

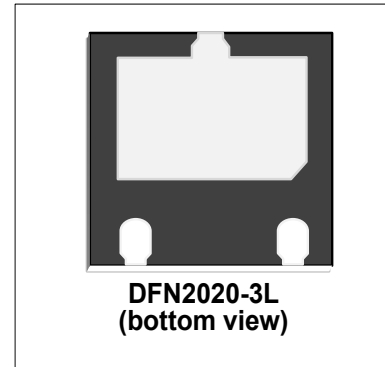


Features

- 3900 Watts Peak Power ($t_p = 8/20\mu s$)
- Working Voltage: 4.5V
- Excellent Clamping Capability
- Low Inductance
- Low profile package

IEC Compatibility (EN61000-4)

- IEC 61000-4-2 (ESD) $\pm 30kV$ (air), $\pm 30kV$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 260A (8/20 μs)



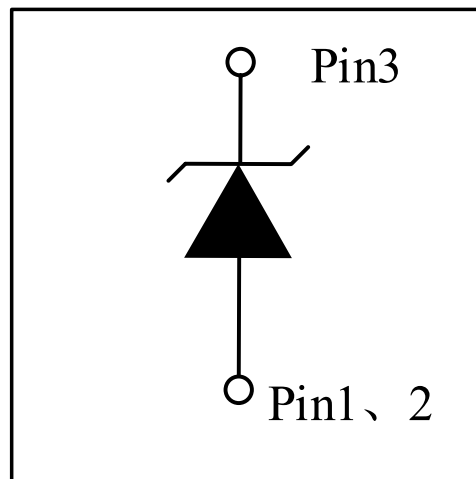
Mechanical Characteristics

- DFN2020-3L package
- Marking : Marking Code
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant

Applications

- I/O Interfaces
- Power lines
- Automotive and Telecommunication
- Computer & Consumer Electronics
- Industrial Electronics
- Microcontroller Input Protection

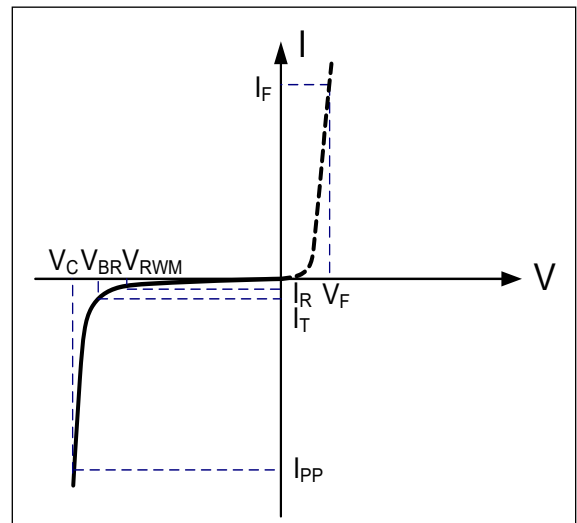
PIN Configuration



Absolute Maximum Rating			
Rating	Symbol	Value	Units
Peak Pulse Power ($t_p = 8/20\mu s$)	P_{PP}	3900	Watts
Peak Pulse Current ($t_p = 8/20\mu s$)	I_{PP}	260	A
Operating Temperature	T_J	-55 to + 125	°C
Storage Temperature	T_{STG}	-55 to +150	°C

Electrical Parameters (T=25°C)

Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Reverse Stand-Off Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical Characteristics

DW4.5P4N3-S						
Parameter	Symbol	Conditions	Minimum	Typical	Maximum	Units
Reverse Stand-Off Voltage	V_{RWM}				4.5	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1mA$	5		7	V
Reverse Leakage Current	I_R	$V_{RWM}=4.5V, T=25^\circ C$			500	nA
Forward Voltage	V_F	$I_F=10mA$	0.6		1.0	V
Clamping Voltage ¹	V_C	$I_{PP}=260A, t_p=8/20\mu s$		10.5	15	V
Dynamic Resistance ^{2,3}	R_{DYN}	$TLP=0.2/100ns$		0.03		Ω
ESD Clamping Voltage ¹	V_C	$I_{PP} = 4A, t_p = 0.2/100ns (TLP)$		6.2		V
ESD Clamping Voltage ¹	V_C	$I_{PP} = 16A, t_p = 0.2/100ns (TLP)$		6.5		V
Junction Capacitance	C_j	$V_R=0V, f=1MHz$		3800	4500	pF

Note: 1. Measured from pin 3 to pin 1 & pin 2;

2. TLP Setting : $t_p=100ns, t_r=0.2ns, I_{TLP}$ and V_{TLP} sample window: $t_1=70ns$ to $t_2=90ns$;

3. Dynamic resistance calculated from $I_{PP}=4A$ to $I_{PP}=16A$ using "Best Fit".

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Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

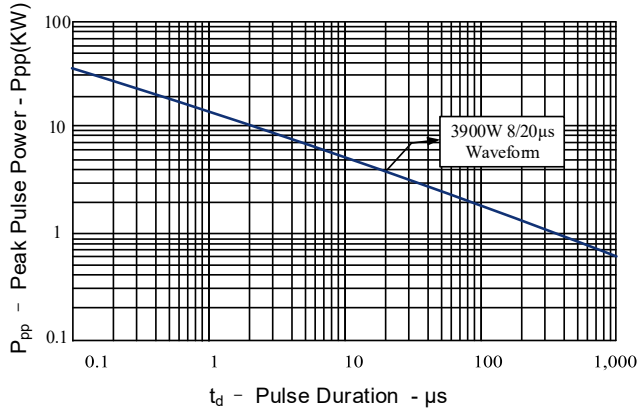


Figure 2: Power Derating Curve

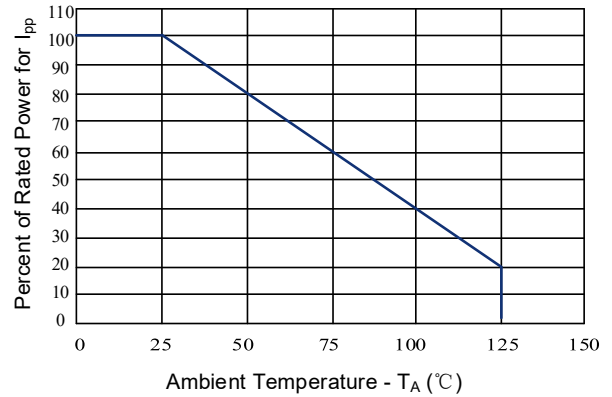


Figure 3: Clamping Voltage vs. Peak Pulse Current

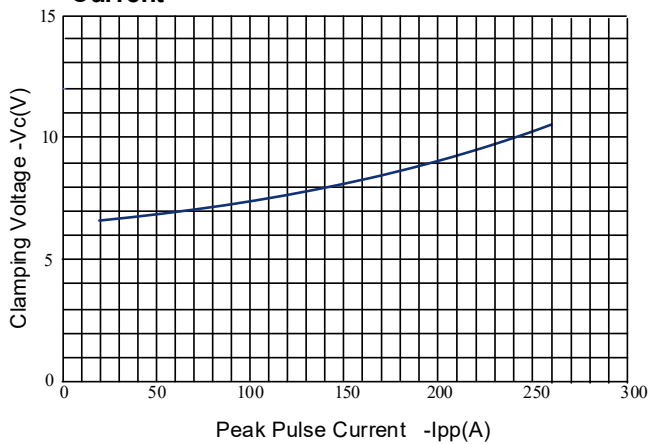


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

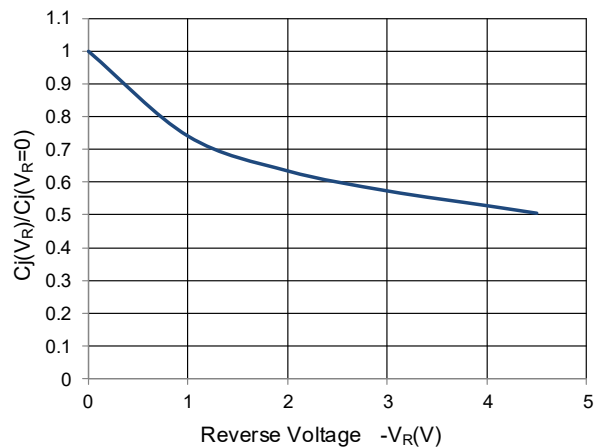


Figure 5: 8/20μs Pulse Waveform

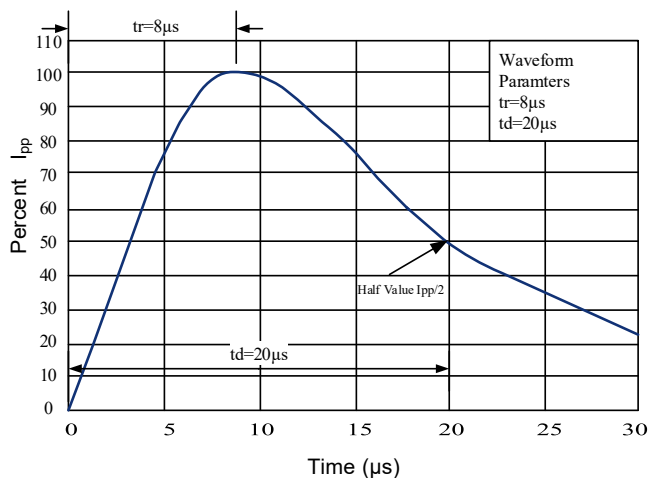
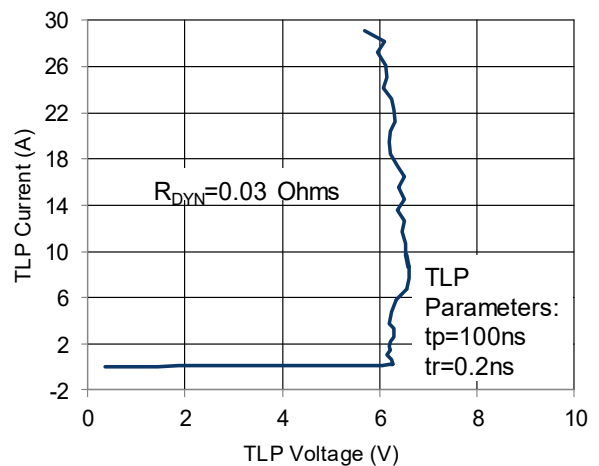


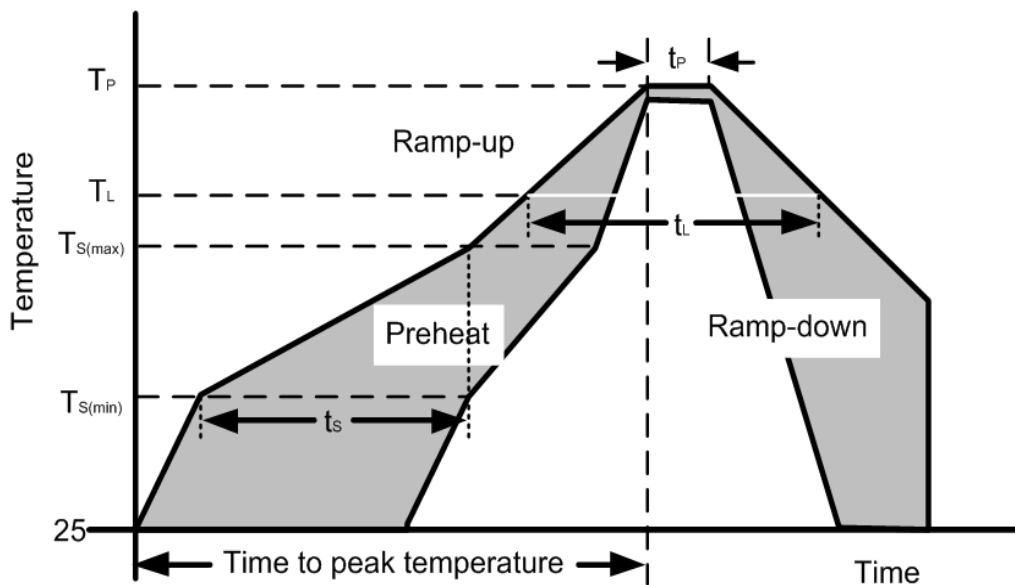
Figure 6: TLP I-V Curve



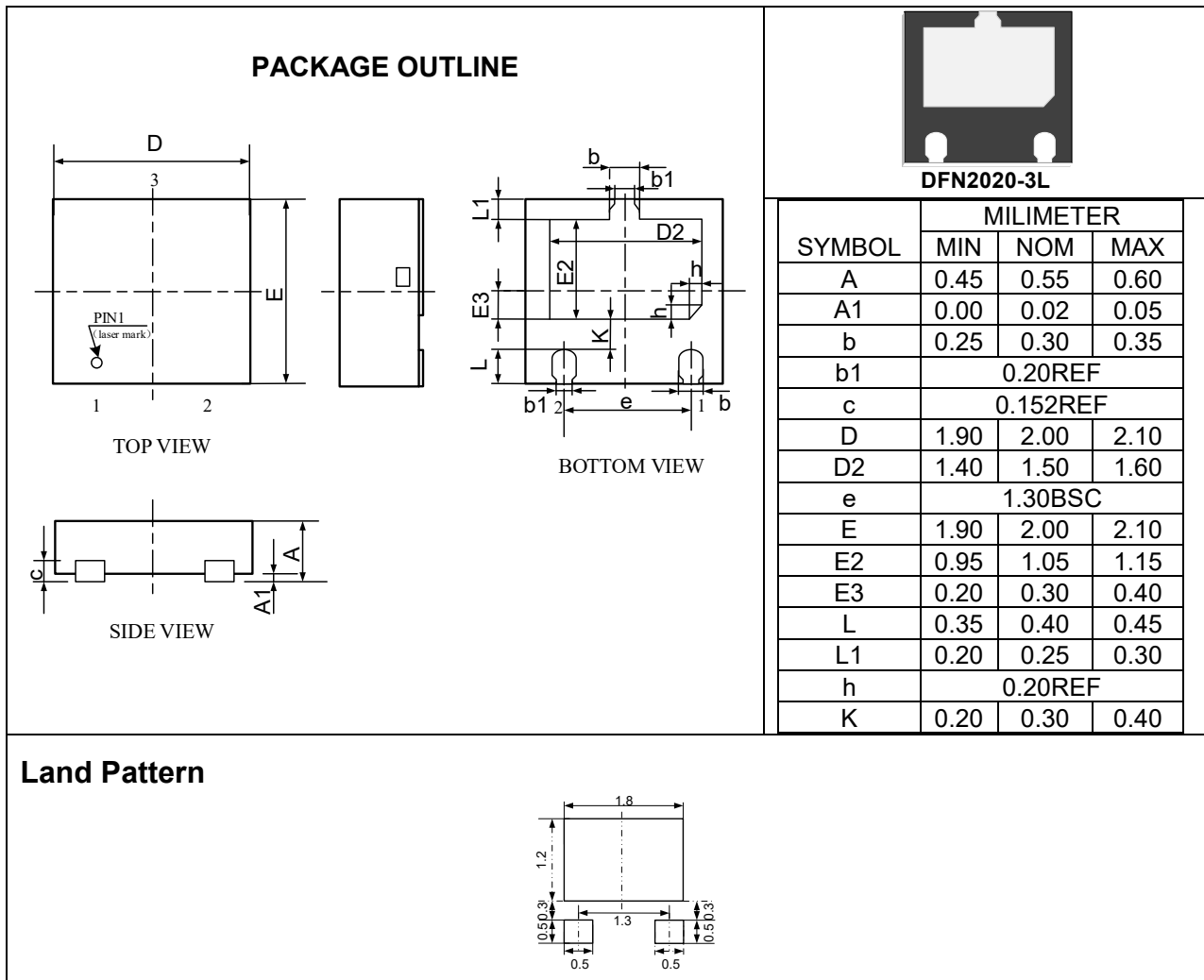


Soldering Parameters

Reflow Condition		Pb – Free assembly
Pre Heat	Temperature Min ($T_{S(min)}$)	150°C
	Temperature Max ($T_{S(max)}$)	200°C
	Time (min to max) (t_s)	60 – 190 secs
Average ramp up rate (Liquidus Temp) (T_L) to peak		5°C/second max
$T_{S(max)}$ to T_L —Ramp-up Rate		5°C/second max
Reflow	Temperature (T_L) (Liquidus)	217°C
	Temperature (t_L)	60 – 150 seconds
Peak Temperature (T_P)		260+0/-5 °C
Time within actual peak Temperature (t_p)		20 – 40 seconds
Ramp-down Rate		5°C/second max
Time 25°C to peak Temperature (T_P)		8 minutes Max.
Do not exceed		280°C



Outline Drawing –DFN2020-3L



Marking Codes

Part Number	Marking Code
DW4.5P4N3-S	<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 10px;"> <p style="text-align: center;">3</p> <p>M4.5A XXXX</p> <p style="display: flex; justify-content: space-between; width: 100%;"> 1 2 </p> </div> <div> <p>M4.5A=Specific Device Code</p> <p>XXXX=Lot Code</p> </div> </div>

Package Information

Qty: 3k/Reel