



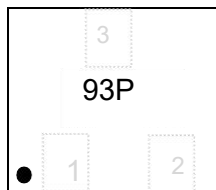
Features

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

Applications

- Power Management
- Industrial Application
- Power Supply Protection

Marking Information

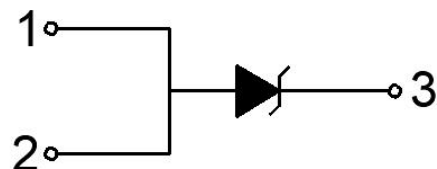
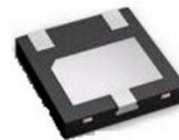


93P=Marking Code

Mechanical Characteristics

- Package: DFN2020-3L
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound.
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Tape Reel :3000pcs

Appearance & Symbol





Absolute Maximum Ratings (T=25°C, RH=45%-75%, unless otherwise noted)

Parameters	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) ESD per IEC 61000-4-2 (Contact)	V _{ESD}	±30 ±30	KV
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

Electrical Characteristics (T=25°C, RH=45%-75%, unless otherwise noted)

Parameter	Symbol	Test 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

Typical Characteristics

FIG1: Power rating derating curve

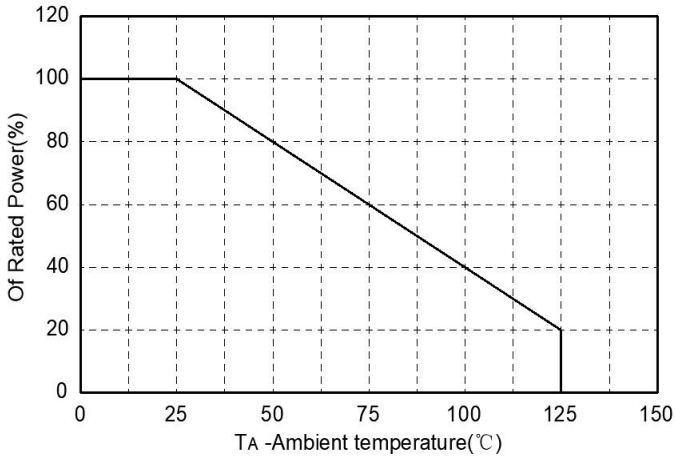


FIG2: pulse Waveform

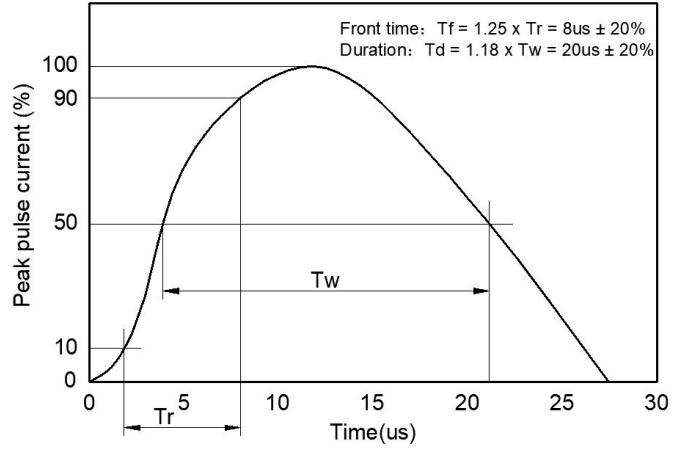


FIG3: Capacitance between terminals characteristics

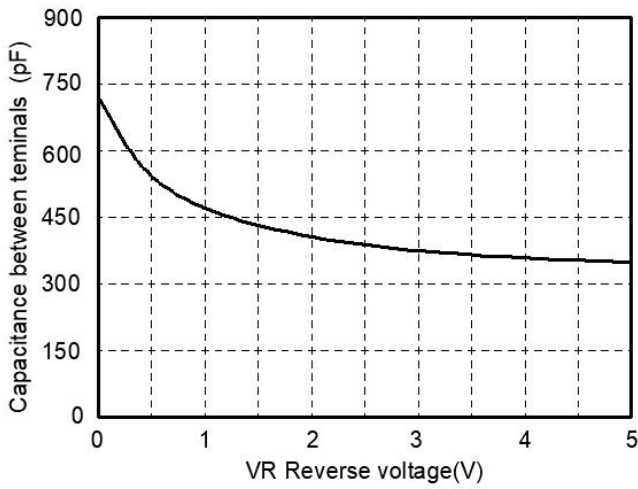
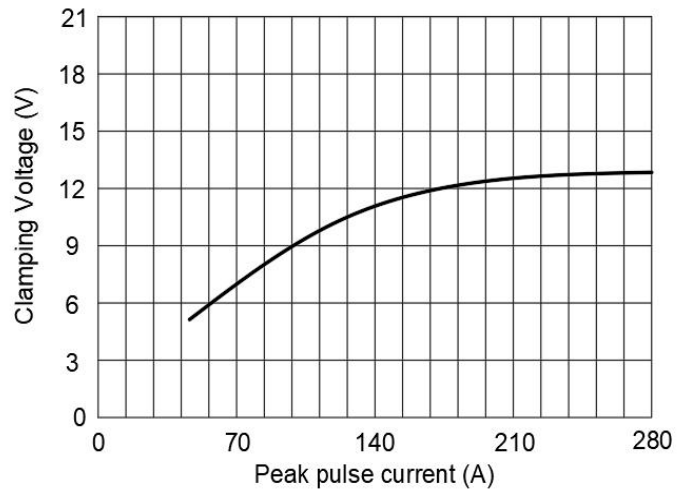
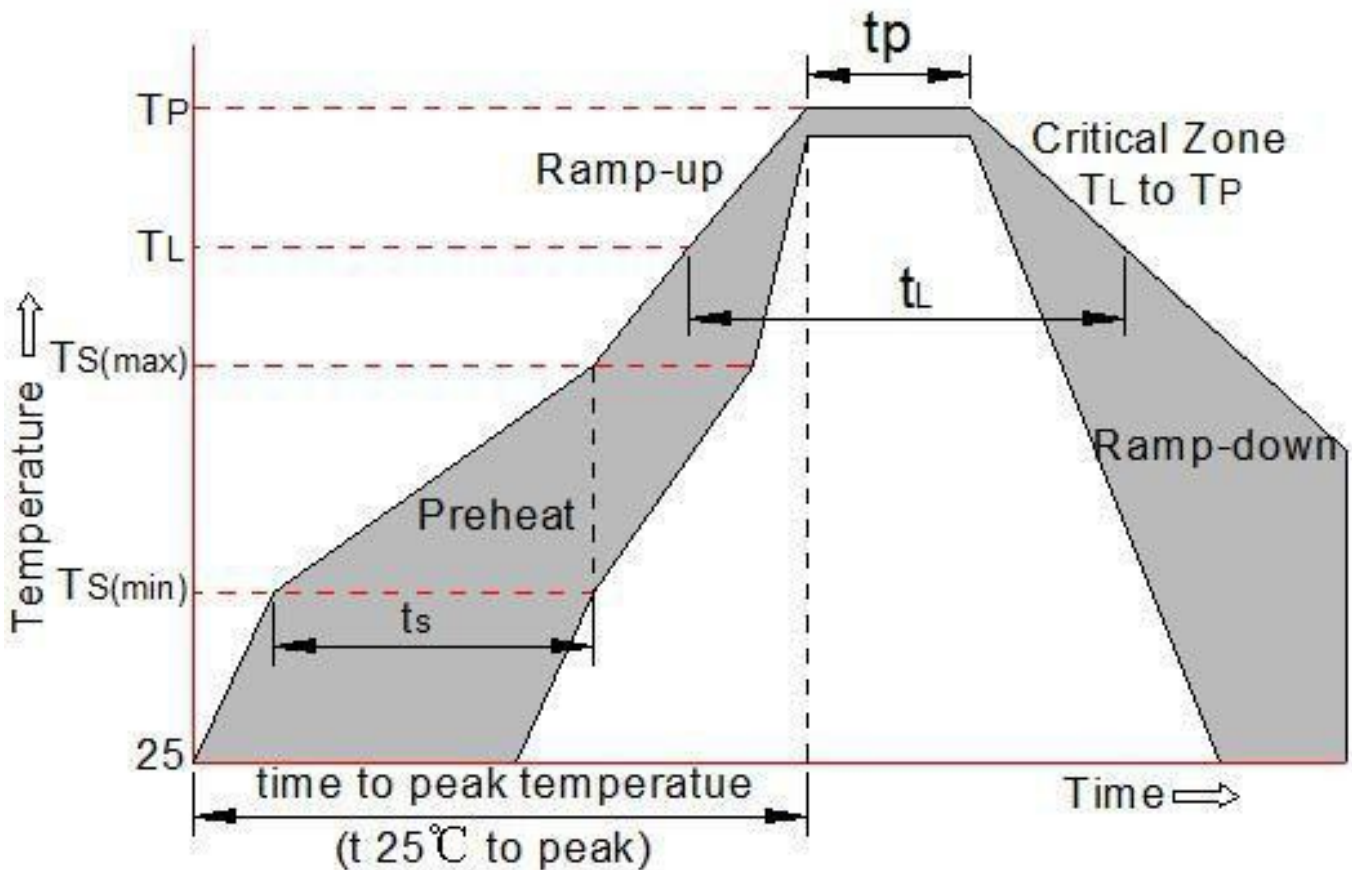


FIG4: Clamping Voltage vs. Peak Pulse Current

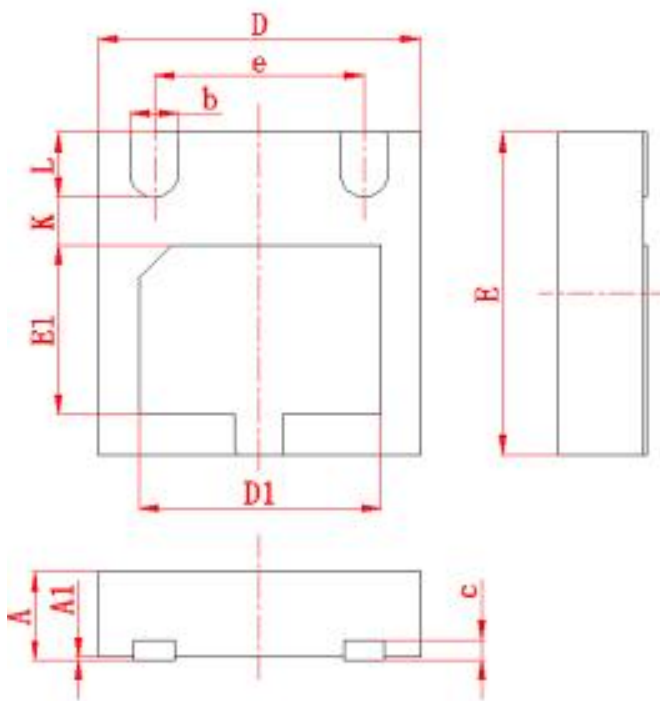


Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L) (Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_p)		8 min. Max
Do not exceed		+260°C

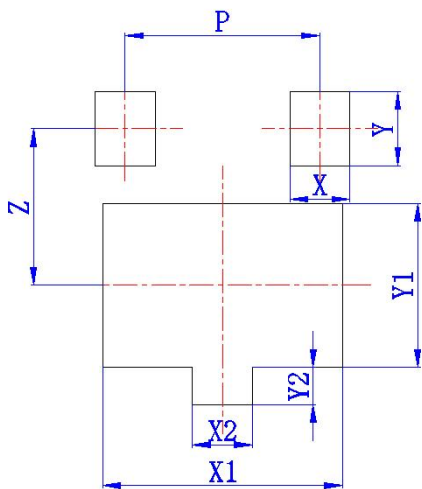


Package mechanical data



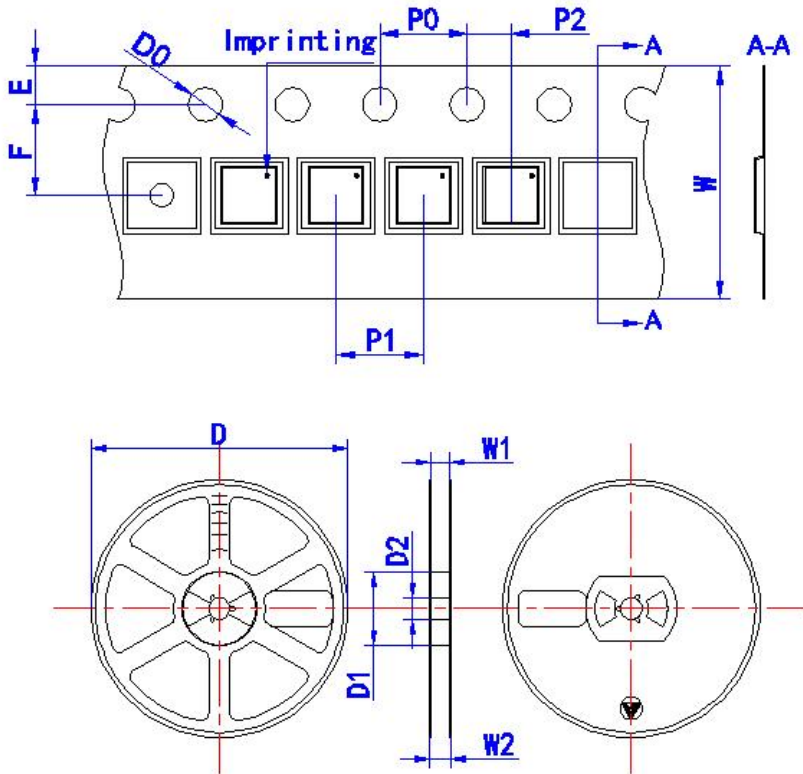
Symbol	Millimeters	
	min	max
A	0.50	0.60
A1	0	0.05
D	1.9	2.1
D1	1.4	1.6
E	1.9	2.1
E1	0.95	1.15
K	(0.3)	
e	(1.3)	
c	(0.127)	
b	0.25	0.35
L	0.35	0.45

Suggested Land Pattern



Symbol	Dimension in Millimeters
	Typ
X	0.4
X1	1.6
X2	0.4
Y	0.5
Y1	1.1
Y2	0.25
P	1.3
Z	1.1

Tape & reel specification - DFN2020-3L



Symbol	Dimension in Millimeters
Tape	
D0	1.50+0.10/-0.00
E	1.75±0.10
F	3.50±0.10
P0	4.00±0.10
P1	4.00±0.10
P2	2.00±0.10
W	8.00+0.3/-0.1
Reel	
D	178.0±2.00
D1	54.40±1.00
D2	13.00±1.00
W1	9.50±1.00
W2	12.30±1.00