

## CPDZC5V0SPC-HF

RoHS Device  
Halogen Free



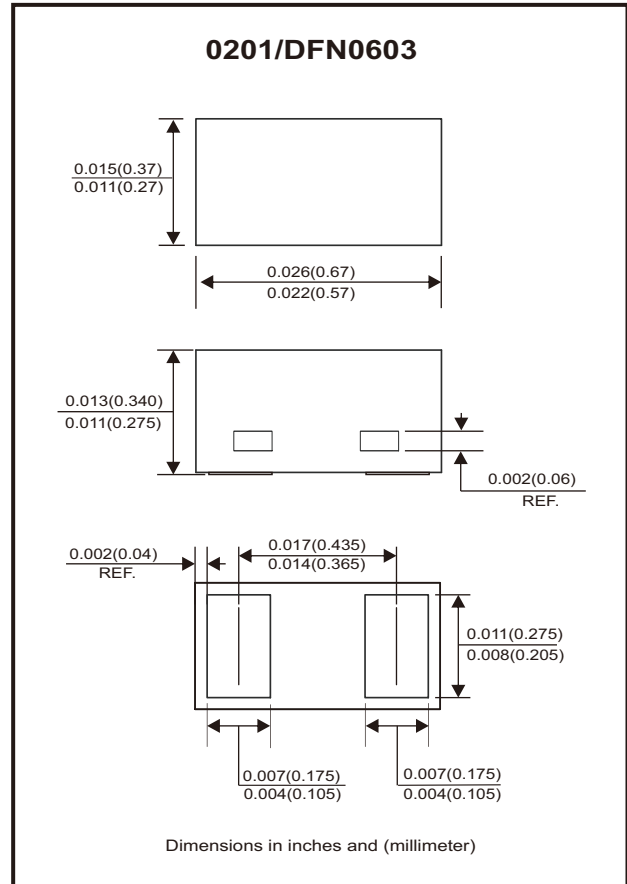
### Features

- Bi-directional ESD protection.
- IEC 61000-4-2 ESD protection up to  $\pm 15\text{KV}$ .
- Surface mount package.
- Ultra small SMD package:0201
- High component density.
- Low clamping voltage.
- Low leakage.
- Ultra-Low capacitance:  $<0.2\text{ pF}$

### Mechanical data

- Case: 0201/DFN0603 package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Mounting position: Any
- Weight: 0.0004 grams(approx.).

### Circuit diagram



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

Parameter	Conditions	Symbol	Value	Unit
Peak pulse power	$T_P = 8/20\mu\text{s}$	$P_{PP}$	30	W
Peak pulse current	$T_P = 8/20\mu\text{s}$ (Note 1)	$I_{PP}$	2	A
ESD capability	IEC 61000-4-2(air) IEC 61000-4-2(contact) (Note 2)	ESD	$\pm 15$	kV
Operation temperature range		$T_j$	$-40\sim+125$	$^\circ\text{C}$
Storage temperature range		$T_{STG}$	$-55\sim+150$	$^\circ\text{C}$

Notes: 1. Non-repetitive current pulse 8/20us exponential decay waveform according to IEC 61000-4-5  
2. ESD according to IEC61000-4-2

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Working peak reverse voltage		$V_{RWM}$			5	V
Breakdown voltage	$I_T = 1\text{mA}$	$V_{BR}$	6	9		V
Reverse leakage current	$V_{RWM} = 5\text{V}$	$I_R$		1	50	nA
Clamping voltage	$I_{PP} = 1\text{A}, T_P = 8/20\mu\text{s}$	$V_C$		11		V
	$I_{PP} = 2\text{A}, T_P = 8/20\mu\text{s}$ (Note 1)			14		
Clamping voltage	$I_{PP} = 8\text{A}, T_P = 100\text{ns}$	$V_{CL}$		21		V
	$I_{PP} = 16\text{A}, T_P = 100\text{ns}$			30		
Dynamic resistance		$R_{DYN}$		1.1		$\Omega$
Junction capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$	$C_J$			0.2	pF

Notes: 1. Non-repetitive current pulse 8/20us exponential decay waveform according to IEC 61000-4-5

## RATING AND CHARACTERISTIC CURVES (CPDZC5V0SPC-HF)

Fig.1 - 8/20us Peak Pulse Current Waveform Acc. IEC 61000-4-5

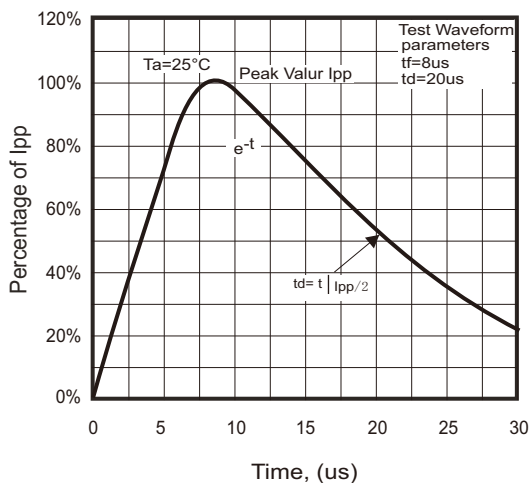


Fig.2 - Power Rating Derating Curve

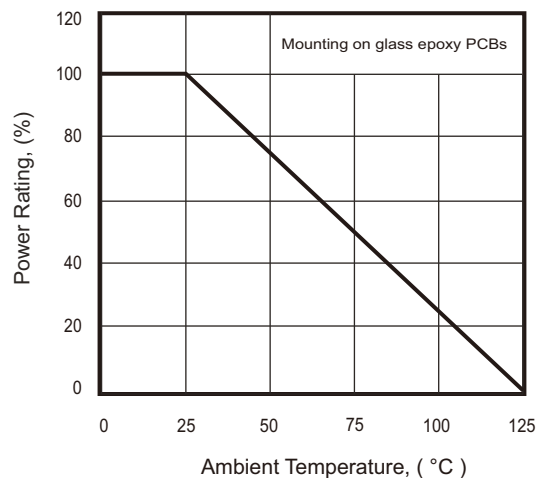


Fig.3 - Capacitance Between Terminals Characteristics

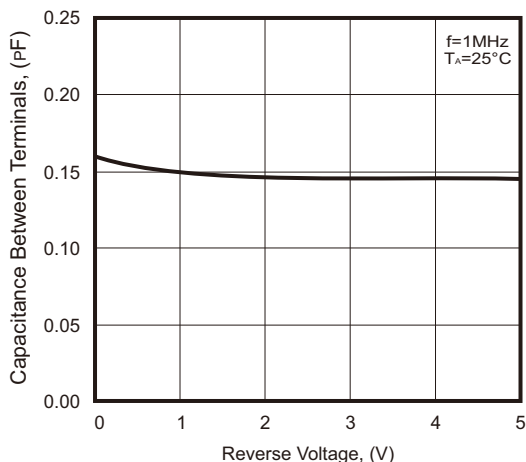
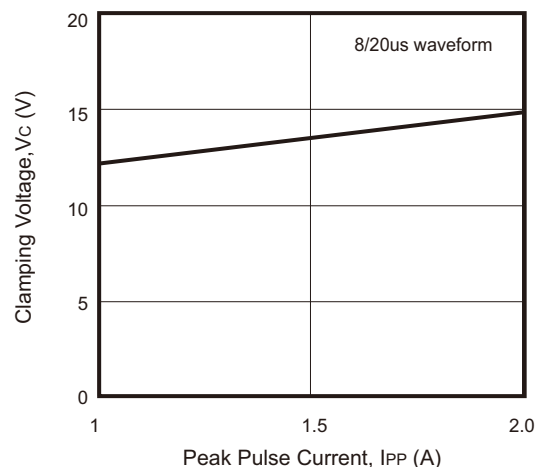


Fig.4 - Clamping Voltage Vs. Peak Pulse Current



## RATING AND CHARACTERISTIC CURVES (CPDZC5V0SPC-HF)

Fig.5 - Insertion Loss, Typical Values

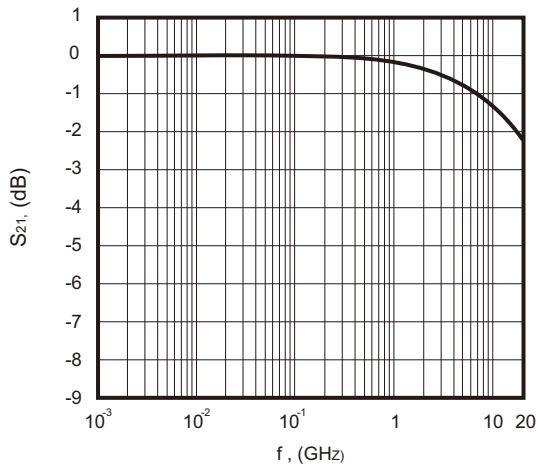


Fig.6 - Positive TLP IV Curve

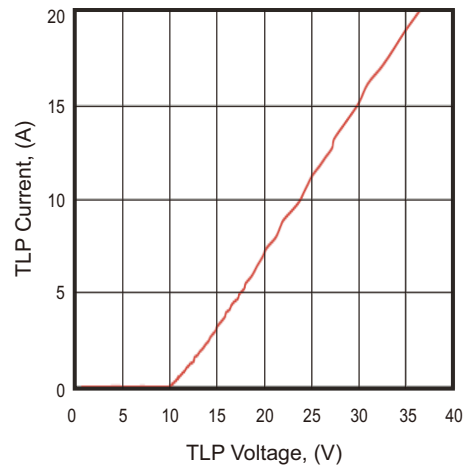
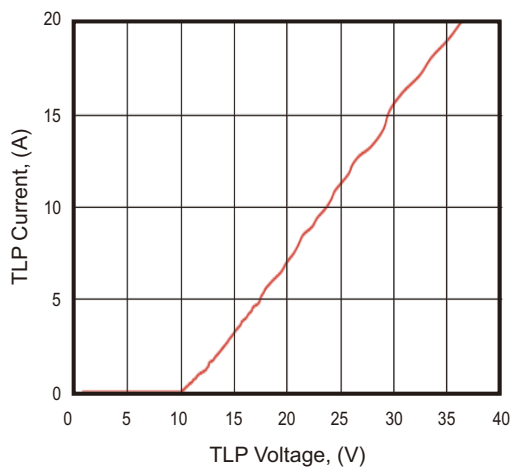
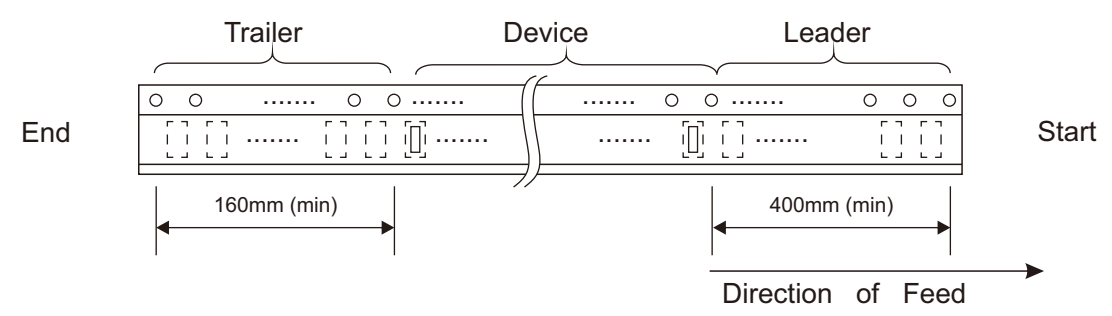
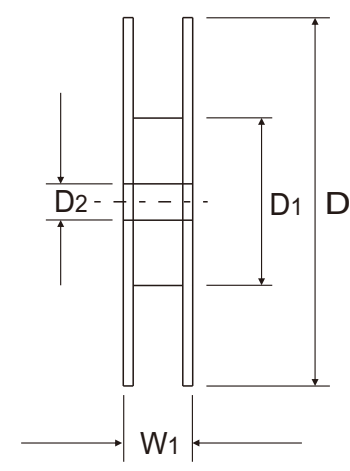
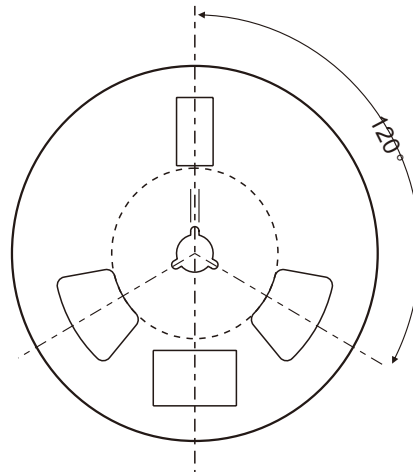
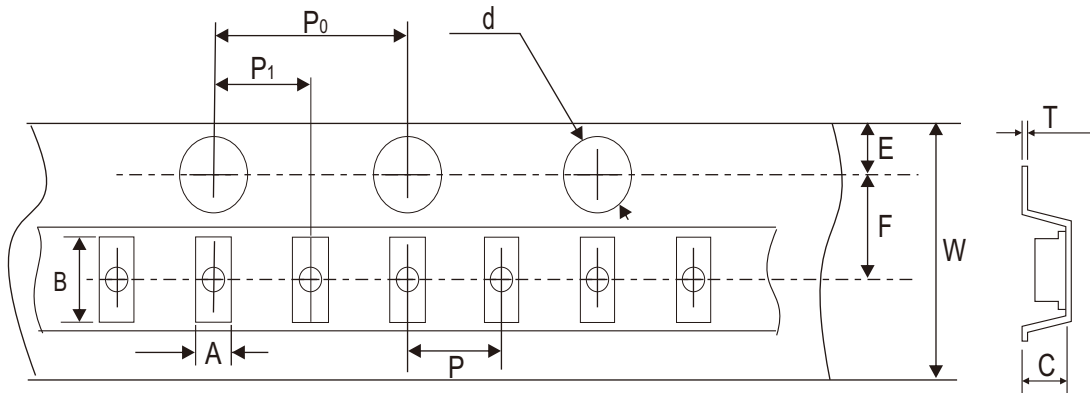


Fig.7 - Negative TLP IV Curve



## Reel Taping Specification



0201 (DFN0603)	SYMBOL	A	B	C	d	D	D <sub>1</sub>	D <sub>2</sub>
	(mm)	0.37 ± 0.03	0.67 ± 0.03	0.35 ± 0.03	1.50 + 0.10 - 0.00	178.00 ± 1.00	60.00 ± 0.50	13.50 ± 0.20
	(inch)	0.015 ± 0.001	0.026 ± 0.001	0.014 ± 0.001	0.059 + 0.004 - 0.000	7.008 ± 0.039	2.362 ± 0.020	0.531 ± 0.008

0201 (DFN0603)	SYMBOL	E	F	P	P <sub>0</sub>	P <sub>1</sub>	T	W	W <sub>1</sub>
	(mm)	1.75 ± 0.10	3.50 ± 0.05	2.00 ± 0.05	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.02	8.00 + 0.30 - 0.10	12.00 + 0.50 - 0.00
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.002	0.157 ± 0.004	0.079 ± 0.002	0.008 ± 0.001	0.315 + 0.012 - 0.004	0.472 + 0.020 - 0.000

Company reserves the right to improve product design, functions and reliability without notice.

REV:A

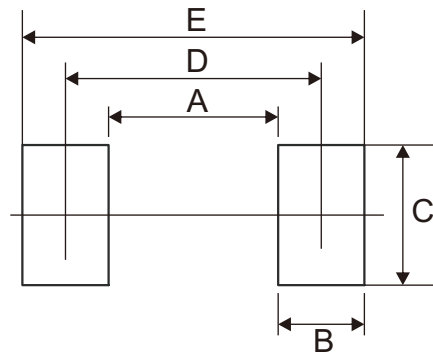
## Marking Code

Part Number	Marking Code
CPDZC5V0SPC-HF	5SP

5SP

## Suggested PAD Layout

SIZE	0201(DFN0603)	
	(mm)	(inch)
A	0.16	0.006
B	0.24	0.009
C	0.34	0.013
D	0.40	0.016
E	0.64	0.025



## Standard Packaging

Case Type	Qty Per Reel	Reel Size
	(Pcs)	(inch)
0201(DFN0603)	10,000	7