

Features

- Uni-Directional ESD Protection of One Line
- Low Clamping Voltage
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

IEC61000-4-2 (ESD)	Air	$\pm 30\text{KV}$
	Contact	$\pm 30\text{KV}$
Peak Pulse Current (8/20 μs)	I_{PP}	180A
Peak Pulse Power (8/20 μs) ^(Note 2)	P_{PK}	5000W
Operating Junction Temperature Range	T_J	-40°C to +125°C
Storage Temperature Range	T_{STG}	-55°C to +150°C

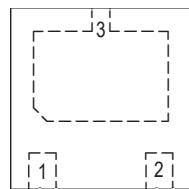
Note :

1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

Internal Structure



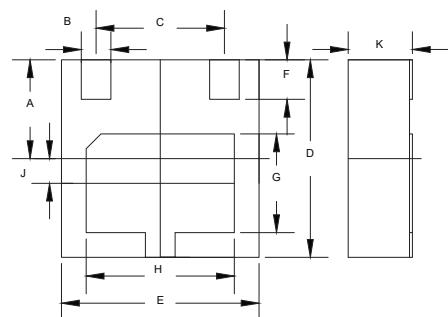
Marking Code



Transparent top view

ESD Protection Device

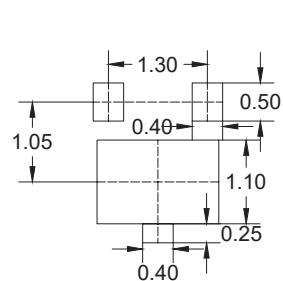
DFN2020-3L



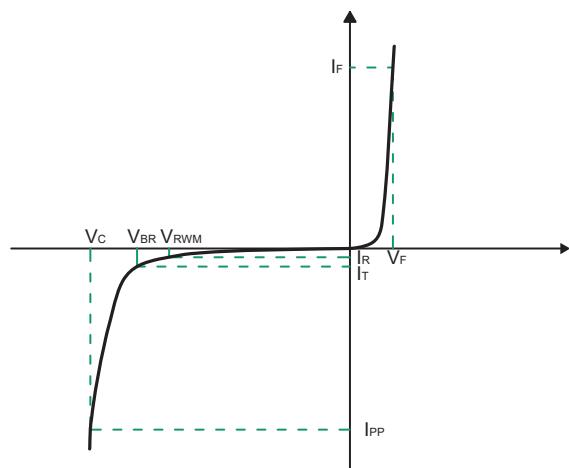
DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.037	0.041	0.950	1.050	
B	0.010	0.014	0.250	0.350	
C	0.051		1.30		TYP.
D	0.075	0.083	1.900	2.100	
E	0.075	0.083	1.900	2.100	
F	0.014	0.018	0.350	0.450	
G	0.035	0.043	0.900	1.100	
H	0.055	0.063	1.400	1.600	
J	0.008	0.012	0.200	0.300	
K	-	0.026	-	0.650	

Suggested Solder Pad Layout



Symbol	Parameter
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ VRWM
V_{BR}	Breakdown Voltage @ IT
IT	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ IPP
P_{PK}	Peak Pulse Power
C_J	Junction Capacitance
I_F	Forward Current
V_F	Forward Voltage @ IF



Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage	V_{RWM}				15	V
Reverse Breakdown Voltage	V_{BR}	$I_{BR}=1\text{mA}$	15.5		19	V
Reverse Leakage Current	I_R	$V_{RWM}=15\text{V}$			1	μA
Forward Voltage	V_F	$I_F=20\text{mA}$	0.45		1.25	V
Clamping Voltage ^{Note1}	V_C	$I_{PP}=180\text{A}$, $t_p=8/20\mu\text{s}$		28	30	V
Junction Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$		1200		pF
Dynamic Resistance ^{Note2}	R_{DYN}	TLP, $t_p=100\text{ns}$		0.04		Ω

Note :

1. Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

2. TLP parameter: $Z_0=50\Omega$, $t_p=100\text{ns}$, $t_r=2\text{ns}$, averaging window from 60ns to 80ns. R_{DYN} is calculated from 4A to 16A.

Curve Characteristics

Fig. 1 - 8 X 20 μ s Pulse Waveform

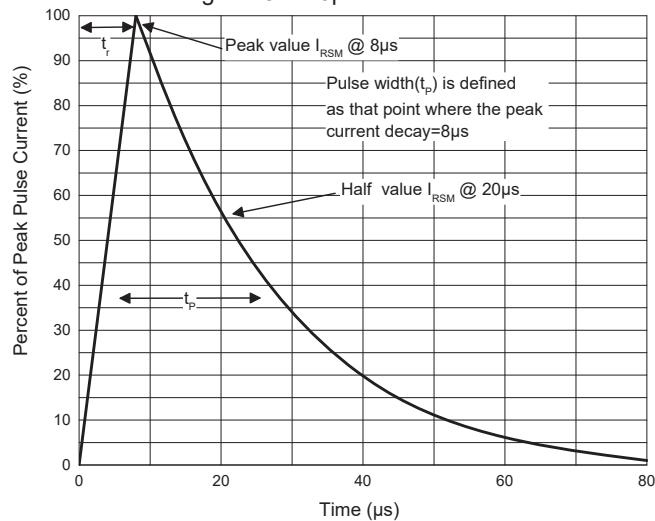


Fig. 2 - Non-Repetitive Peak Pulse Power

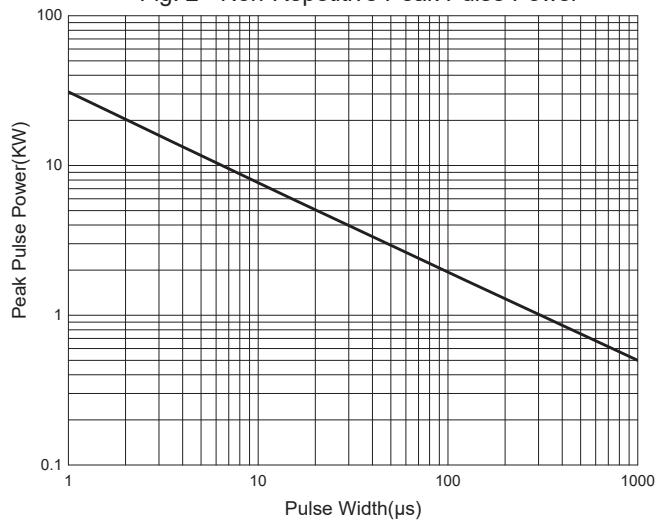


Fig. 3 - Capacitance Characteristics

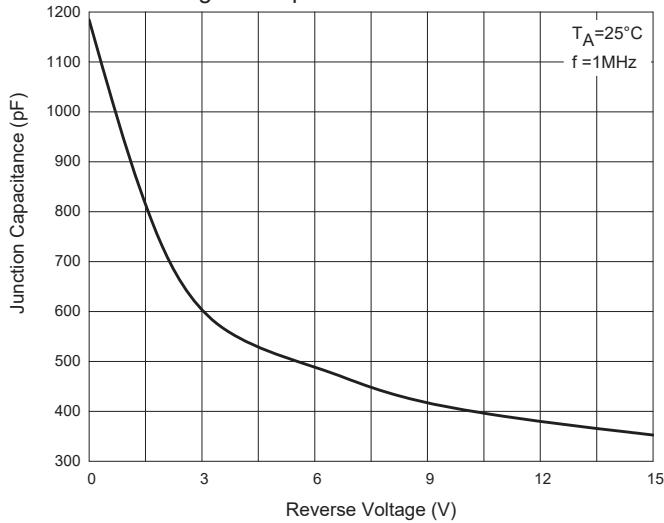


Fig. 4 - Clamping Voltage Characteristics

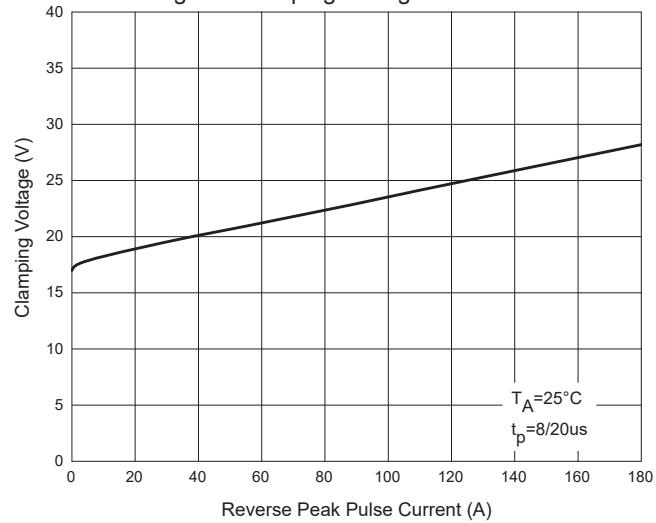


Fig. 5 - TLP Curve

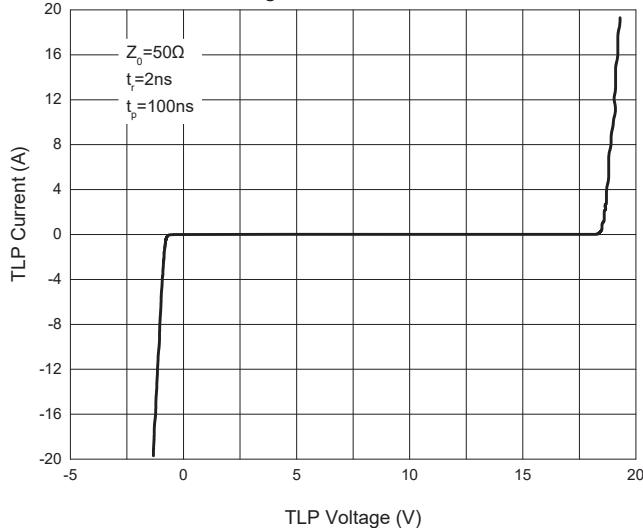
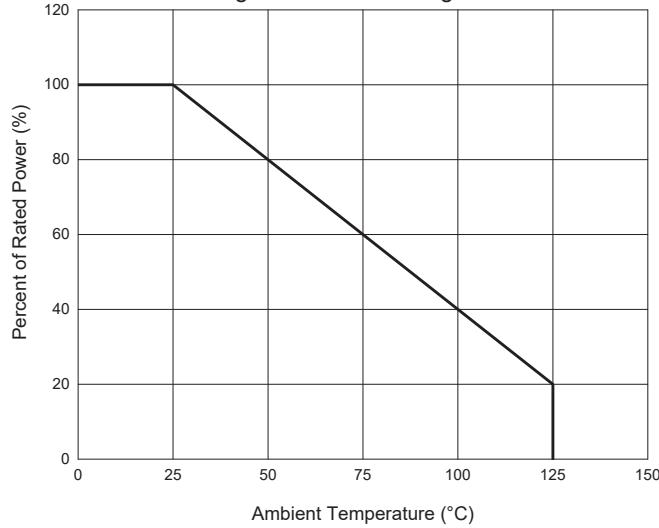


Fig. 6 - Pulse Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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