

## CPDZ5V0SB-HF

RoHS Device

Halogen Free



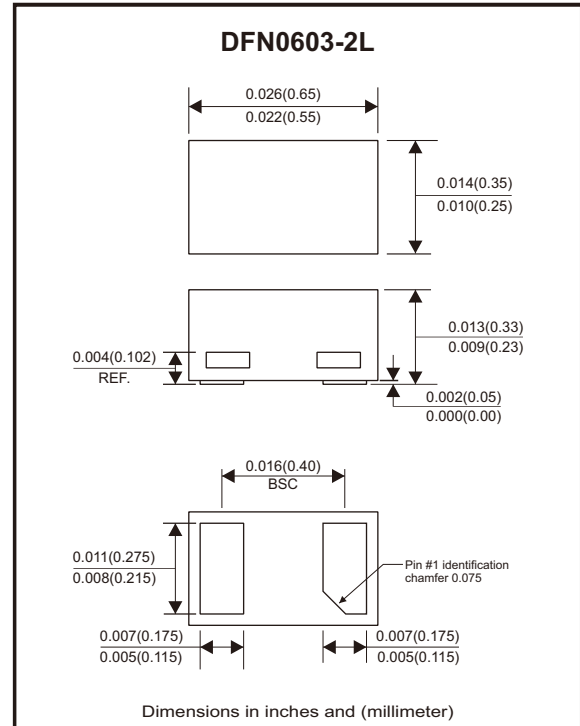
### Features

- Transient protection for high-speed data lines.  
IEC 61000-4-2 (ESD)  $\pm 17\text{kV}$  (air)  
 $\pm 8\text{kV}$  (contact)  
IEC 61000-4-4 (EFT)40A (5/5ns)  
Cable discharge event (CDE)
- Package optimized for high-speed lines.
- Ultra-small package.
- Protects one data, control line.
- Low clamping voltage.

### Mechanical data

- Case: DFN0603-2L standard package, molded plastic.
- Flammability rating: UL 94V-0.
- Mounting position: Any.

### Circuit Diagram



### Maximum Rating (at $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
Peak pulse current	$T_P = 8/20\mu\text{s}$	$I_{PP}$	3	A
ESD per	IEC 61000-4-2(air) IEC 61000-4-2(contact)	$V_{ESD}$	$\pm 17$ $\pm 8$	kV
Operating temperature range		$T_{OPT}$	-55 to +125	$^\circ\text{C}$
Storage temperature range		$T_{STG}$	-55 to +150	$^\circ\text{C}$

### Electrical Characteristics (at $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Nominal reverse working voltage		$V_{RWM}$			5	V
Reverse leakage current	$V_{RWM} = 5\text{V}$ , $T = 25^\circ\text{C}$	$I_R$			0.1	$\mu\text{A}$
Trigger voltage	$I_{T1} = 100\mu\text{A}$	$V_{T1}$	6		8	V
Holding voltage	$I_h = 30\text{mA}$	$V_h$	2		3	V
Clamping voltage	$I_{PP} = 1\text{A}$ , $t_p = 8/20\mu\text{s}$	$V_C$			4	V
	$I_{PP} = 3\text{A}$ , $t_p = 8/20\mu\text{s}$	$V_C$			5	
TLP dynamic resistance	IEC 61000-4-2 0-8KV, $T = 25^\circ\text{C}$	$R_{DYN}$		0.3		$\Omega$
Clamping voltage	$I_{PP} = 12\text{A}$ , $t_p = 100\text{ns}$	$V_C$		7		V
Parasitic capacitance	$V_R = 0\text{V}$ , $f = 1\text{MHz}$	$C_{ESD}$		0.5	0.8	pF

## Typical Rating and Characteristic Curves (CPDZ5V0SB-HF)

Fig.1 - TLP Measurement of I/O to I/O

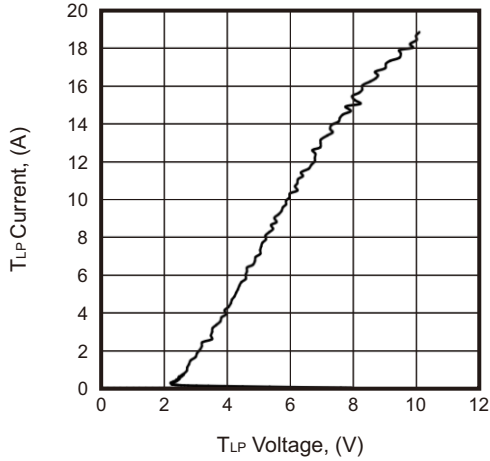


Fig.2 - Clamping Voltage vs. Peak Pulse Current

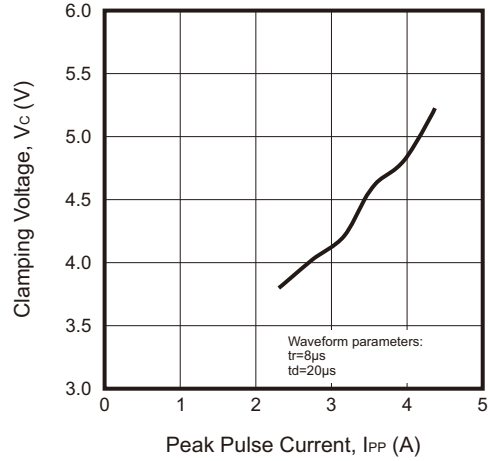


Fig.3 - Capacitance vs. Reverse Voltage

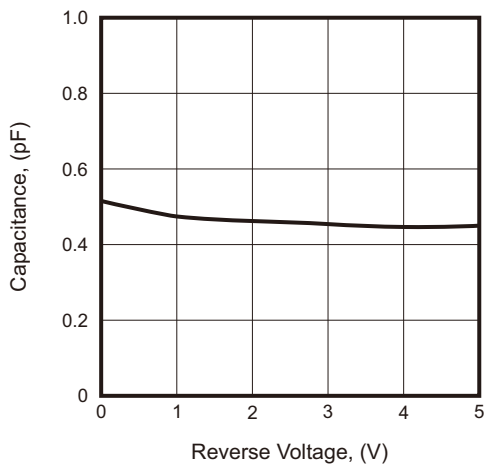


Fig.4 - Normalized Capacitance vs. Reverse Voltage

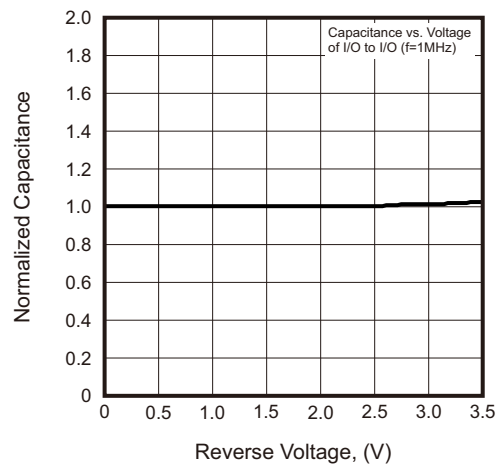


Fig.5 - ESD Clamping of I/O to GND (+8kV Contact per IEC 61000-4-2)

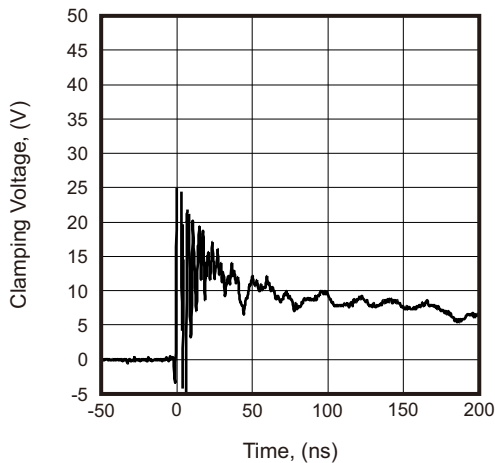
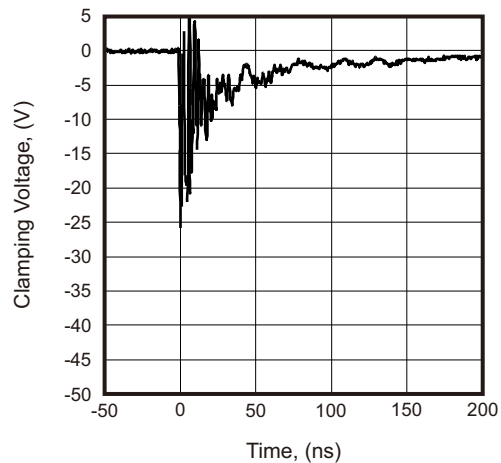
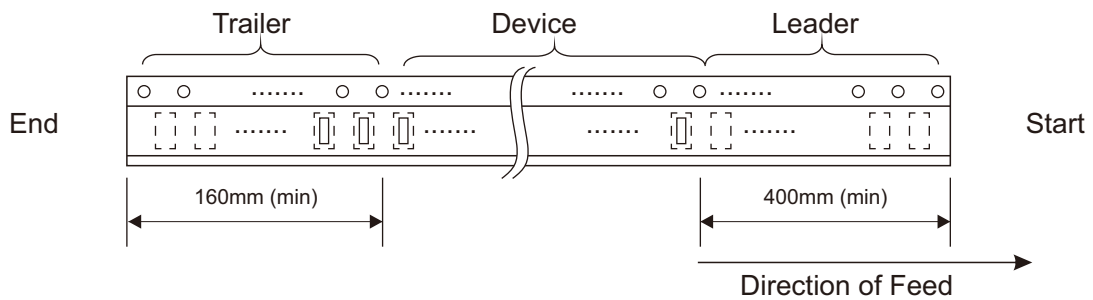
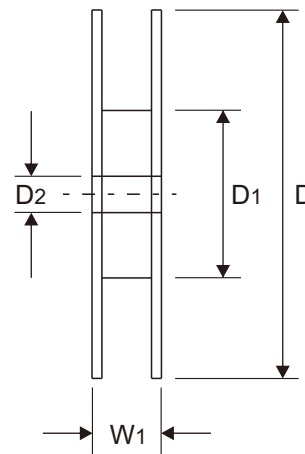
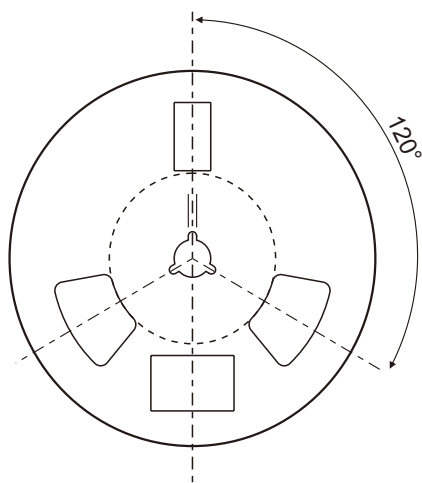
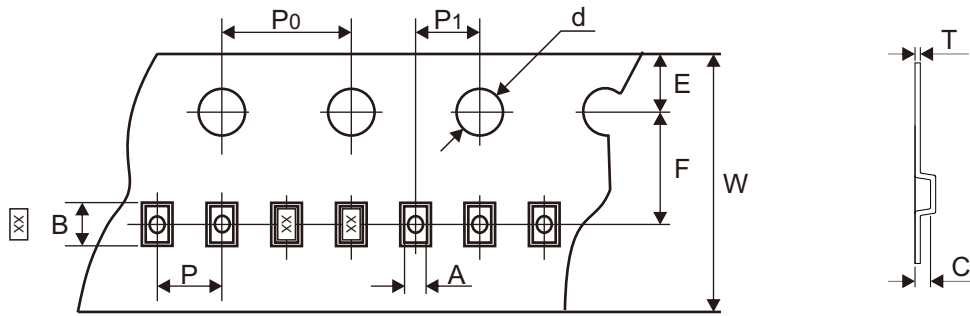


Fig.6 - ESD Clamping of I/O to GND (-8kV Contact per IEC 61000-4-2)



## Reel Taping Specification

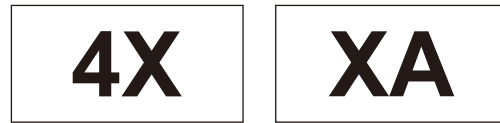


DFN0603 -2L	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	0.37 ± 0.03	0.67 ± 0.03	0.32 ± 0.02	1.50 + 0.10 - 0.00	180.00 ± 1.00	53.60 ± 1.00	13.20 ± 0.30
	(inch)	0.015 ± 0.001	0.026 ± 0.001	0.013 ± 0.001	0.059 + 0.004 - 0.000	7.087 ± 0.039	2.110 ± 0.039	0.520 ± 0.012

DFN0603 -2L	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	2.00 ± 0.03	4.00 ± 0.03	2.00 ± 0.03	0.18 ± 0.05	8.00 ± 0.10	14.40 Max
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.079 ± 0.001	0.157 ± 0.001	0.079 ± 0.001	0.007 ± 0.002	0.315 ± 0.004	0.567 Max

## Marking Code

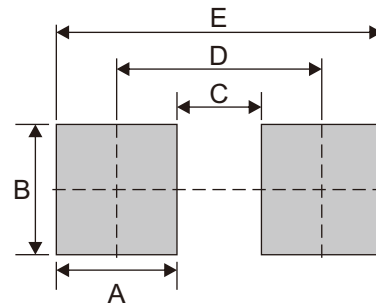
Part Number	Marking Code	
CPDZ5V0SB-HF	4	A



X = Control code

## Suggested P.C.B. PAD Layout

SIZE	DFN0603-2L	
	(mm)	(inch)
A	0.25	0.010
B	0.27	0.011
C	0.175	0.007
D	0.425	0.017
E	0.675	0.027



## Standard Packaging

Case Type	REEL PACK	
	REEL ( pcs )	Reel Size (inch)
DFN0603-2L	10,000	7