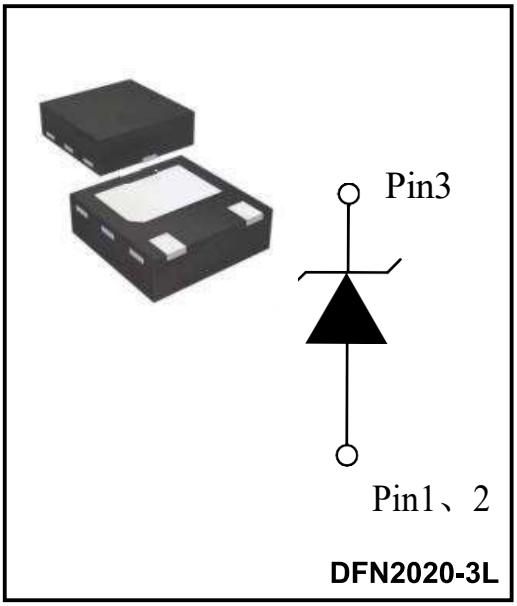
Transient Voltage Suppressor



Features

- 5500 Watts Peak Power (tp = 8/20μs)
- Fast Response time: Typically<1ns
- Excellent Clamping Capability
- Low Inductance
- Low profile package

IEC COMPATIBILITY (EN61000-4)

- IEC 61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 250A (8/20μs)

Applications

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

Mechanical Characteristics

- DFN2020-3L package
- Molding compound flammability rating: UL 94V-0
- Packaging : Tape and Reel per EIA 481
- RoHS Compliant

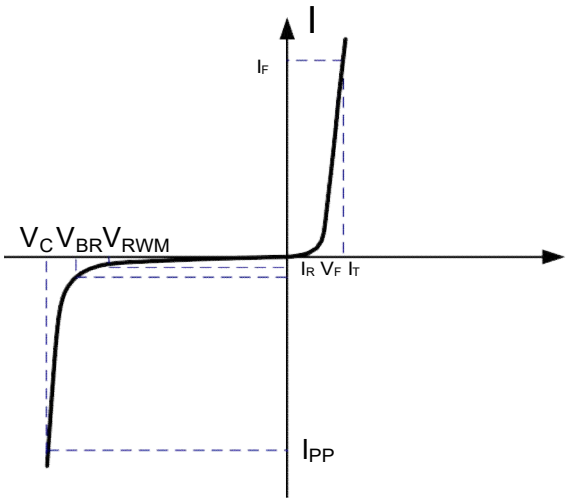
Marking Code	
ESD2020D4V5	T04**

Absolute Maximum Rating

Rating	Symbol	Value	Units
Lead Soldering Temperature	T_L	260(10sec)	°C
Operating Temperature	T_J	-55 to + 125	°C
Storage Temperature	T_{STG}	-55 to +150	°C
Peak Pulse Power（t_p=8/20μs）	P_{PP}	5500	Watts
Peak Pulse Current（t_p=8/20μs）	I_{PP}	250	A

Electrical Parameters (T=25℃)

Symbol	Parameter
I_{PP}	Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse 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

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℃			1	uA
Peak Pulse Current	I_{PP}	t_p =8/20μs			250	A
Clamping Voltage[1]	V_C	I_{PP}=50A, t_p=8/20μs		9.6	12	V
Clamping Voltage[1]	V_C	I_{PP}=150A, t_p=8/20μs		13.6	15	V
Clamping Voltage[1]	V_C	I_{PP}=200A, t_p=8/20μs		18.6	20	V
Clamping Voltage[1]	V_C	I_{PP}=250A, t_p=8/20μs		19.6	22	V
Junction Capacitance	C_j	V_R = 0V, f = 1MHz		3000		pF

Note1: V_S: Surge Test Voltage (t_p=8/20μs).

Typical Characteristics

Figure 1: Peak Pulse Power vs. Pulse Time

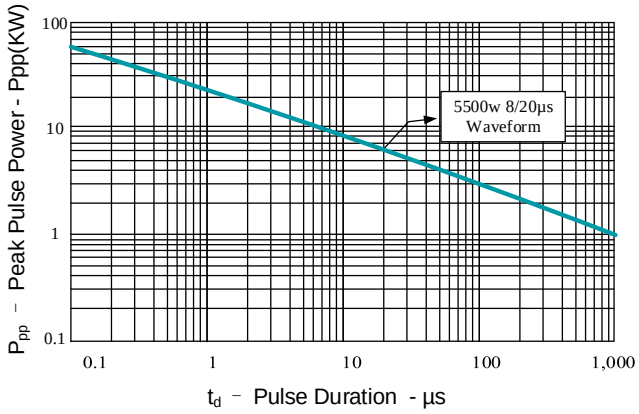


Figure 2: Power Derating Curve

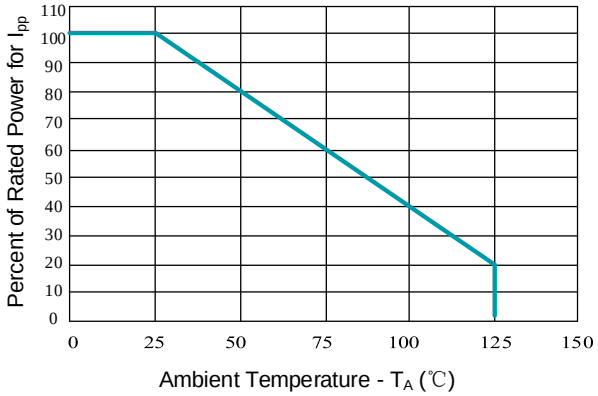


Figure 3: Clamping Voltage vs. Peak Pulse Current

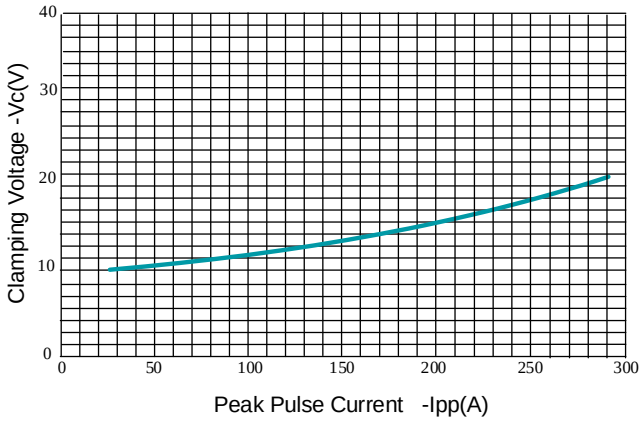


Figure 4: Normalized Junction Capacitance vs. Reverse Voltage

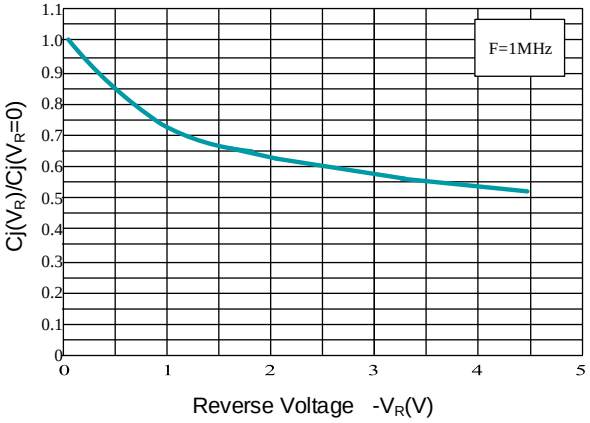
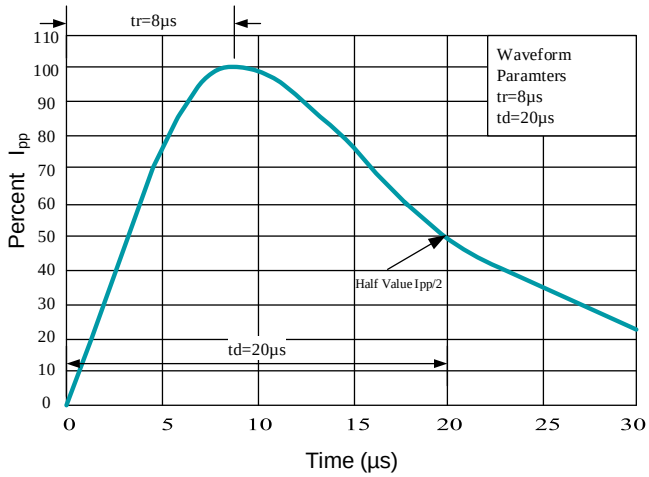
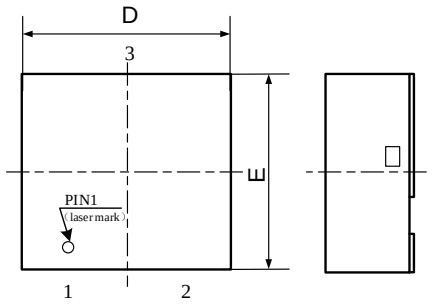


Figure 5: 8/20μs Pulse Waveform

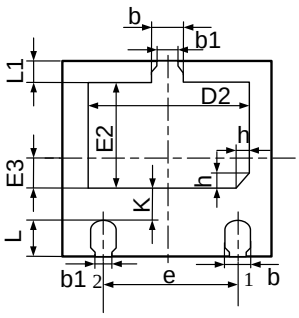


Outline Drawing –DFN2020-3L

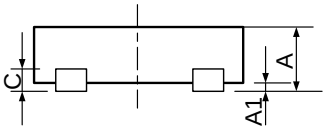
PACKAGE OUTLINE



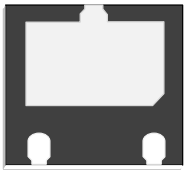
TOP VIEW



BOTTOM VIEW



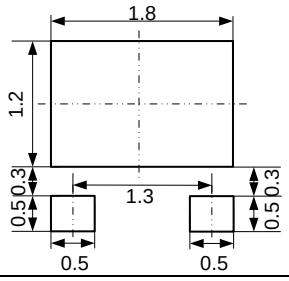
SIDE VIEW



DFN2020-3L

SYMBOL	MILIMETER		
	MIN	NOM	MAX
A	0.5	0.55	0.60
A1	0.00	0.02	0.05
b	0.25	0.30	0.35
b1		0.20REF	
c		0.152REF	
D	1.90	2.00	2.10
D2	1.40	1.50	1.60
e		1.30BSC	
E	1.90	2.00	2.10
E2	0.95	1.05	1.15
E3	0.20	0.30	0.40
L	0.35	0.40	0.45
L1	0.20	0.25	0.30
h		0.20REF	
K	0.20	0.30	0.40

Land Pattern



Summary of Packing Options

Package	Packing Description	Packing Quantity	Industry Standard
DFN2020-3L	Tape/Reel,7”reel	3000	EIA-481-1