

ACPDZC5V0SPC-HF

RoHS Device
Halogen Free

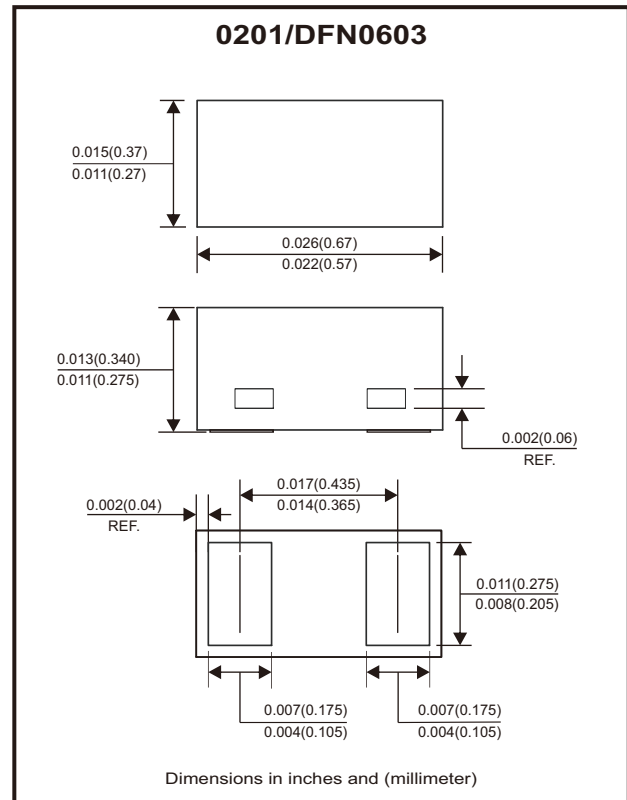


Features

- 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: $<0.2\text{ pF}$
- AEC-Q101 Qualified.

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	± 15	kV
Operating 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 $8/20\mu\text{s}$ exponential decay waveform according to IEC 61000-4-5.

2. ESD according to IEC 61000-4-2.

Electrical Characteristics (at $T_A=25^\circ\text{C}$ 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 8/20 μs exponential decay waveform according to IEC 61000-4-5.

Rating and Characteristic Curves (ACPDZC5V0SPC-HF)

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

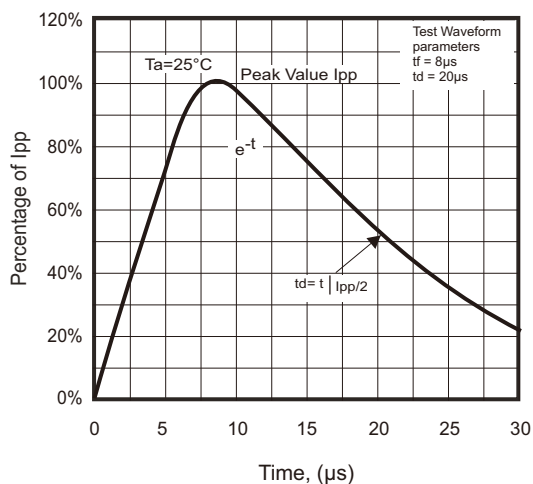


Fig.2 - Power Rating Derating Curve

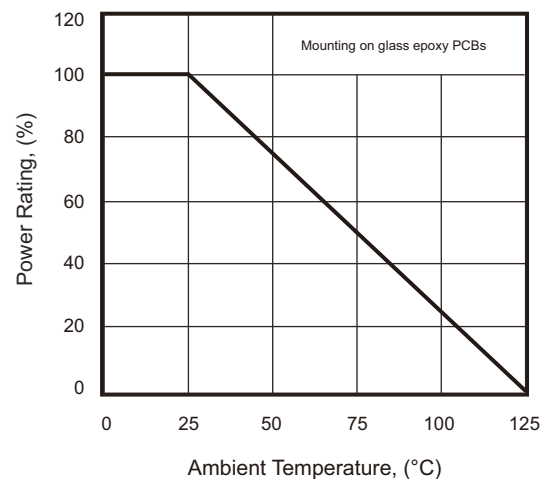


Fig.3 - Capacitance Between Terminals Characteristics

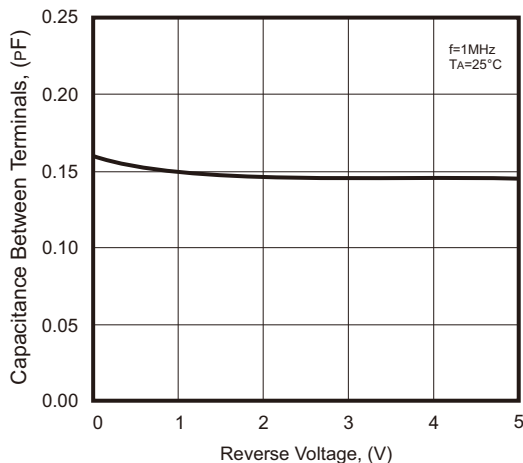
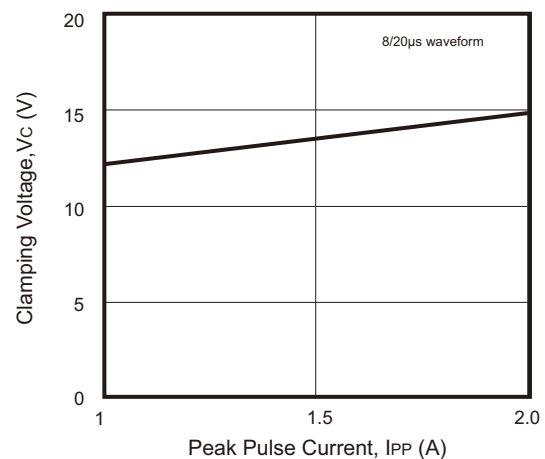


Fig.4 - Clamping Voltage Vs. Peak Pulse Current



Rating and Characteristic Curves (ACPDZC5V0SPC-HF)

Fig.5 - Insertion Loss, Typical Values

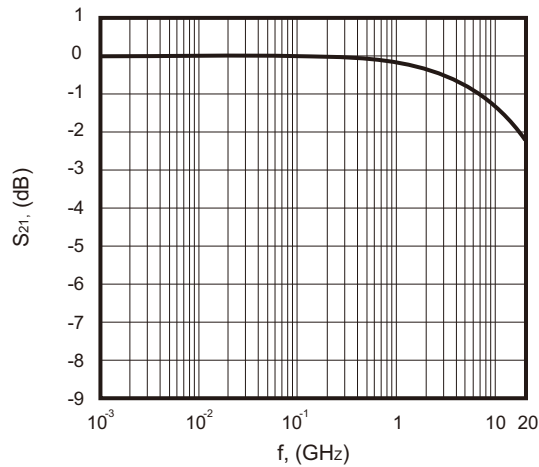


Fig.6 - Positive TLP IV Curve

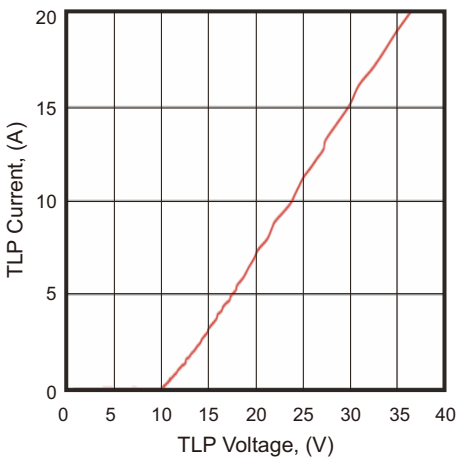
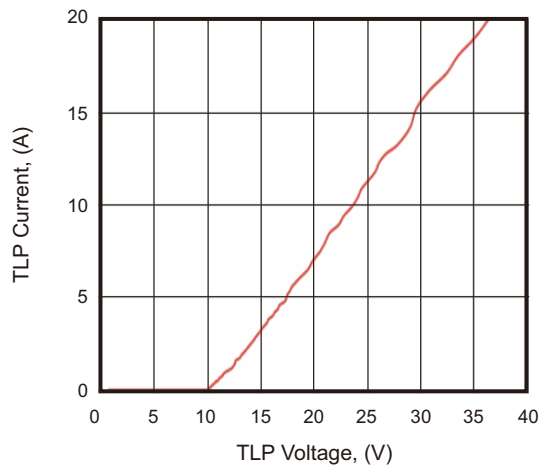
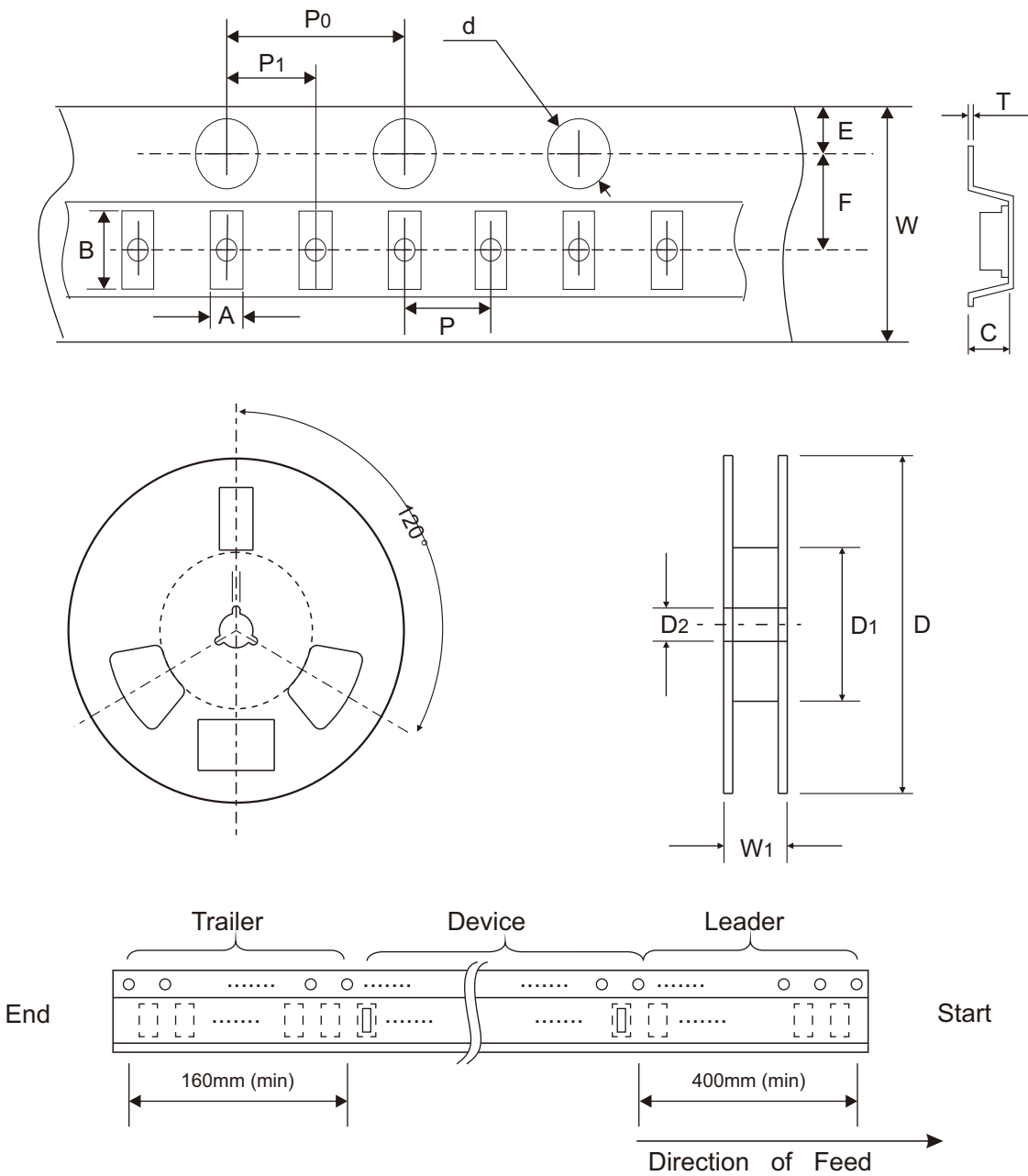


Fig.7 - Negative TLP IV Curve



Reel Taping Specification



0201 (DFN0603)	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	0.44 ± 0.03	0.74 ± 0.03	0.40 ± 0.03	$1.50 + 0.10$ $- 0.00$	178.00 ± 1.00	60.00 ± 0.50	13.50 ± 0.20
	(inch)	0.017 ± 0.001	0.029 ± 0.001	0.016 ± 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	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	2.00 ± 0.05	4.00 ± 0.10	2.00 ± 0.05	0.20 ± 0.03	$8.00 + 0.30$ $- 0.10$	$12.00 + 0.50$ $- 0.00$
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.079 ± 0.002	0.157 ± 0.004	0.079 ± 0.002	0.008 ± 0.001	$0.315 + 0.012$ $- 0.004$	$0.472 + 0.020$ $- 0.000$

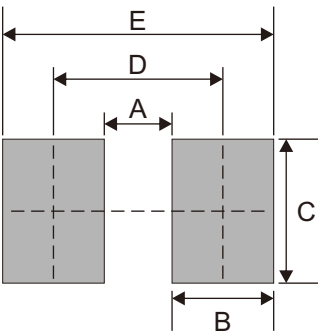
Marking Code

Part Number	Marking Code
ACPDZC5V0SPC-HF	5SP

5SP

Suggested P.C.B. 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	REEL PACK	
	REEL (pcs)	Reel Size (inch)
0201 (DFN0603)	10,000	7