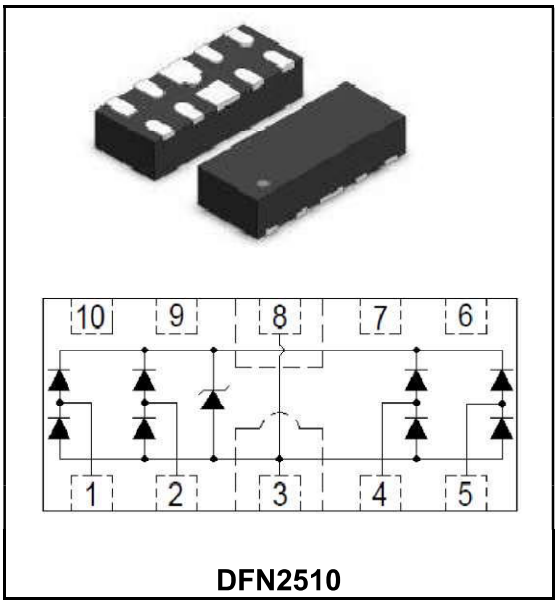
4 Channel Ultra-low Capacitance ESD Protection Diode



DFN2510

Features

- Ultra-Low capacitance:0.45pF(typ.)
- Reverse stand-off voltage:5 V
- IEC 61000-4-2 (ESD Air): ±20kV
- IEC 61000-4-2 (ESD Contact): ±20kV

Application

- USB 3.0, USB 2.0
- HDMI 1.3/1.4, Display Port 1.3, eSATA
- Unified Display Interface (UDI)
- Digital Visual Interface (DVI)
- High speed serial interfaces

Order Information

Part Number	Package	Marking	Size (mm)	Delivery Form	Delivery Quantity
ESD2510D5V0B	DFN2510	0524P	2.50X1.00X0.50	7" T&R	3000PCS/Tape

Limiting Values(TA = 25 °C, unless otherwise specified)

Symbol	Parameter	Conditions	Min	Max	Unit
VESD	Electrostatic Discharge Voltage	IEC 61000-4-2; Contact Discharge	-	±20	kV
		IEC 61000-4-2; Air Discharge	-	±20	kV
IPPM	Rated Peak Pulse Current	tP = 8/20 μs	-	4.5	A
PPP	Peak Pulse Power	tP = 8/20 μs	-	63	W
TA	Ambient Temperature Range	-	-55	125	℃
Tstg	Storage Temperature Range	-	-55	150	℃

Electrical Characteristics(TA = 25 °C unless otherwise specified

Symbol	Parameter	conditions	Min	Typ.	Max	Unit
V_{RWM}	Reverse Working Voltage	T_A= 25°℃	-	-	5	V
V_{BR}	Breakdown Voltage	I_R = 1 mA;T_A= 25 °c	6	-	-	V
I_R	Reverse Leakage current	V_{RWM} = 5V;TA= 25C	-	-	100	nA
V_C	Clamping Voltage	I_{PP}=1A,t_P=8/20us,Any I/O to GND , Positive	-	-	9.8	V
		I_{pp}=4.5A,t_P=8/20us, Any I/O to GND , Positive	-	-	14	V
C_L	Junction Capacitance	V_R = 0V, f= 1 MHz,I/O to I/O	-	0.22	0.3	pF
		V_R = 0V,f= 1 MHz, I/O to GND	-	0.45	0.6	pF

Typical Characteristics

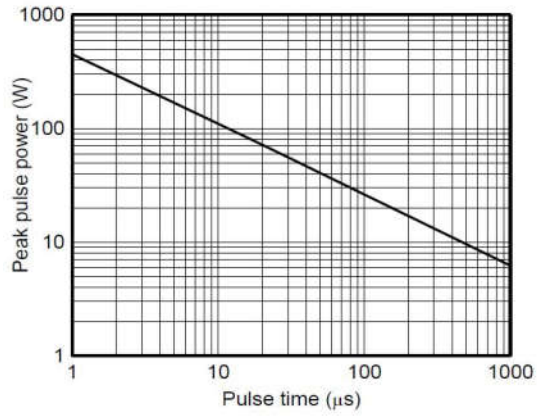


Fig.1 Peak Pulse Power Rating Cure

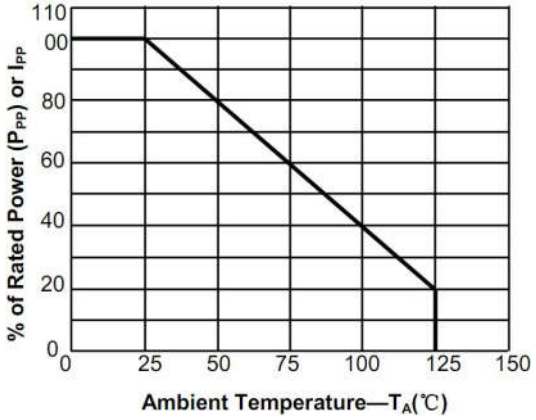


Fig.2 Pulse Derating Curve

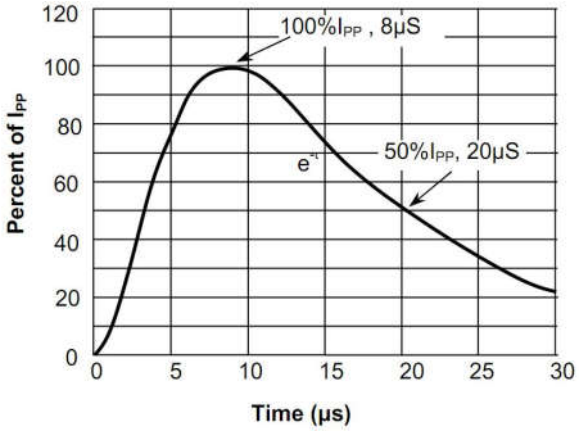


Fig.3 Pulse Waveform- 8/20us

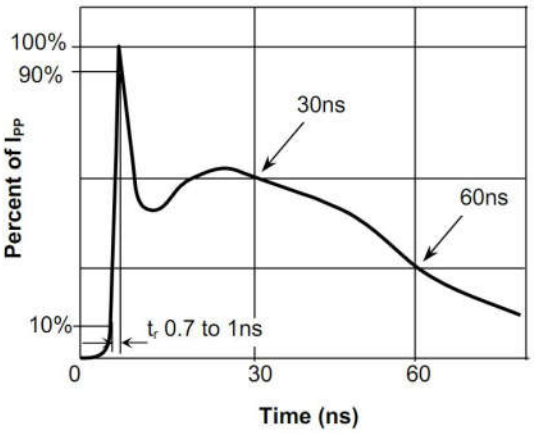
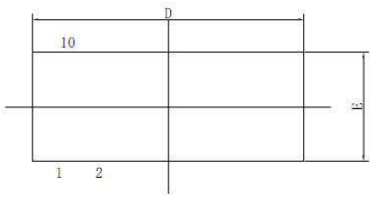


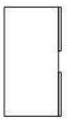
Fig.4 Pulse Waveform-ESD (IEC61000-4-2)

Package Dimension

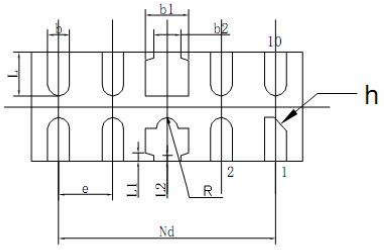
DFN2510 Package Outline



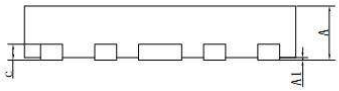
Top View



Side View

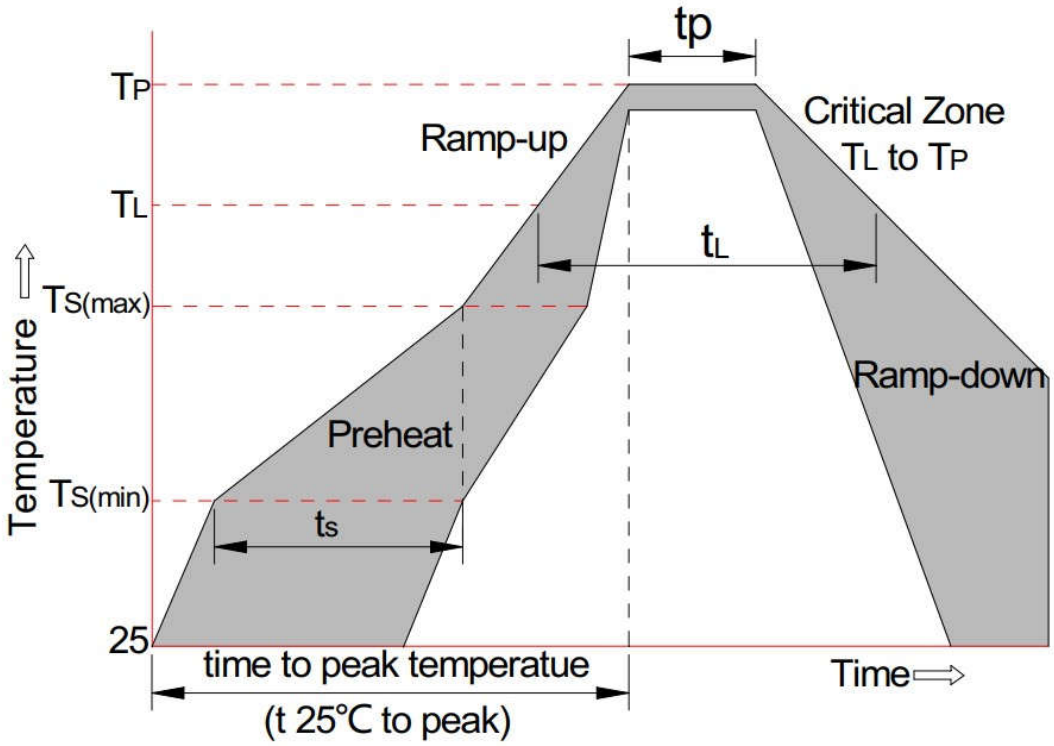


Bottom View



Symbol	Dimensions in millimeters		
	Min	Nom	Max
A	0.45	0.50	0.55
A1	-	0.02	0.05
b	0.15	0.20	0.25
b1	0.35	0.40	0.45
b2	0.20	0.25	0.30
c	0.10	0.15	0.20
D	2.45	2.50	2.55
e	0.50BSC		
Nd	2.00BSC		
E	0.95	1.00	1.05
L	0.35	0.40	0.45
L1	0.075REF		
L2	0.05REF		
h	0.08	0.12	0.15
R	0.05	0.10	0.15

Soldering Parameters



Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min (Ts(min))	+150°C
	-Temperature Max(Ts(max))	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (TL) to peak)		3°C/sec. Max
Ts(max) to TL - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(TL)(Liquid us)	+217°C
	-Temperature(tL)	60-150 secs.
Peak Temp (Tp)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (tp)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
xTime 25°C to Peak Temp (TP)		8 min. Max
Do not exceed		+260°C