

## Features

- Uni-Directional ESD Protection of Eight Lines
- Low Capacitance
- 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)

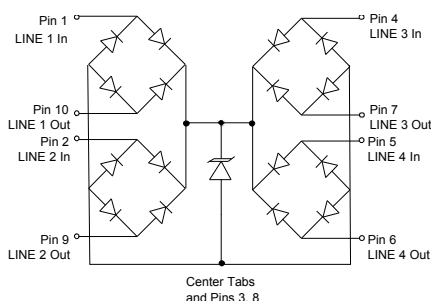
## Maximum Ratings

IEC61000-4-2 (ESD)	Air	±30KV
	Contact	±30KV
Peak Pulse Current (8/20μs)	I <sub>PP</sub>	40A
Peak Pulse Power (8/20μs) <sup>(Note2)</sup>	P <sub>PK</sub>	1000W
Operating Junction Temperature Range	T <sub>J</sub>	-55°C to +125°C
Storage Temperature Range	T <sub>STG</sub>	-55°C to +150°C

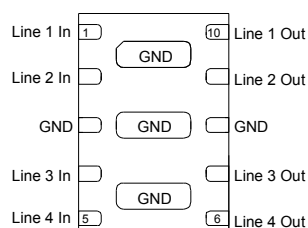
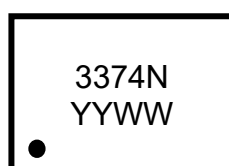
Note :

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

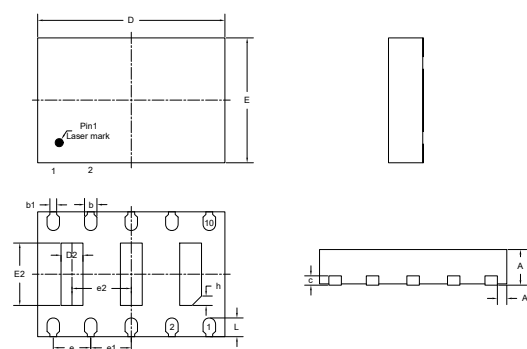


## Marking Code



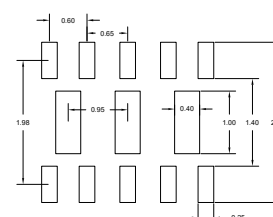
# ESD Protection Device

## DFN3020-10



DIMENSIONS					
	INCH		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.020	0.024	0.500	0.600	
A1	0.000	0.002	0.000	0.050	
b	0.006	0.010	0.150	0.250	
b1	0.006		0.140		TYP
c	0.006		0.150		TYP
D	0.114	0.122	2.900	3.100	
D2	0.012	0.016	0.300	0.400	
e	0.024		0.600		TYP
e1	0.026		0.650		TYP
e2	0.037		0.950		TYP
E	0.075	0.083	1.900	2.100	
E2	0.037	0.041	0.950	1.050	
L	0.010	0.014	0.250	0.350	
h	0.004	0.008	0.100	0.200	

## SUGGESTED SOLDER PAD LAYOUT (mm)



**Electrical Characteristics @ 25°C (Unless Otherwise Specified)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage	$V_{RWM}$				3.3	V
Punch-Through Voltage	$V_{PT}$	$I_T=2\mu A$	3.5			V
Snap-Back Voltage	$V_{SB}$	$I_{SB}=50mA$	2.8			V
Reverse Leakage Current	$I_R$	$V_{RWM}=3.3V$			0.5	$\mu A$
Clamping Voltage	$V_C$	$I_{PP}=1A$ , $t_P=8/20\mu s$ , Any I/O Pin to Ground			5.5	V
Clamping Voltage	$V_C$	$I_{PP}=10A$ , $t_P=8/20\mu s$ , Any I/O Pin to Ground			10.5	V
Clamping Voltage	$V_C$	$I_{PP}=25A$ , $t_P=8/20\mu s$ , Any I/O Pin to Ground			18	V
Clamping Voltage	$V_C$	$I_{PP}=40A$ , $t_P=8/20\mu s$ , Line to Line (Two I/O Pins Connected Together on Each Line)			25	V
Junction Capacitance	$C_J$	$V_R=0V$ , $f=1MHz$ , Between I/O Pins		1.7	2.5	pF
Junction Capacitance	$C_J$	$V_R=0V$ , $f=1MHz$ , Any I/O Pin to Ground		3.8	5	pF

## Curve Characteristics

Fig. 1 - 8 X 20 $\mu$ s Pulse Waveform

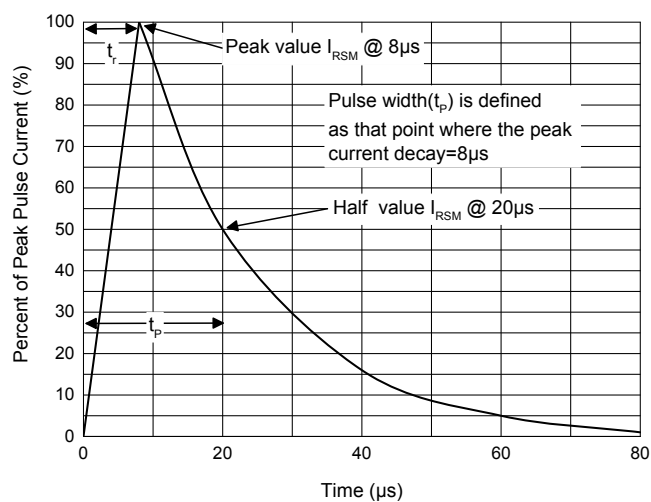


Fig. 2 - Non-Repetitive Peak Pulse Power

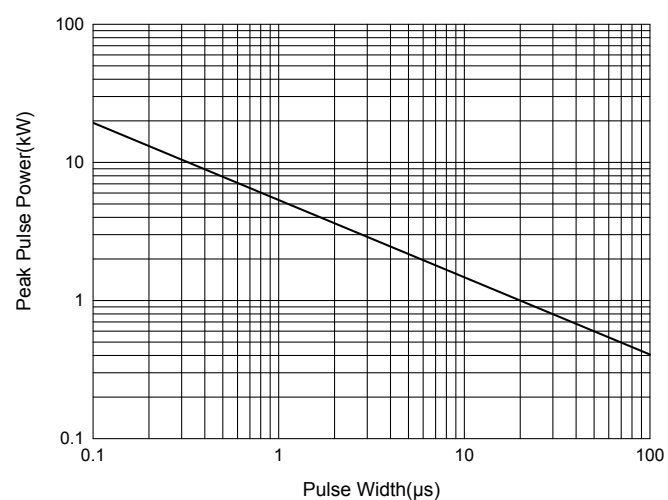


Fig. 3 - Capacitance Characteristics

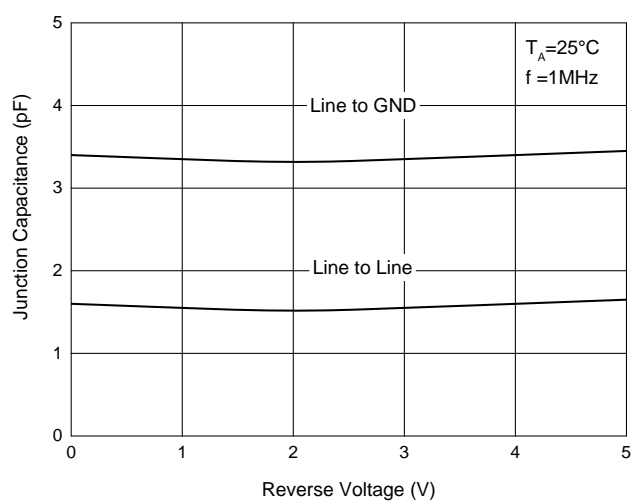


Fig. 4 - Clamping Voltage Characteristics

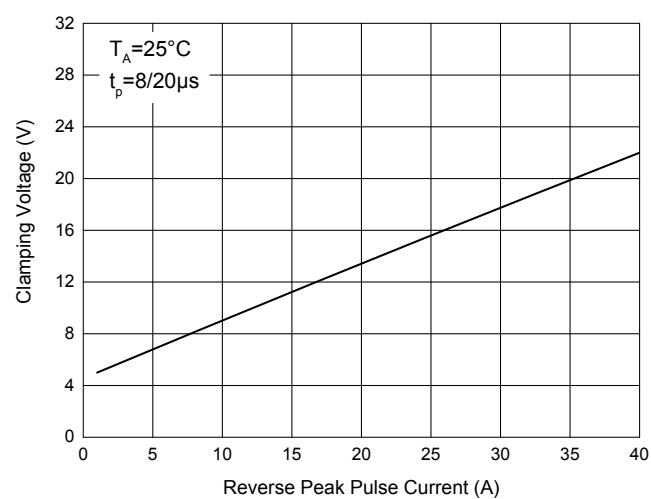
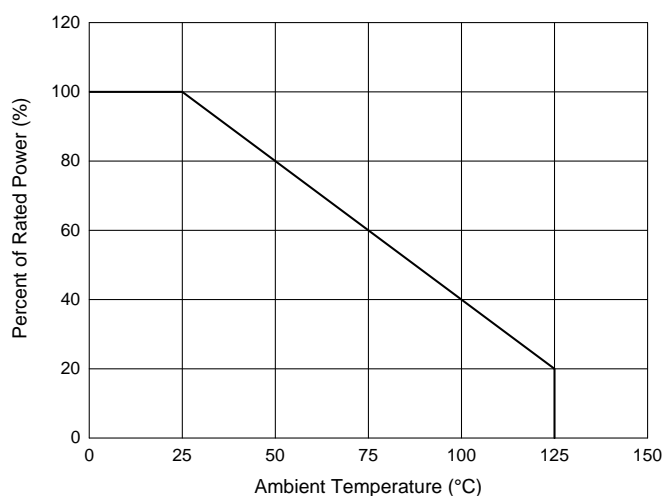


Fig. 5 - Pulse Derating Curve



## Ordering Information

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

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