



**THE DATASHEET OF
CPDZC5V0SPC-HF**



CPDZC5V0SPC-HF

RoHS Device
Halogen Free



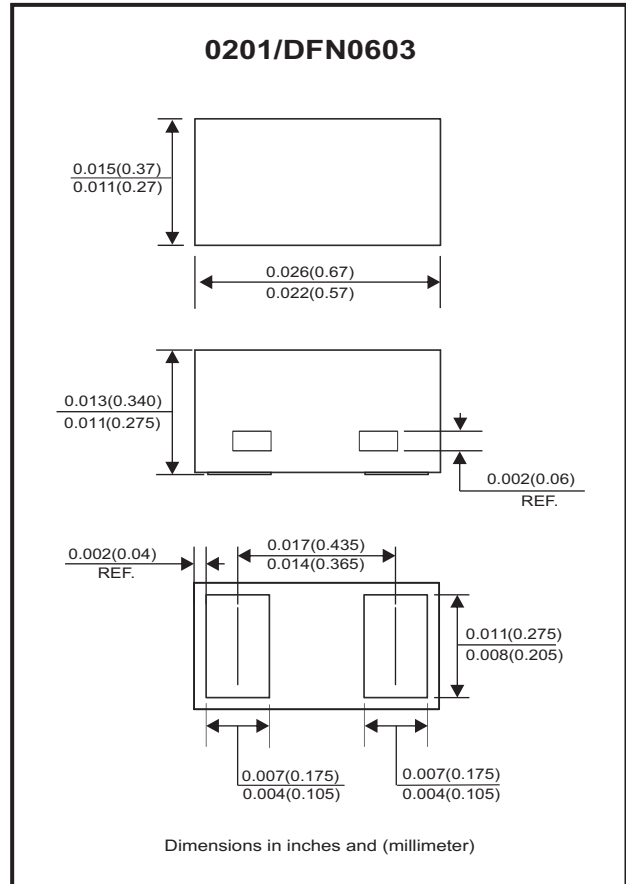
Features

- Bi-directional ESD protection.
- IEC 61000-4-2 ESD protection up to ± 15 kV.
- Surface mount package.
- Ultra small SMD package: 0201
- High component density.
- Low clamping voltage.
- Low leakage.
- Ultra-Low capacitance: < 0.2 pF

Mechanical data

- Case: 0201/DFN0603 package, molded plastic.
- Terminals: Gold plated, solderable per MIL-STD-750, method 2026.
- Polarity: Color band denotes cathode end.
- 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	± 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		Ω
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

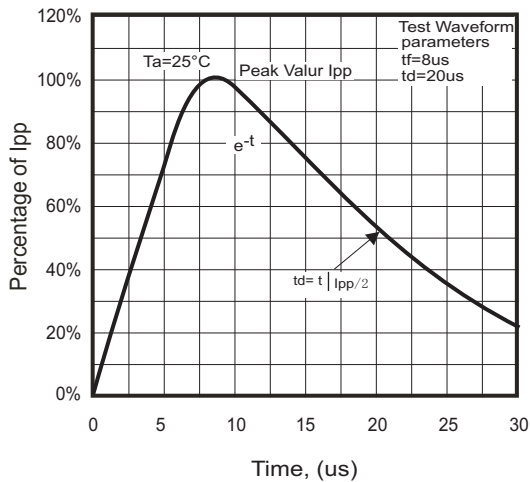


Fig.2 - Power Rating Derating Curve

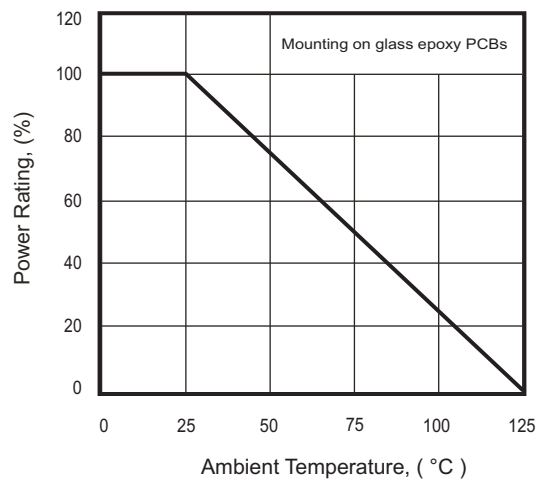


Fig.3 - Capacitance Between Terminals Characteristics

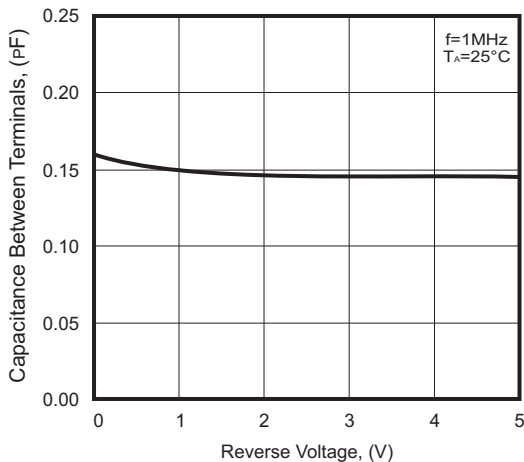
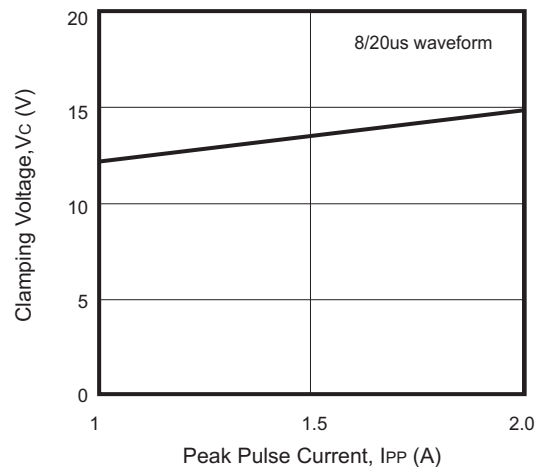


Fig.4 - Clamping Voltage Vs. Peak Pulse Current



RATING AND CHARACTERISTIC CURVES (CPDZC5V0SPC-HF)

Fig.5 - Insertion Loss, Typical Values

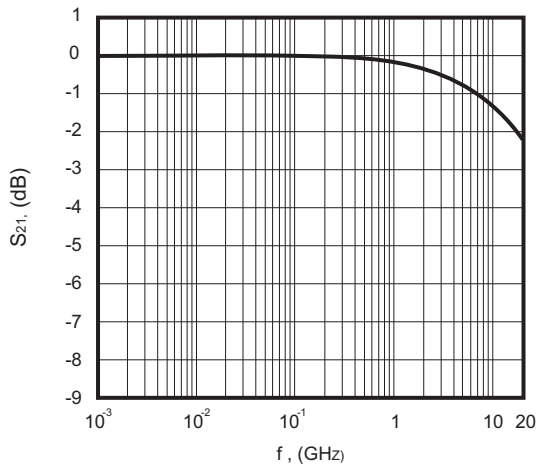


Fig.6 - Positive TLP IV Curve

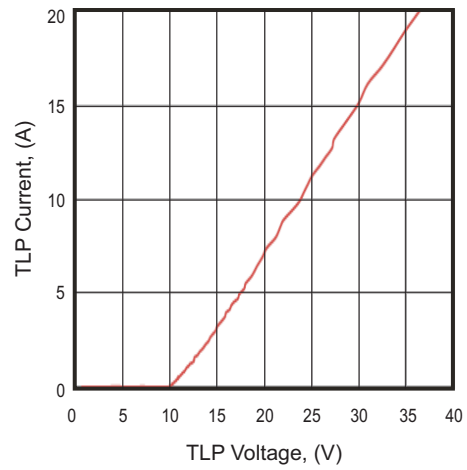
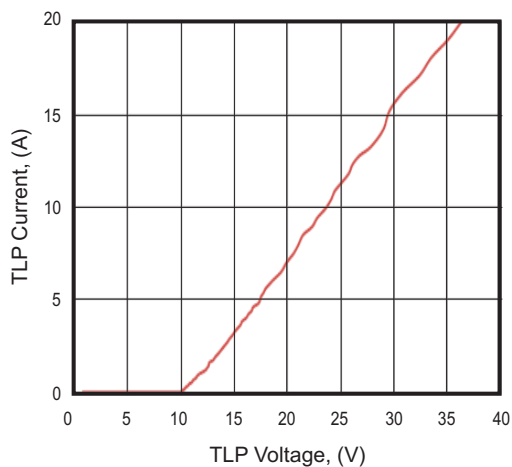
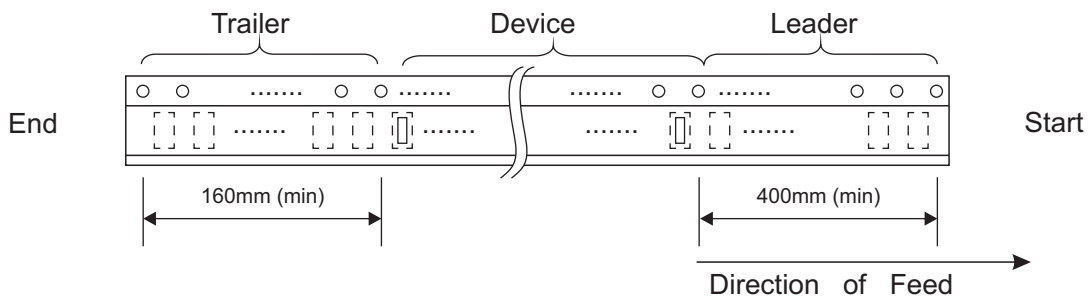
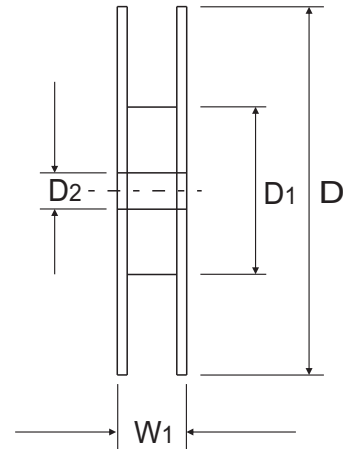
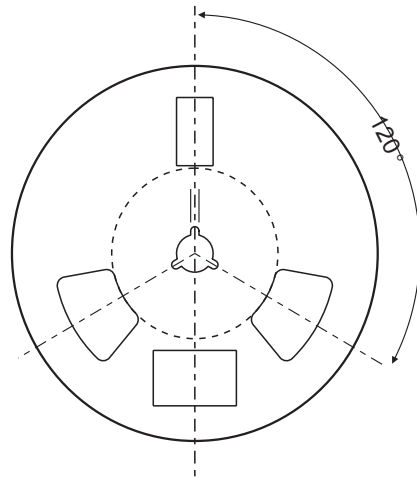
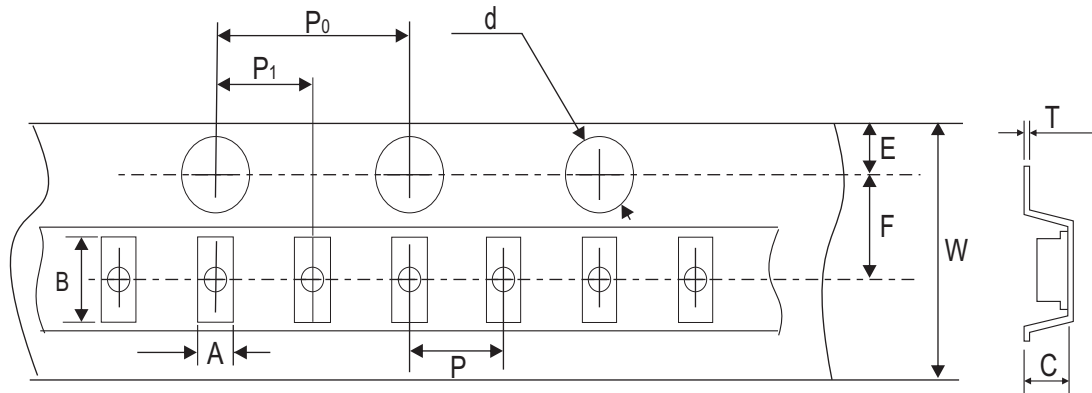


Fig.7 - Negative TLP IV Curve



Reel Taping Specification



0201 (DFN0603)	SYMBOL	A	B	C	d	D	D ₁	D ₂
	(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 ₀	P ₁	T	W	W ₁
	(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

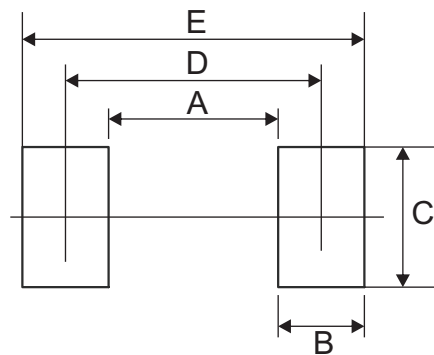
Marking Code

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

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