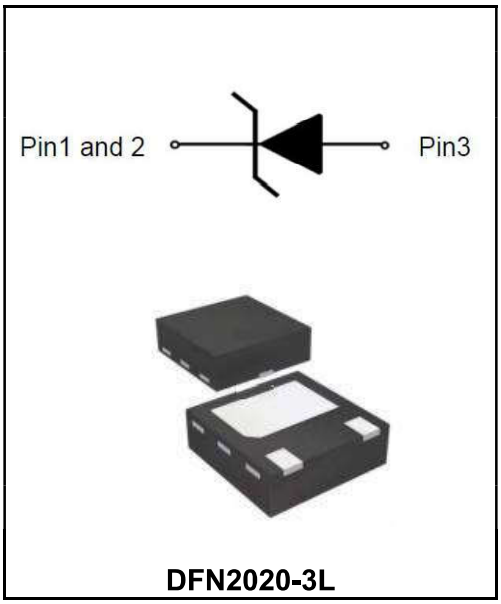
High Power TVS Protection Diode

Features

- Protects one I/O lines
- Working voltages :24V
- Low leakage current
- Low clamping voltage
- Meets MSL 1 Requirements
- Solid-state silicon avalanche technology
- ROHS compliant



DFN2020-3L

Application

- Power lines
- Personal digital assistants
- Microprocessors based equipment
- Notebooks, desktops, and servers
- Portable electronics
- Peripherals

Marking Code	
ESD2020D24V	T24**

Limiting Values(TA = 25 °C, unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
V_{ESD}	Electrostatic Discharge Voltage	IEC 61000-4-2; Contact Discharge	-	-	±30	kV
		IEC 61000-4-2; Air Discharge	-	-	±30	kV
P_{PP}	Peak Pulse Power	tP = 8/20 μs	-	5100	-	W
I_{PPM}	Rated Peak Pulse Current	tP = 8/20 μs	-	-	200	A
T_{OP}	Operating Temperature Range	-	-55	-	125	℃
Tstg	Storage Temperature Range	-	-55	-	150	℃

Electrical Characteristics(TA = 25 °C unless otherwise specified

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
V_{RWM}	Reverse Working Voltage	TA = 25 °C	-	-	24	V
I_R	Reverse Leakage Current	VRWM = 24V; TA = 25 °C	-	-	0.5	μA
V_{BR}	Breakdown Voltage	IR = 1mA; TA = 25 °C	26	-	30	V
V_C	Clamping Voltage	IPP=100A, tP =8/20μs	-	30	-	V
		IPP=200A, tP =8/20μs	-	33	35	V
CJ	Junction Capacitance	VR = 0V, f = 1 MHz	-	750	-	pF

Typical Characteristics

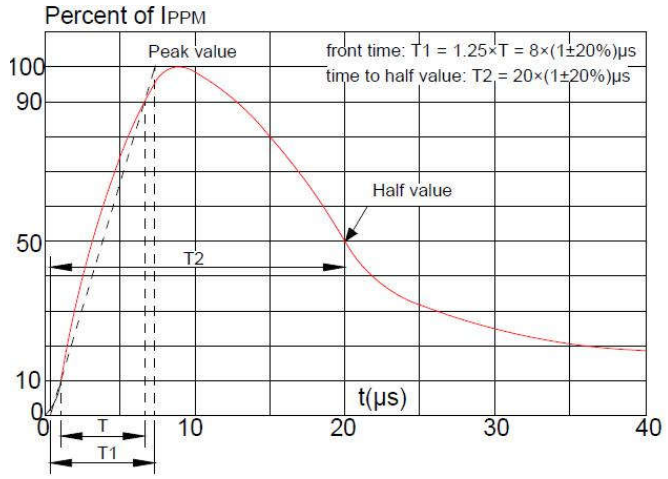


Fig.1 Pulse Waveform(8/20us)

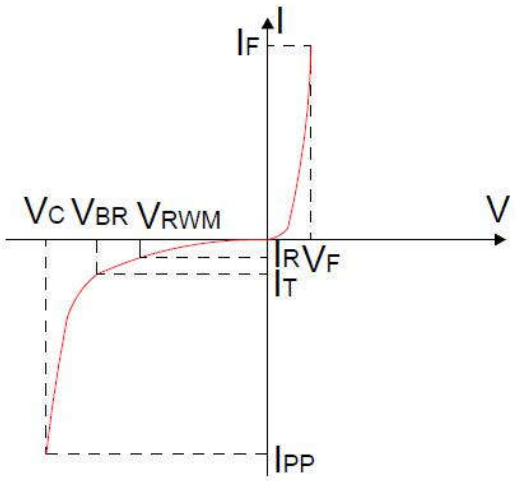


Fig.2 V-I curve characteristics(Uni-directional)

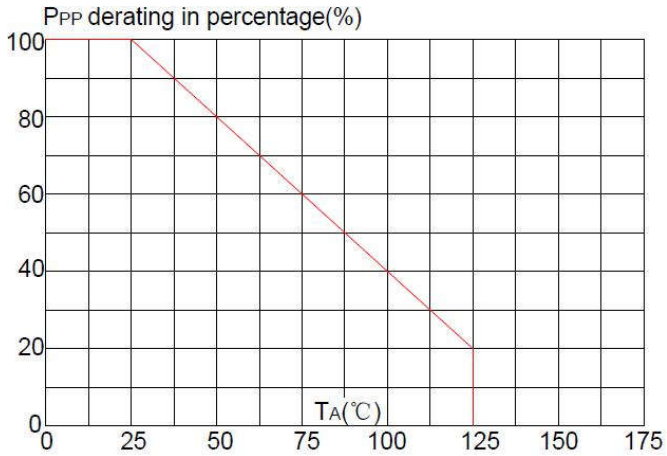


Fig.3 Power Derating Curve

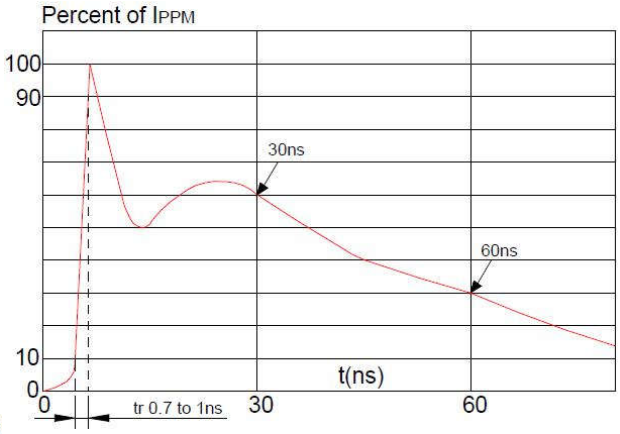


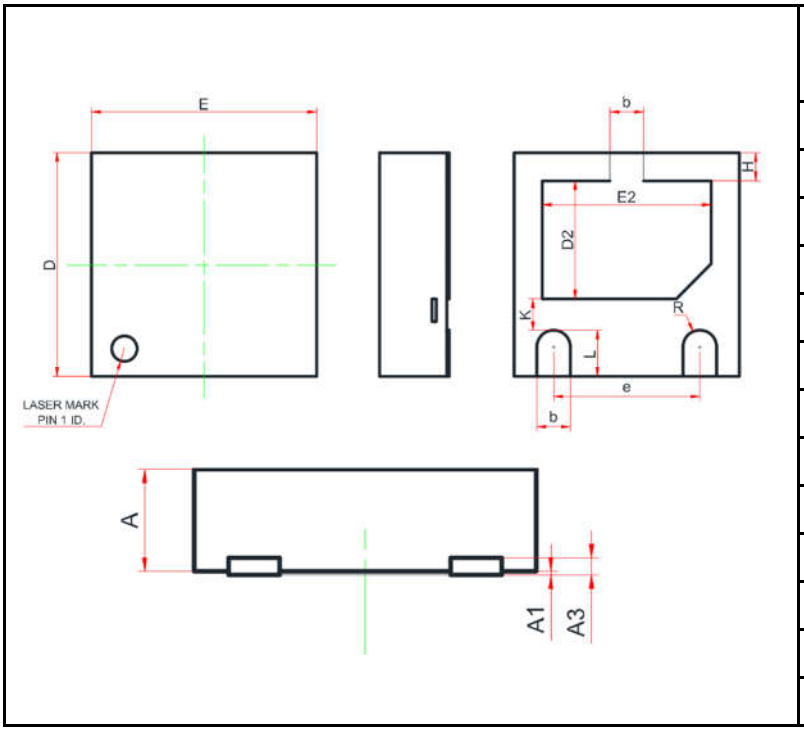
Fig.4 ESD clamping(30kV contact)

Ordering information

Package	Packing Description	Packing Quantity
DFN2020-3L	Tape/Reel,13"reel	3000PCS/Reel 30000PCS/Carton

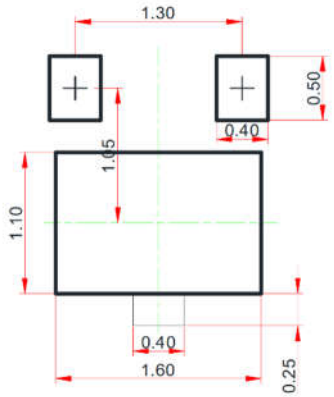
Package Dimensions

DFN2020-3L

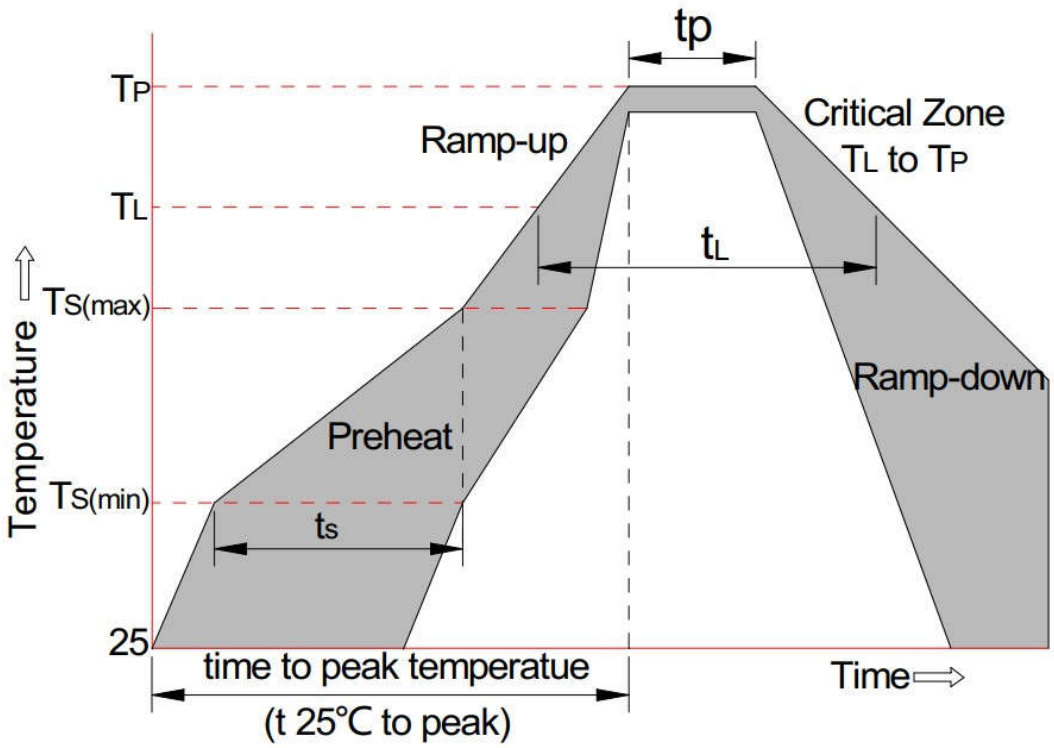


Dim.	Millimeter(mm)		mil	
	Min.	Max.	Min.	Max.
A	0.45	0.65	18	26
A1	0.00	0.05	-	2
A3	0.15 REF			
b	0.25	0.30	10	12
D	1.90	2.00	75	79
E	1.90	2.00	75	79
D2	0.85	1.00	35	040
E2	1.35	1.50	53	59
e	1.20	1.30	47	51
H	0.20	0.25	8	10
K	0.20	0.30	8	12
L	0.35	0.40	14	16
R	0.15	-	6	-

The recommended mounting pad size



Soldering Parameters



Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min (Ts(min))	+150°C
	-Temperature Max(Ts(max))	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (TL) to peak)		3°C/sec. Max
Ts(max) to TL - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(TL)(Liquid us)	+217°C
	-Temperature(tL)	60-150 secs.
Peak Temp (Tp)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (tp)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
xTime 25°C to Peak Temp (TP)		8 min. Max
Do not exceed		+260°C

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