



1. Features

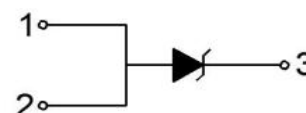
DFN2020-3L

- 3-pin lead-less package
- Junction capacitance (Max value: 680pF)
- Peak Pulse current (8/20μs) Max:280A
- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- Low clamping voltage
- Low leakage current
- Working voltages:4.5V
- RoHS Compliant



2. Mechanical Data

- Case:Molded Plastic,DFN2020-3L.
- Epoxy:UL 94V-0 rate flame retardant.
- Terminals:Plated Leads Solderable per MIL-STD-750, Method-2026.
- Marking: .93P
- Marking:marked on body.



3. Maximum Ratings

Electrical Characteristics Rating at 25°C ambient temperature unless otherwise specified.

Characteristic	Symbol	Value	Unit
Peak Pulse Power (tp=8/20μs waveform)	P _{PP}	4200	W
Peak Pulse Current (8/20μs)	I _{PP}	280	A
ESD per IEC 61000-4-2 (Air)	V _{ESD}	±30	KV
ESD per IEC 61000-4-2 (Contact)		±30	
Junction Temperature	T _j	-55~+125	°C
Storage Temperature	T _{stg}	-55~+150	°C

4. Electrical Characteristics (T_A=25°C unless otherwise noted)

Characteristics	Symbol	Condition	Min	TYP	Max	Unit
Reverse Working Voltage	V _{RWM}		-	-	4.5	V
Reverse Breakdown Voltage	V _{BR}	I _R = 1mA	4.8	-	7	V
Reverse Leakage Current	I _R	V _R =4.5V	-	-	0.2	uA
Clamping voltage	V _C	I _{PP} = 50A, T _P =8/20us	-	-	7	V
Clamping voltage	V _C	I _{PP} = 280A, T _P =8/20us	-	-	15	V
Junction capacitance	C _J	V _R =0V, f=1MHz	-	680	1300	pF



5. Rating And Characteristic Curves

FIG1: Power rating derating curve

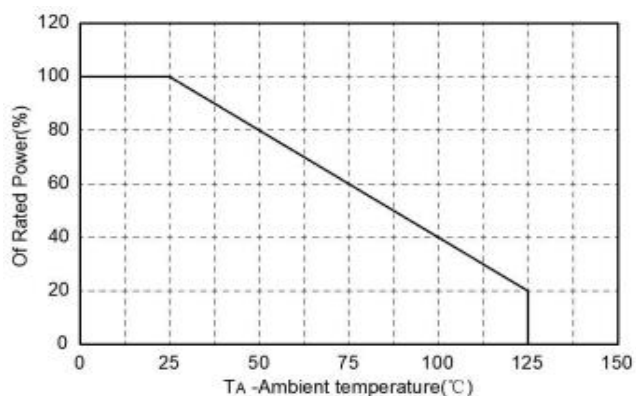


FIG2: pulse Waveform

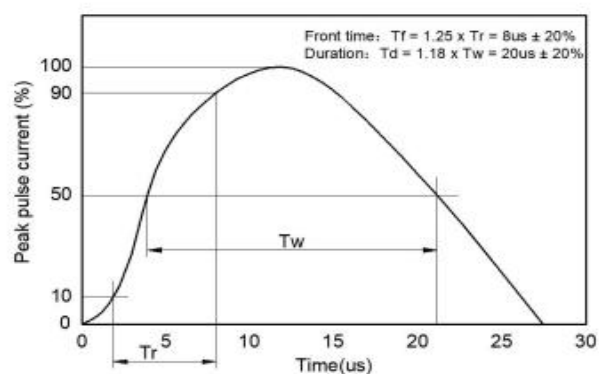


FIG3: Capacitance between teminals charateristics

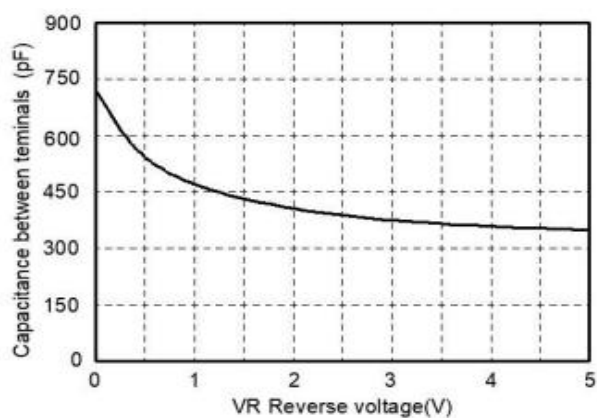
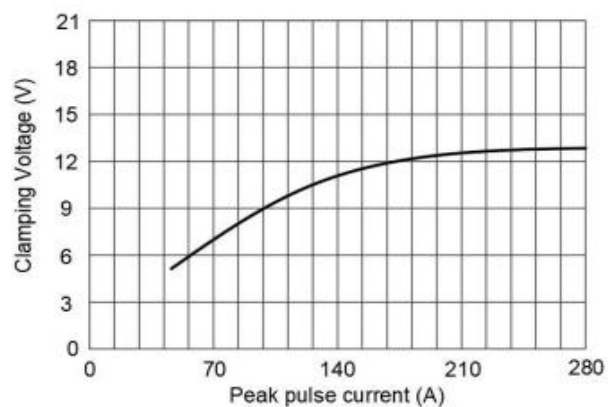
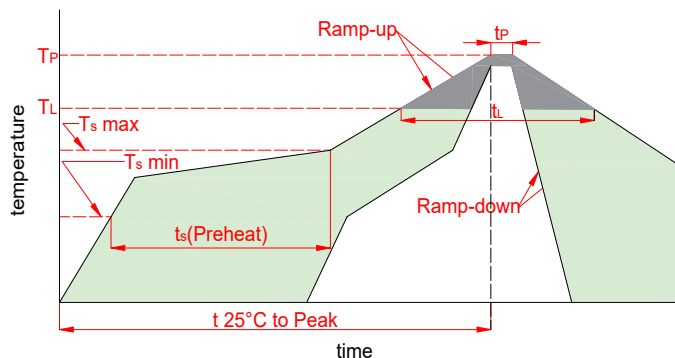


FIG4: Clamping Voltage vs. Peak Pulse Current



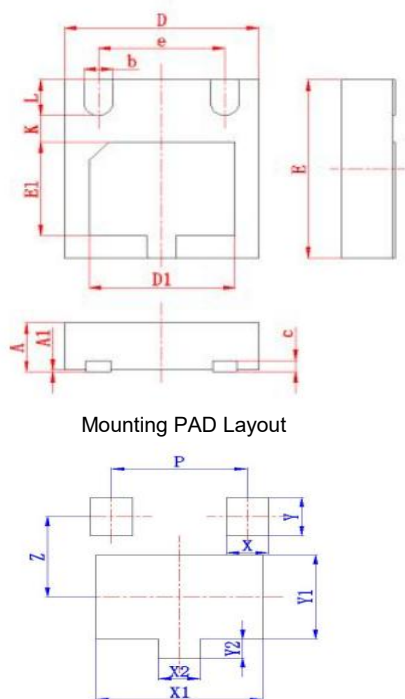


6. Soldering Parameters



Reflow Condition		Lead-free
Pre Heat	Temp. min(T_s (min))	150℃
	Temp. max(T_s (min))	200℃
	Time(min to max)(t_s)	60~120s
Aver. ramp up rate(Liquidus Temp.)(T_L)to peak		3℃/s max
T_s (max) to T_L -Ramp-up Rate		3℃/s max
Reflow	Temp.(T_L)(Liquidus)	217℃
	Temp.(t_L)(Liquidus)	60~150s
Peak Temp.(T_P)		260 ^{+0/-5} ℃
Time within actual peak Temp.(t_p)		30s max
Ramp-down Rate		6℃/s max
Time 25℃ to peak Tempe.(T_P)		8 minutes max
Do not exceed		260℃

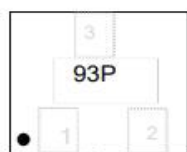
7. Dimensions



Symbol	Inches		Millimeters	
	Min	Max	Min	Max
A	0.020	0.024	0.50	0.60
A1	0.000	0.002	0.00	0.05
D	0.075	0.083	1.90	2.10
D1	0.055	0.063	1.40	1.60
E	0.075	0.083	1.90	2.10
E1	0.037	0.045	0.95	1.15
K	0.012		0.30	
e	0.051		1.30	
c	0.005		0.13	
b	0.010	0.014	0.25	0.35
L	0.014	0.018	0.35	0.45
X	0.016		0.40	
X1	0.063		1.60	
X2	0.016		0.40	
Y	0.020		0.50	
Y1	0.043		1.10	
Y2	0.010		0.25	
P	0.051		1.30	
Z	0.043		1.10	

8. Part Marking System

Cathode Band



9. Package Information

Package	Part Number	Marking Code	Quantity(pcs)
DFN2020-3L	ESDSHLC4V501P4	.93P	3000



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