

# SMD ESD Protection Diode

**Comchip**  
SMD Diode Specialist

## CPDZ5V0HE-HF

RoHS Device  
Halogen Free



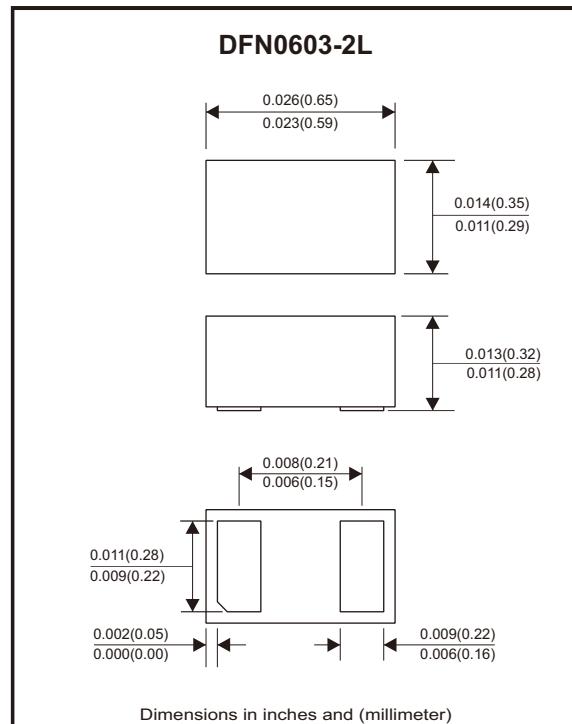
### Features

- Low capacitance: 13.5pF (typ.).
- Reverse standoff voltage: 5V
- IEC 61000-4-2 (air):  $\pm 30\text{kV}$
- IEC 61000-4-2 (contact):  $\pm 30\text{kV}$
- IEC 61000-4-5 (surge): 7A(8/20 $\mu\text{s}$ )

### Mechanical data

- Case: DFN0603-2L standard package, molded plastic.
- Mounting position: Any.

### Circuit Diagram



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

Parameter	Conditions	Symbol	Value		Unit
Electrostatic discharge voltage	IEC 61000-4-2(contact) IEC 61000-4-2(air)	$V_{ESD}$	$\pm 30$		kV
Peak pulse power	$T_P = 8/20\mu\text{s}$	$P_{PP}$	70		W
Peak pulse current	IEC 61000-4-5, $T_P = 8/20\mu\text{s}$	$I_{PP}$	7		A
Operating junction temperature range		$T_J$	-55 to +150		$^\circ\text{C}$
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
Reverse standoff voltage	I/O to GND	$V_{RWM}$		5		V
Breakdown voltage	$I_R = 1\text{mA}$ , I/O to GND	$V_{BR}$	5.6	6.5	8.4	V
Reverse leakage current	$V_{RWM} = 5\text{V}$ , I/O to GND	$I_R$			100	nA
Surge clamping voltage (8/20 $\mu\text{s}$ )	$I_{PP} = 1\text{A}$ , Any I/O to GND (positive)	$V_c$			8	V
	$I_{PP} = 7\text{A}$ , Any I/O to GND (positive)	$V_c$			11	
TLP dynamic resistance	I/O to GND (positive)	$R_{DYN}$		0.19		$\Omega$
Junction capacitance	$V_R = 0\text{V}$ , $f = 1\text{MHz}$ , I/O to GND	$C_J$		13.5	20	pF

REV:A

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Typical Rating and Characteristic Curves (CPDZ5V0HE-HF)

Fig.1 - Clamping Voltage (TLP)

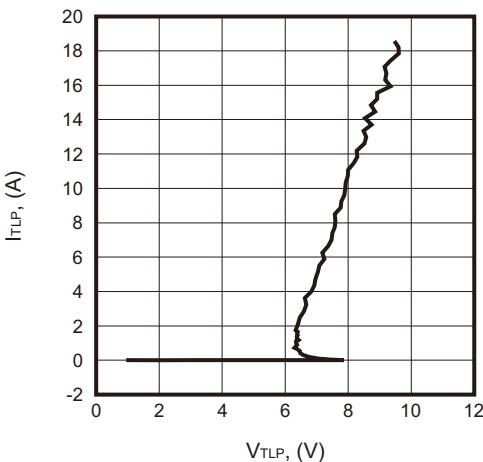


Fig.2 - Junction Capacitance

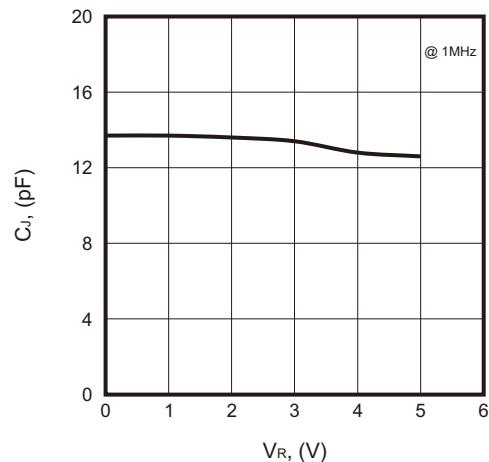
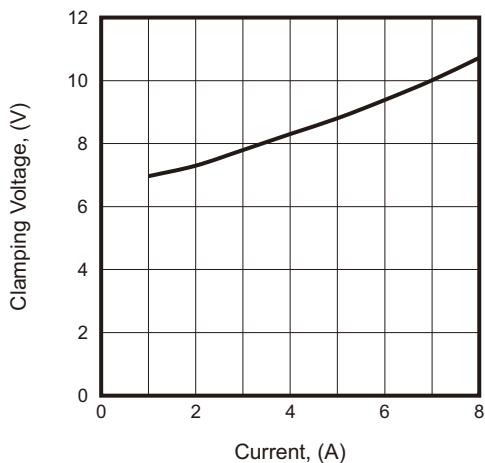
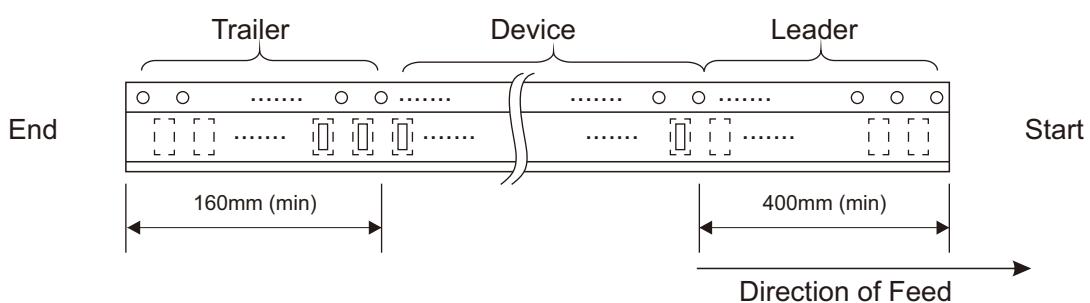
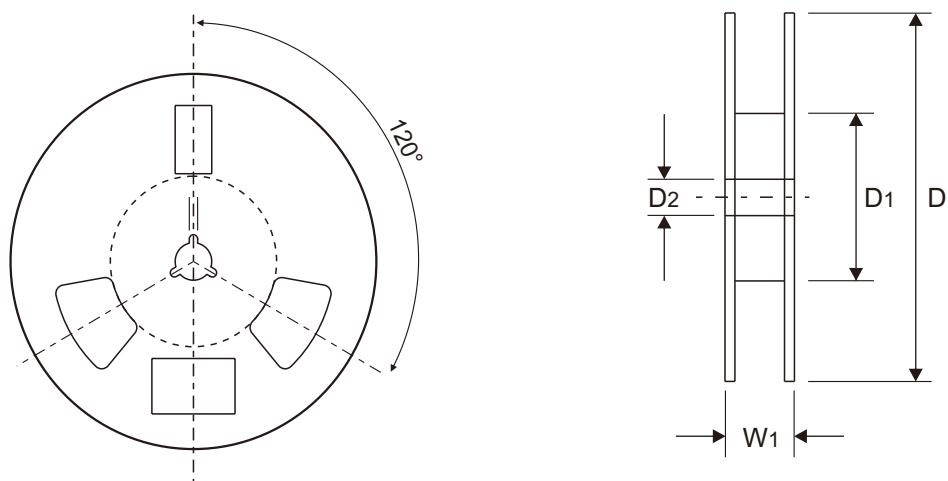
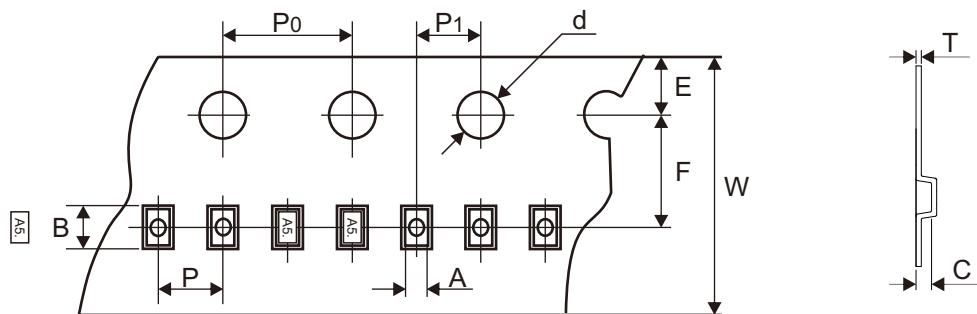


Fig.3 -  $I_{PP}$  vs Clamping Voltage



## Reel Taping Specification



DFN0603 -2L	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	$0.38 \pm 0.03$	$0.68 \pm 0.03$	$0.36 \pm 0.03$	$1.50 + 0.10$ $- 0.00$	$178.00 \pm 1.00$	$54.50 \pm 0.50$	$13.00 \pm 0.20$
	(inch)	$0.015 \pm 0.001$	$0.027 \pm 0.001$	$0.014 \pm 0.001$	$0.059 + 0.004$ $- 0.000$	$7.008 \pm 0.039$	$2.146 \pm 0.020$	$0.512 \pm 0.008$

DFN0603 -2L	SYMBOL	E	F	P	$P_0$	$P_1$	T	W	W1
	(mm)	$1.75 \pm 0.10$	$3.50 \pm 0.05$	$2.00 \pm 0.05$	$4.00 \pm 0.10$	$2.00 \pm 0.05$	$0.20 \pm 0.02$	$8.00 + 0.30$ $- 0.10$	$11.50 \pm 0.50$
	(inch)	$0.069 \pm 0.004$	$0.138 \pm 0.002$	$0.079 \pm 0.002$	$0.157 \pm 0.004$	$0.079 \pm 0.002$	$0.008 \pm 0.001$	$0.315 + 0.012$ $- 0.004$	$0.453 \pm 0.020$