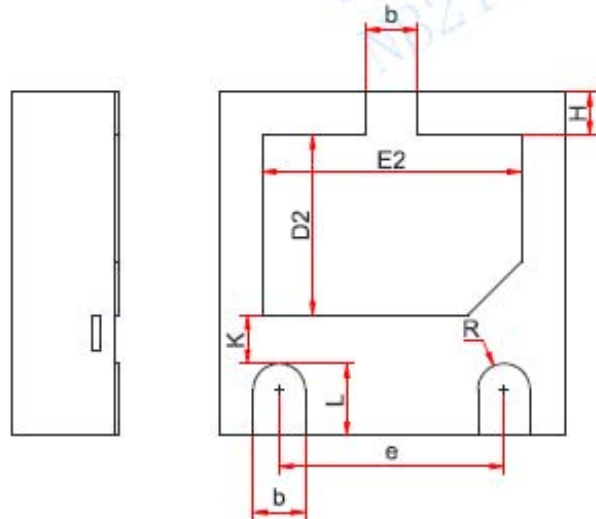
Power derating vs. Ambient temperature



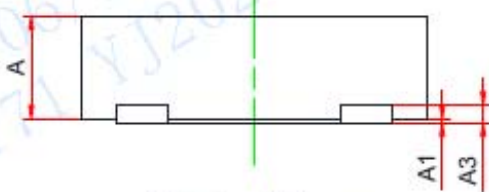
■Outline Dimensions



Top View

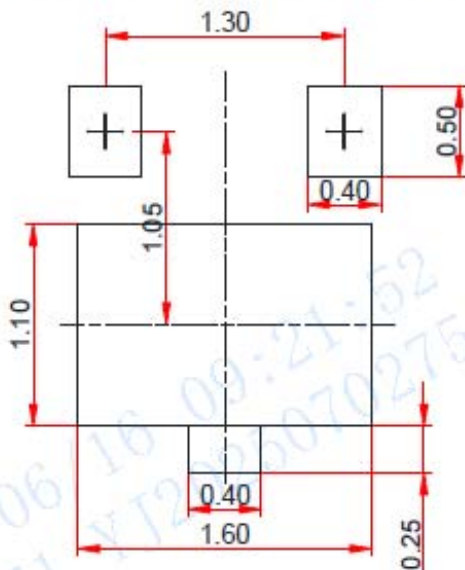


Bottom View



Side View

Recommended land pattern (Unit: mm)



Symbol	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	0.50	0.60	0.65
A1	0.00	0.02	0.05
A3	0.15 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
R	0.13	-	-

Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.



Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.21yangjie.com](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.