

CPDZD3V3SPU-HF

RoHS Device

Halogen Free

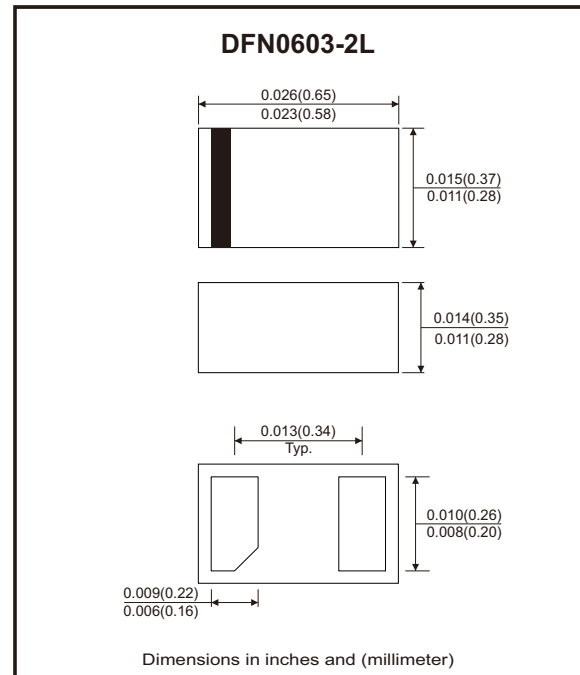


Features

- IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (air/contact).
- IEC 61000-4-5 (Surge) 10A (8/20 μs).
- Ultra small SMD package.
- Protects one high-speed data line.
- Ultra low capacitance.
- Low leakage current.
- Low clamping voltage.

Mechanical data

- Case: DFN0603-2L package, molded plastic.
- Terminals: Solderable per MIL-STD-750, method 2026.
- Polarity: Indicated by cathode band.
- Mounting position: Any.



Circuit Diagram



Maximum Rating (at Ta=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Value	Unit
ESD capability	IEC 61000-4-2 (air) IEC 61000-4-2 (contact)	ESD	± 30	kV
Peak pulse power	$T_P = 8/20\mu\text{s}$	P_{PP}	130	W
Peak pulse current	$T_P = 8/20\mu\text{s}$	I_{PP}	10	A
Operating junction temperature range		T_J	-55 to +125	°C
Storage temperature range		T_{STG}	-55 to +150	°C

Electrical Characteristics (at Ta=25°C unless otherwise noted)

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Reverse working voltage		V_{RWM}			3.3	V
Reverse breakdown voltage	$I_T = 1mA$	V_{BR}	6		9.5	V
Reverse leakage current	$V_{RWM} = 3.3V$	I_R			100	nA
Forward voltage	$I_T = 10mA$	V_F	0.5	0.8	1.2	V
Clamping voltage	$I_{PP} = 1A, T_P = 8/20\mu s$	V_C		5.7	7	V
	$I_{PP} = 10A, T_P = 8/20\mu s$			11	13	
Forward clamping voltage (Note 1)	$I_{PP} = 16A, T_P = 100ns$	V_{CF}		3.8		V
Dynamic resistance (Note 1)		R_{DYN}		0.19		Ω
Junction capacitance	$V_R = 0V, f = 1MHz$	C_J		0.7		pF

Note: 1. Clamping voltage was measured by transmission line pulse test (TLP),
TLP conditions: $Z_0=50\Omega$, $t_r=0.6ns$, $t_p=100ns$, I_{TLP} and V_{TLP} averaging window from 70ns to 90ns.
 R_{DYN} is calculated from 4A to 16A.

Typical Rating and Characteristic Curves (CPDZD3V3SPU-HF)

Fig.1 - Transmission Line Pulsing Measurement

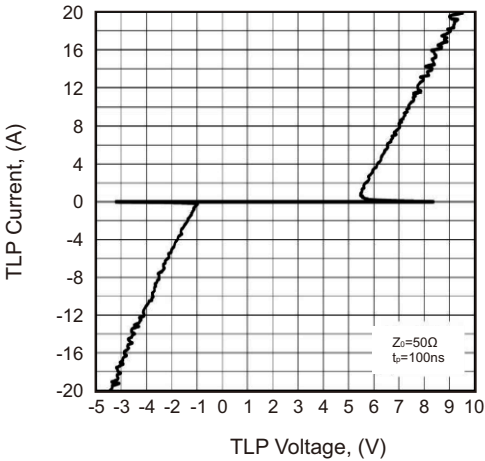


Fig.2 - Clamping Voltage vs Peak Pulse Current

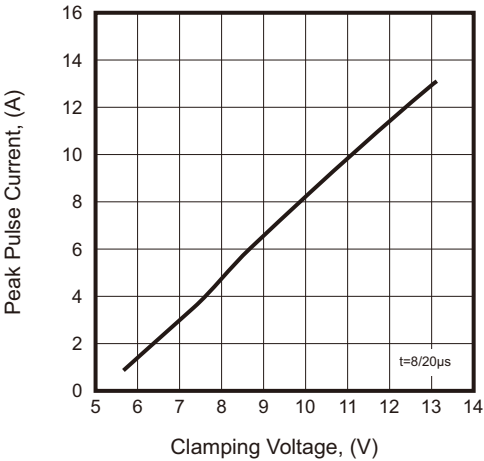


Fig.3 - ESD Clamping
(+8kV Contact per IEC 61000-4-2)

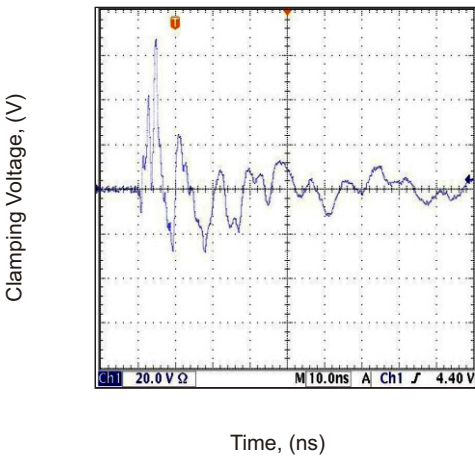


Fig.4 - ESD Clamping
(-8kV Contact per IEC 61000-4-2)

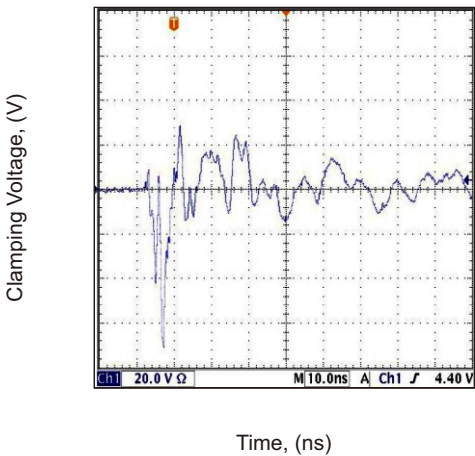
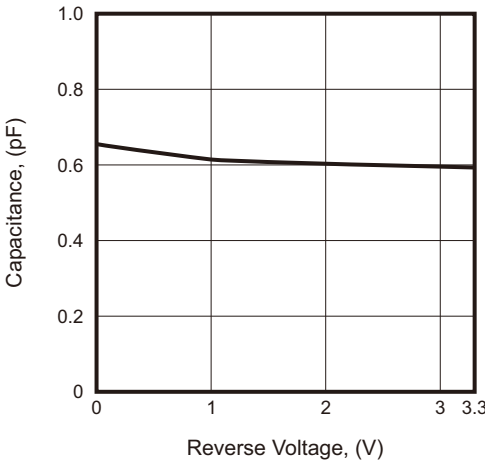
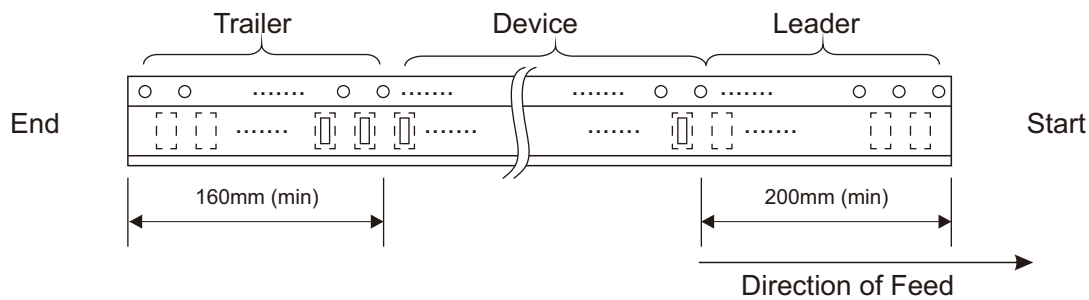
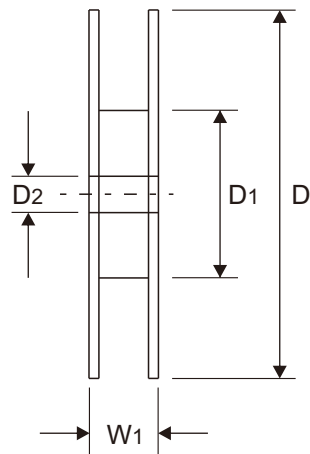
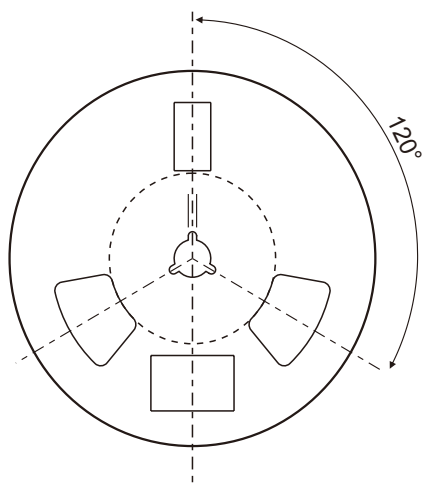
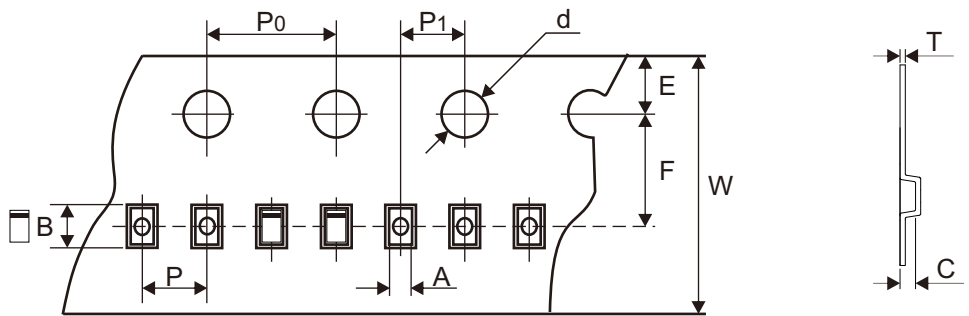


Fig.5 - Voltage vs Capacitance



Reel Taping Specification



DFN0603 -2L	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	0.38 ± 0.04	0.68 ± 0.05	0.35 ± 0.03	1.50 ± 0.10	177.80 ± 1.00	54.50 ± 0.50	13.50 ± 0.20
	(inch)	0.015 ± 0.002	0.027 ± 0.002	0.014 ± 0.001	0.059 ± 0.004	7.000 ± 0.039	2.146 ± 0.020	0.531 ± 0.008

DFN0603 -2L	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	2.00 ± 0.10	4.00 ± 0.10	2.00 ± 0.05	0.18 ± 0.04	8.00 ± 0.30	12.30 ± 0.30
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.079 ± 0.004	0.157 ± 0.004	0.079 ± 0.002	0.007 ± 0.002	0.315 ± 0.012	0.484 ± 0.012

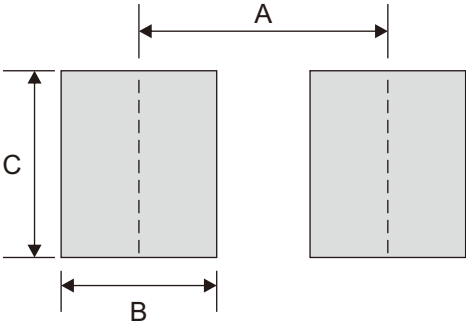
Marking Code

Part Number	Marking Code
CPDZD3V3SPU-HF	5LL



Suggested P.C.B. PAD Layout

SIZE	DFN0603-2L	
	(mm)	(inch)
A	0.40	0.016
B	0.25	0.010
C	0.30	0.012



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
DFN0603-2L	15,000	7