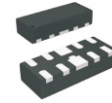


ACPDWR101V5SBP-HF

RoHS Device

Halogen Free



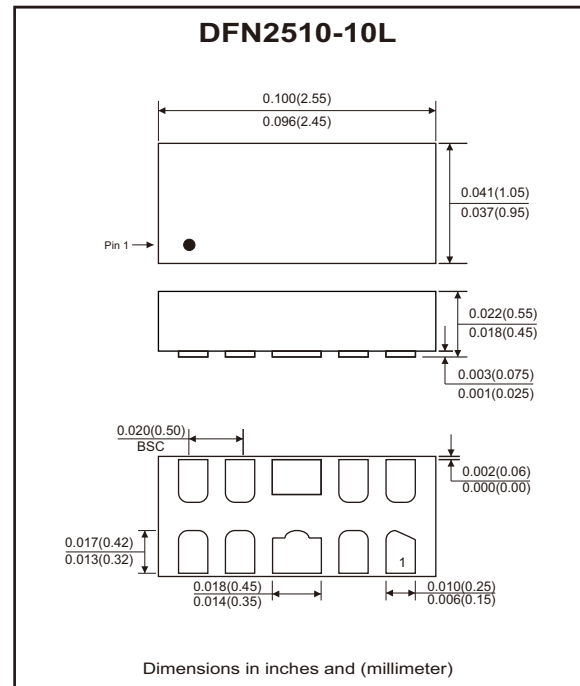
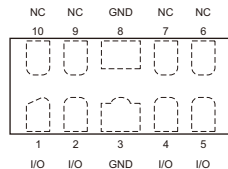
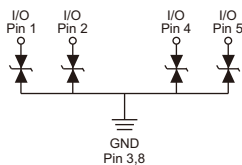
Features

- Solid-state silicon-avalanche technology.
- Low clamping voltage.
- Low leakage current.
- IEC 61000-4-2 (ESD) $\pm 15\text{kV}$ (air), $\pm 12\text{kV}$ (contact)
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 4A (8/20 μs)
- AEC-Q101 Qualified.

Mechanical data

- Case: DFN2510-10L, molded plastic.
- Mounting position: Any.

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}	16	W
Peak pulse current	$T_P = 8/20\mu\text{s}$	I_{PP}	4	A
ESD capability	IEC 61000-4-2(air) IEC 61000-4-2(contact)	ESD	± 15 ± 12	kV
Lead soldering temperature (10s)		T_L	260	$^\circ\text{C}$
Operating junction temperature range		T_J	-55 to +125	$^\circ\text{C}$
Storage temperature range		T_{STG}	-55 to +150	$^\circ\text{C}$

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

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
Working peak reverse voltage		V_{RWM}			1.5	V
Breakdown voltage	$I_T = 0.1\text{mA}$	V_{BR}	3			V
Reverse leakage current	$V_{RWM} = 1.5\text{V}$	I_R			0.1	μA
ESD Dynamic turn-on resistance	IEC 61000-4-2 0~+8kV, Contact mode, T=25°C	R_{DYN}		0.2		Ω
Clamping voltage	$I_{PP} = 1\text{A}$, $T_P = 8/20\mu\text{s}$	V_C		1.85	2.5	V
	$I_{PP} = 4\text{A}$, $T_P = 8/20\mu\text{s}$	V_C		3.2	4	
Junction capacitance	$V_R = 0\text{V}$, $f = 1\text{MHz}$, I/O to GND	C_J		0.3		pF
	$V_R = 1\text{V}$, $f = 1\text{MHz}$, I/O to GND	C_J		0.25	0.35	pF
	$V_R = 0\text{V}$, $f = 1\text{MHz}$, Between any I/O	C_J		0.13		pF

Notes: 1. The default test is I/O pin to ground.

2. The strong snap-back to a low holding voltage move into latch-up mode by an ESD event.

When designing the printed-circuit board (PCB), give careful consideration to impedance matching and signal coupling.

Do not connect the data lines to unlimited DC current sources like, for example, a battery, to avoid the device is "locked" in conducting mode.

Typical Rating and Characteristic Curves (ACPDWR101V5SBP-HF)

Fig.1 - TLP

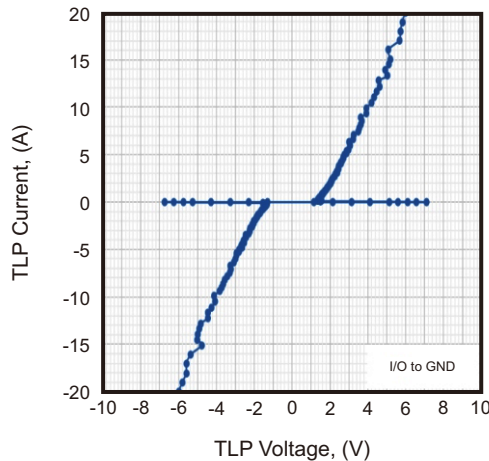


Fig.2 - Typical Variation of C_{IN} VS. V_{IN}

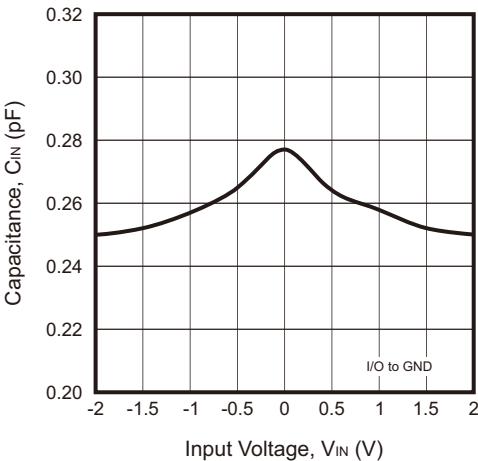


Fig.3 - Insertion loss S21

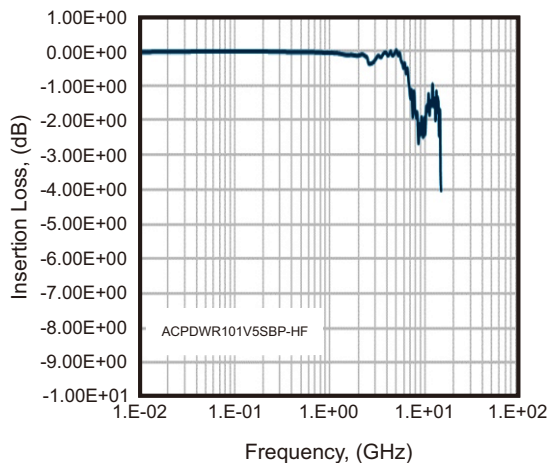


Fig.4 - IEC 61000-4-5 Surge 8/20 μ s

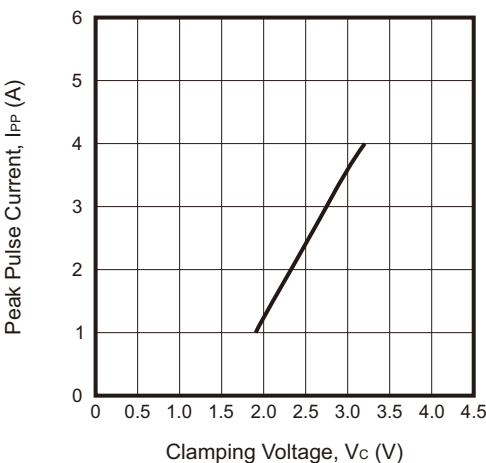
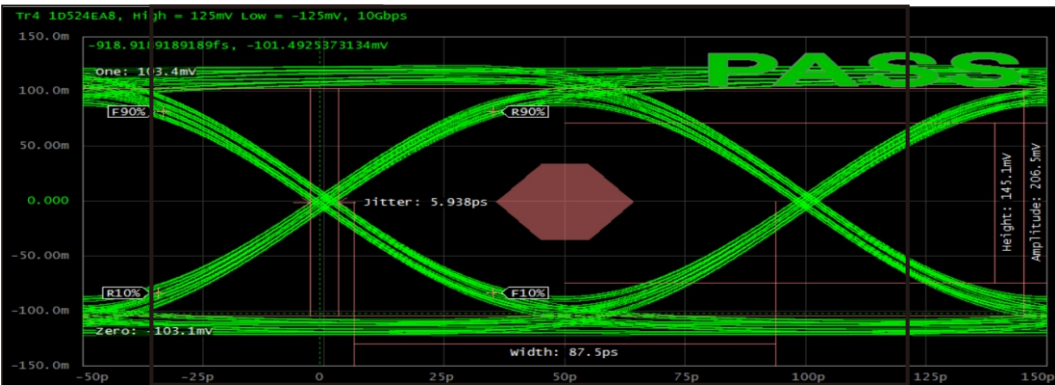
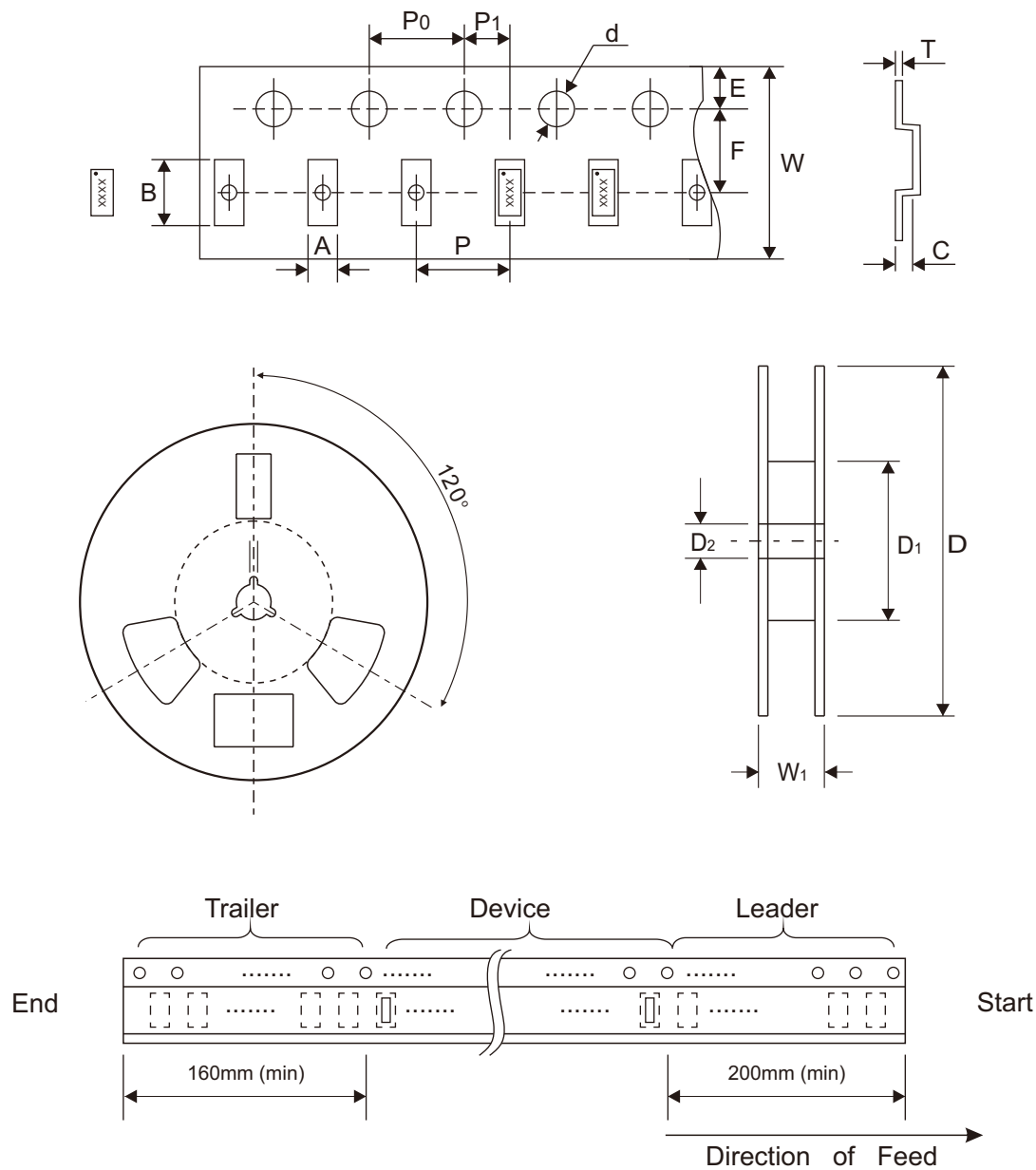


Fig.5 - USB 3.1 Gen 2 Eye Diagram with Device
(Data rate: 10Gbps)



Reel Taping Specification



DFN2510-10L	SYMBOL	A	B	C	d	D	D1	D2
	(mm)	1.20 ± 0.05	2.70 ± 0.05	0.70 ± 0.05	$1.50 + 0.10 - 0.00$	178.00 ± 1.00	54.50 ± 0.50	14.30 ± 0.20
	(inch)	0.047 ± 0.002	0.106 ± 0.002	0.028 ± 0.002	$0.059 + 0.004 - 0.000$	7.008 ± 0.039	2.146 ± 0.020	0.563 ± 0.008

DFN2510-10L	SYMBOL	E	F	P	P0	P1	T	W	W1
	(mm)	1.75 ± 0.10	3.50 ± 0.05	4.00 ± 0.05	4.00 ± 0.05	2.00 ± 0.05	0.22 ± 0.03	$8.00 + 0.30 - 0.10$	12.40 ± 0.50
	(inch)	0.069 ± 0.004	0.138 ± 0.002	0.157 ± 0.002	0.157 ± 0.002	0.079 ± 0.002	0.009 ± 0.001	$0.315 + 0.012 - 0.004$	0.488 ± 0.020

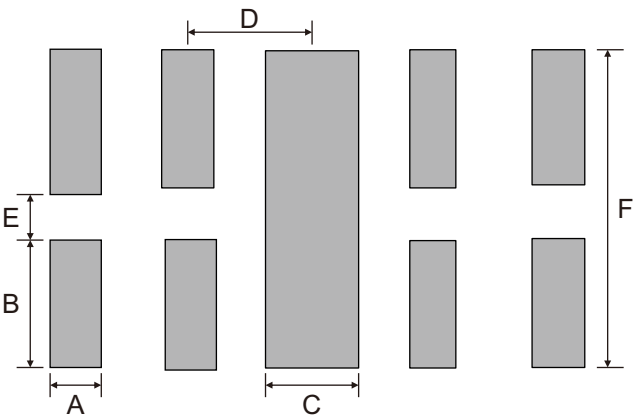
Marking Code

Part Number	Marking Code
ACPDWR101V5SBP-HF	1SN4



Suggested P.C.B. PAD Layout

SIZE	DFN2510-10L	
	(mm)	(inch)
A	0.20	0.008
B	0.60	0.024
C	0.40	0.016
D	0.50	0.020
E	0.20	0.008
F	1.40	0.055



Standard Packaging

Case Type	REEL PACK	
	REEL (pcs)	Reel Size (inch)
DFN2510-10L	3,000	7