



DW05-4R2PC-S ESD Protection Diode

Feature

- Uni-directional ESD protection of four lines
- 56Watts peak pulse power ($t_p = 8/20\mu s$)
- Working voltage: 5V
- Junction Capacitance: 0.5pF(Typ I/O to I/O)
- Low clamping voltage
- Low leakage current
- IEC 61000-4-2 $\pm 20kV$ contact $\pm 20kV$ air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 4A (8/20 μs)

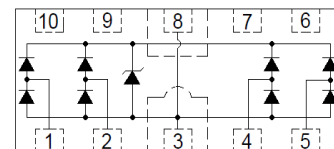
Application

- USB2.0,USB3.0,Ethernet
- HDMI2.0,Displayport1.3,eSATA
- Unified Display interface
- Digital Visual Interface
- High speed serial interface

Mechanical Data

- Package: DFN2510-10L
- Molding compound flammability rating: UL 94V-0
- RoHS/WEEE Compliant

Schematic & PIN Configuration



Ordering Information

Part Number	Package	Marking	QTY per Reel	Reel Size
DW05-4R2PC-S	DFN2510-10L	524F	3000 pcs	7 inches



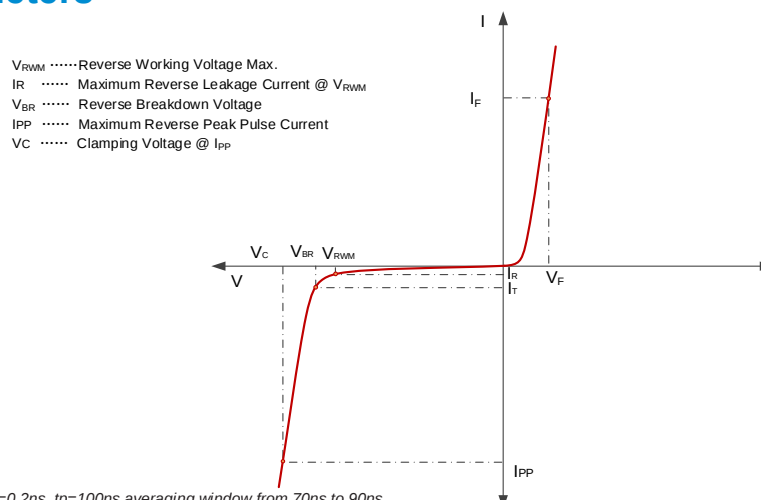
Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 μs)	P_{PK}	56	W
Peak Pulse Current (8/20 μs)	I_{PP}	4	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	± 20 ± 20	kV
Lead Soldering Temperature	T_L	260 (10seconds)	$^{\circ}\text{C}$
Junction Temperature	T_J	-55 to +125	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 to +125	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

Parameter	Symbol	Conditions	Min	Typical	Max	Units
Reverse Stand-Off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	$I_T=1\text{mA}$	6			V
Reverse Leakage Current	I_R	$V_{RWM}=5\text{V}, T=25^{\circ}\text{C}$			0.5	μA
Peak Pulse Current	I_{PP}	$t_p=8/20\mu\text{s}$			4	A
Clamping Voltage	V_C	$I_{PP}=4\text{A}, t_p=8/20\mu\text{s}$			14	V
Junction Capacitance	C_J	$V_R=0\text{V}, f=1\text{MHz}$ I/O to I/O		0.22	0.3	pF
		$V_R=0\text{V}, f=1\text{MHz}$ I/O to GND		0.5	0.6	

Electrical Parameters



Notes: (1) TLP parameter : $Z_0=50\Omega, t_r=0.2\text{ns}, t_p=100\text{ns}$, averaging window from 70ns to 90ns.

(2) Dynamic resistance calculated from $I_{PP}=4\text{A}$ to $I_{PP}=16\text{A}$.



Typical Characteristics

Fig.1 Peak Pulse Power Rating Curve

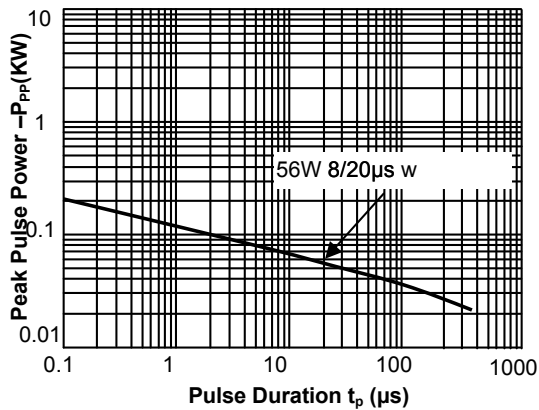


Fig.2 Pulse Derating Curve

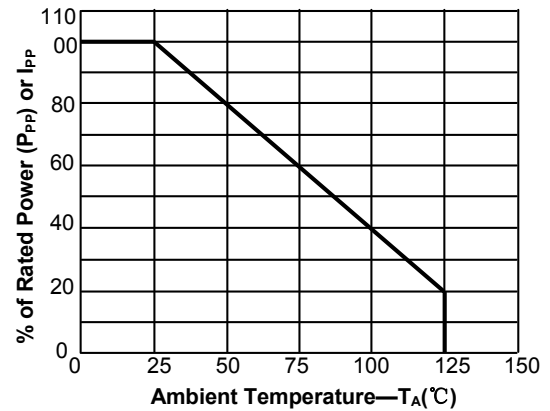


Fig.3 Pulse Waveform-8/20 μ s

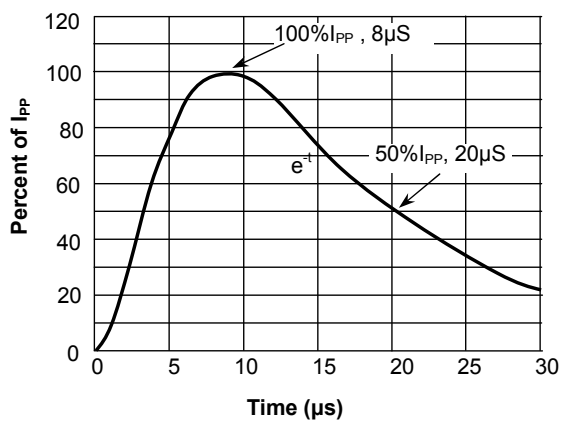


Fig.4 Pulse Waveform-ESD(IEC61000-4-2)

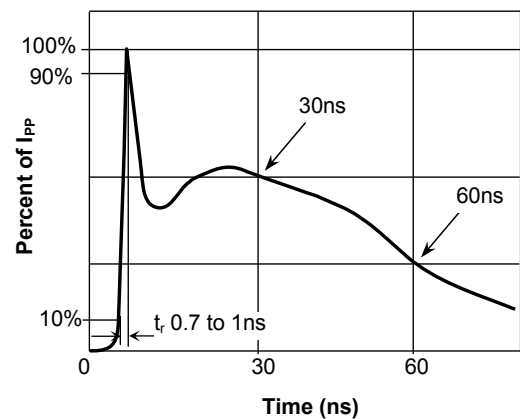


Fig.5 Eye Diagram - HDMI mask at 3.4Gbps per channel

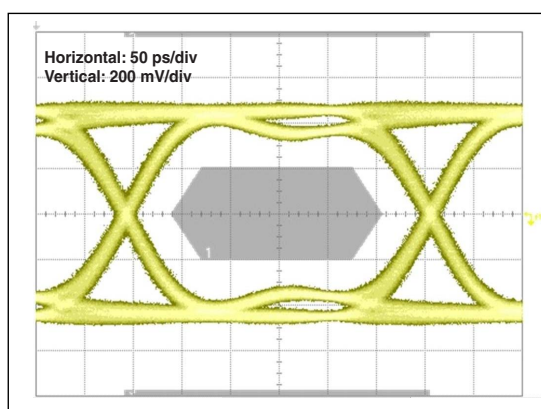
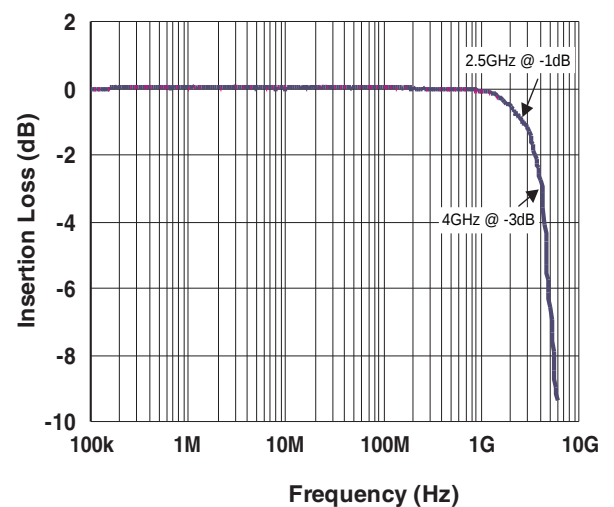
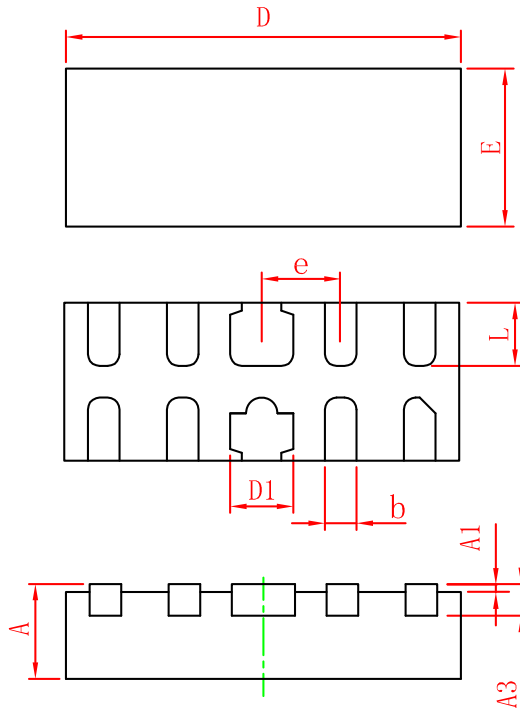


Fig.6 Insertion Loss S21 - I/O to GND





DFN2510-10L Outline Drawing



Symbol	Dimensions in millimeters		
	Min	Nom	Max
A	0.45	0.50	0.55
A1	-	0.02	0.05
A3	0.10	0.15	0.20
D	2.45	2.50	2.55
E	0.95	1.00	1.05
D1	0.35	0.40	0.45
b	0.15	0.20	0.25
e	0.50BSC		
L	0.35	0.40	0.45