

## 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)

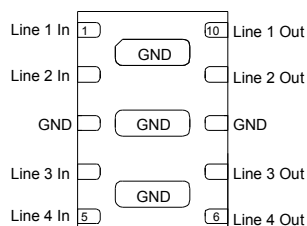
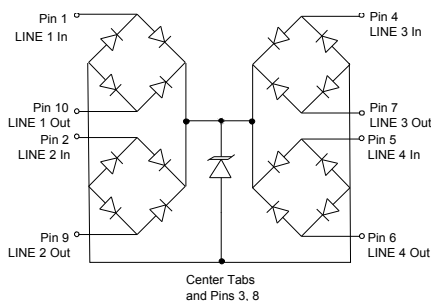
## Maximum Ratings

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

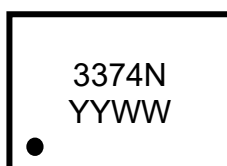
Note :

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  $\mu$ s exponential decay waveform according to IEC61000-4-5.

## Internal Structure

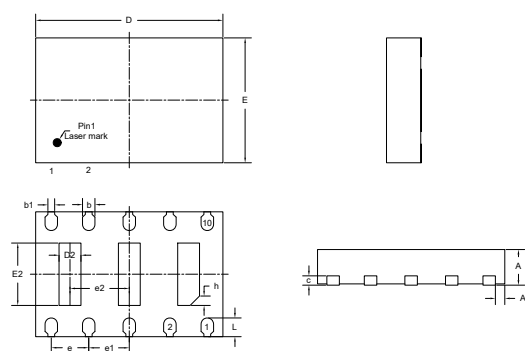


### Marking Code



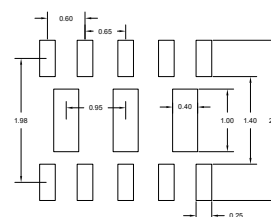
# ESD Protection Device

## 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

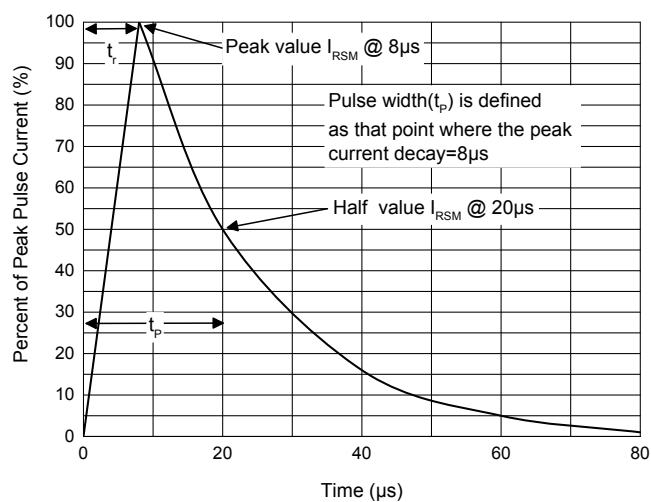


Fig. 2 - Non-Repetitive Peak Pulse Power

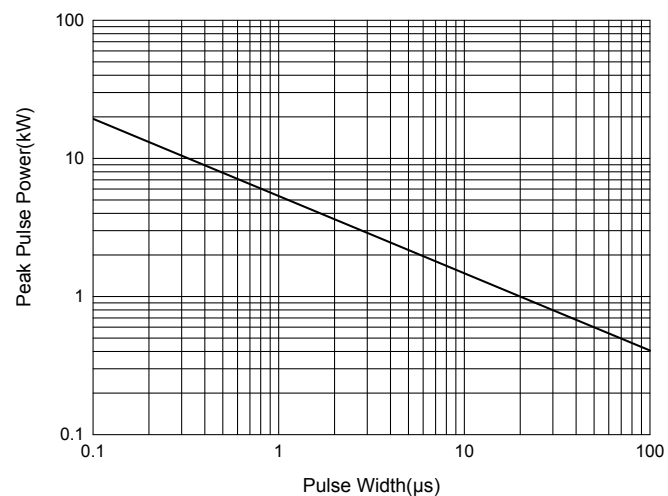


Fig. 3 - Capacitance Characteristics

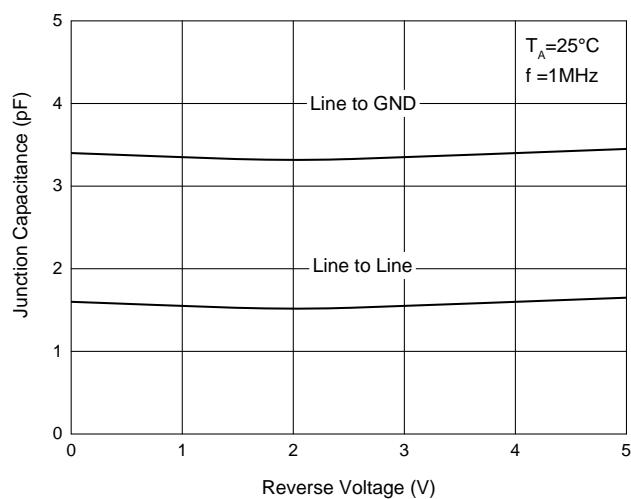


Fig. 4 - Clamping Voltage Characteristics

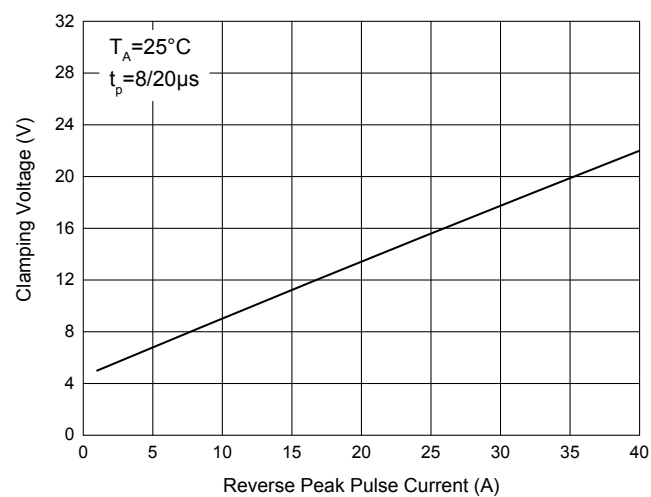
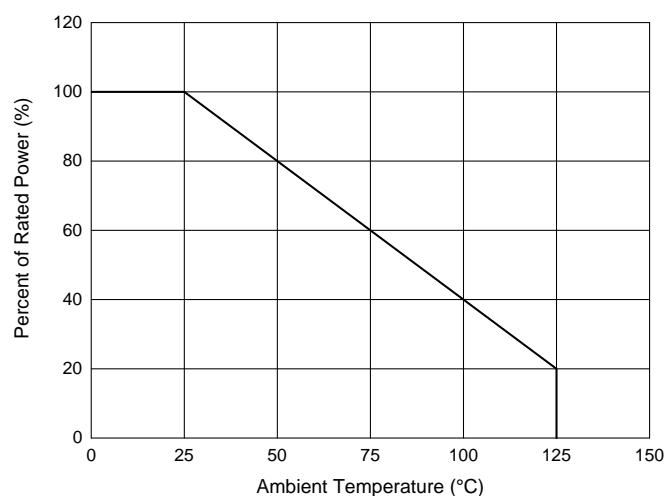


Fig. 5 - Pulse Derating Curve



## Ordering Information

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

### \*\*\*IMPORTANT NOTICE\*\*\*

**Micro Commercial Components Corp.** reserves the right to make changes without further notice to any product herein to make corrections, modifications , enhancements , improvements , or other changes . **Micro Commercial Components Corp.** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights ,nor the rights of others . The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp.** and all the companies whose products are represented on our website, harmless against all damages. **Micro Commercial Components Corp.** products are sold subject to the general terms and conditions of commercial sale, as published at <https://www.mccsemi.com/Home/TermsAndConditions>.

### \*\*\*LIFE SUPPORT\*\*\*

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

### \*\*\*CUSTOMER AWARENESS\*\*\*

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.

# Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Micro Commercial Components \(MCC\):](#)

[ESDLC3304P9-TP](#)