

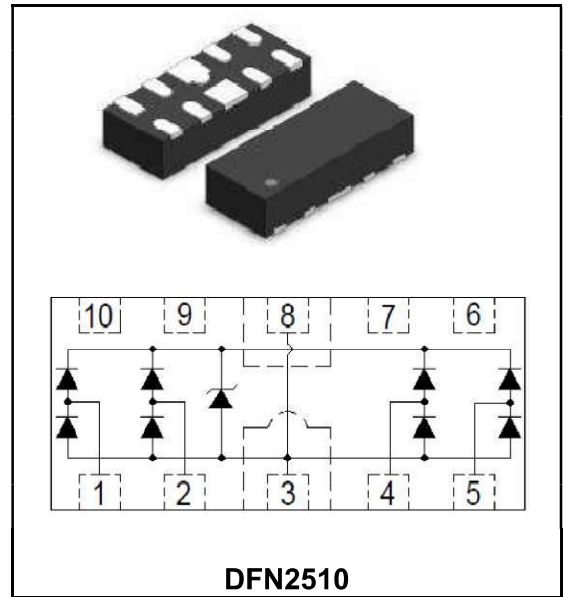
**4 Channel Ultra-low Capacitance  
ESD Protection Diode**

**Features**

- ◆Ultra-Low capacitance:0.5pF(typ.)
- ◆Reverse stand-off voltage:5 V
- ◆IEC 61000-4-2 (ESD Air): ±20kV
- ◆IEC 61000-4-2 (ESD Contact): ±15kV

**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
ESD2510D5V0A	DFN2510	5A.	2.50X1.00X0.50	7" T&R	3000PCS/Tape

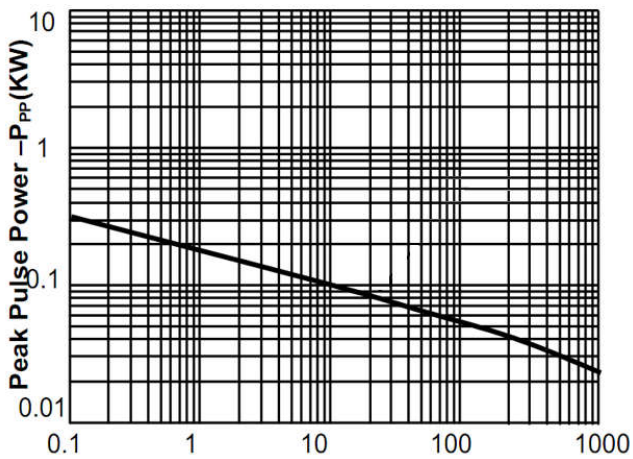
**Limiting Values(TA = 25 °C, unless otherwise specified)**

Symbol	Parameter	Conditions	Min	Max	Unit
VESD	Electrostatic Discharge Voltage	IEC 61000-4-2; Contact Discharge	-	±15	kV
		IEC 61000-4-2; Air Discharge	-	±20	kV
IPPM	Rated Peak Pulse Current	tP = 8/20 μs	-	5	A
PPP	Peak Pulse Power	tP = 8/20 μs	-	60	W
TA	Ambient Temperature Range	-	-55	125	°C
Tstg	Storage Temperature Range	-	-55	150	°C

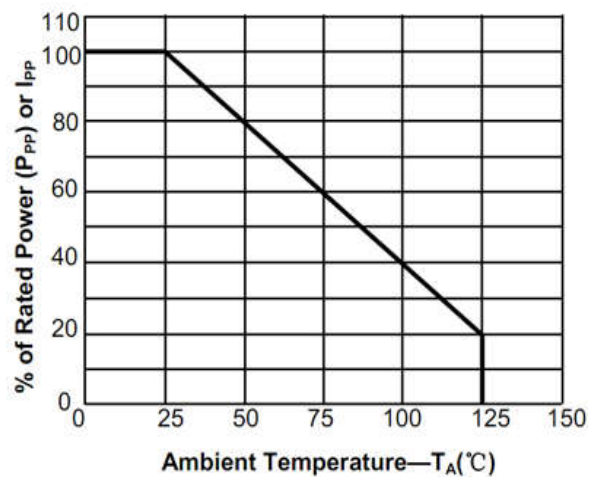
**Electrical Characteristics(TA = 25 °C unless otherwise specified)**

Symbol	Parameter	conditions	Min	Typ.	Max	Unit
V <sub>RWM</sub>	Reverse Working Voltage	T <sub>A</sub> = 25 °C	-	-	5	V
V <sub>BR</sub>	Breakdown Voltage	I <sub>R</sub> = 1 mA; T <sub>A</sub> = 25 °C	6	-	-	V
I <sub>R</sub>	Reverse Leakage current	V <sub>RWM</sub> = 5V; T <sub>A</sub> = 25C	-	-	1	uA
V <sub>C</sub>	Clamping Voltage	I <sub>pp</sub> = 1A, t <sub>p</sub> = 8/20us, Any I/O to GND , Positive	-	8.5	12	V
		I <sub>pp</sub> = 5A, t <sub>p</sub> = 8/20us, Any I/O to GND , Positive	-	12	16	V
cl	Junction Capacitance	V <sub>R</sub> = 0V, f = 1 MHz, I/O to I/O	-	0.3	0.4	pF
		V <sub>R</sub> = 0V, f = 1 MHz, I/O to GND	-	0.5	0.8	pF

**Typical Characteristics**



**Fig.1 Peak Pulse Power Rating Cure**



**Fig.2 Pulse Derating Curve**

Typical Characteristics

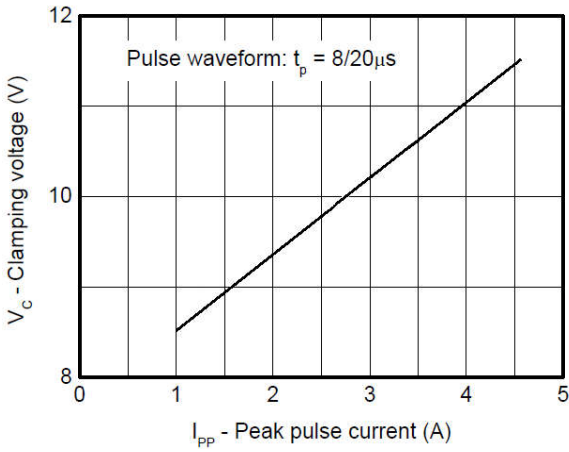


Fig.3 clamping voltage vs.peak pulse current

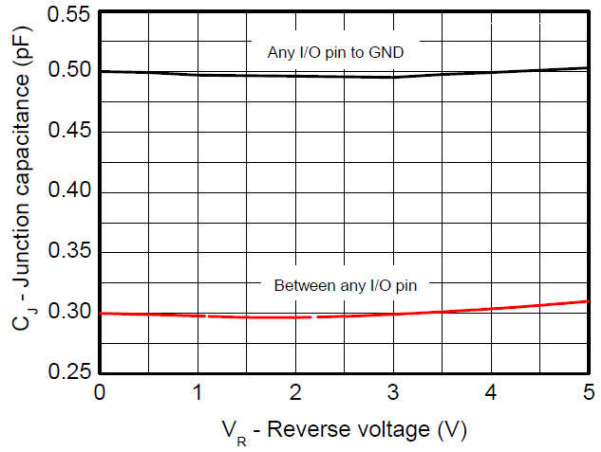


Fig.4 Capacitance Vs.Reverse Voltage

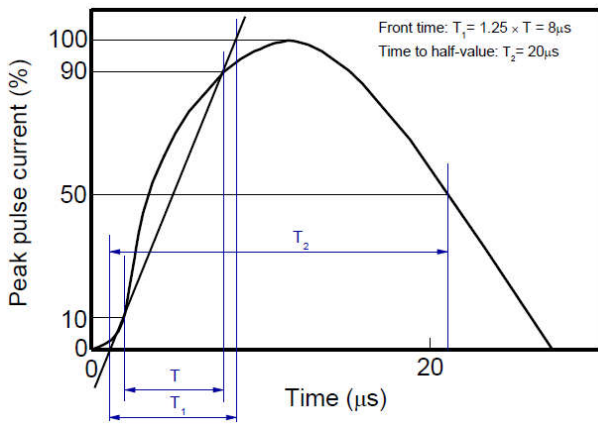


Fig.5 8/20us Pulse Waveform

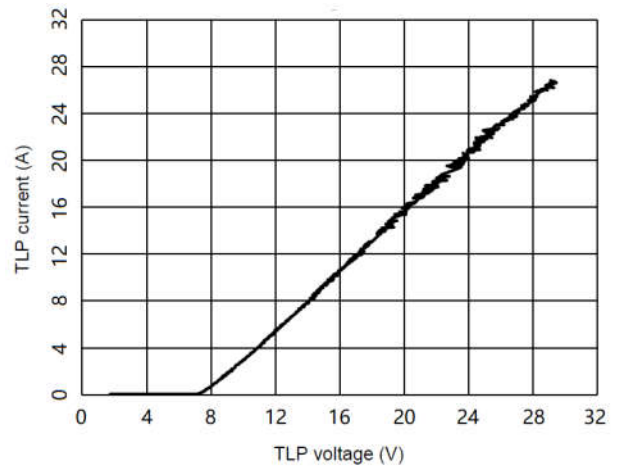


Fig.6 TLP I-V Curve

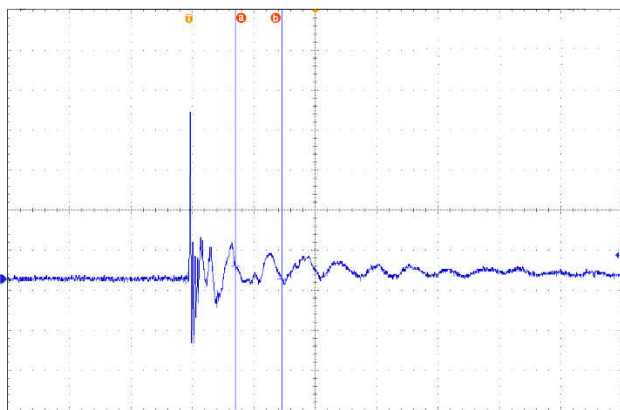


Fig.7 Clamping Voltage at IEC 61000-4-2 +8kv Pulse Waveform

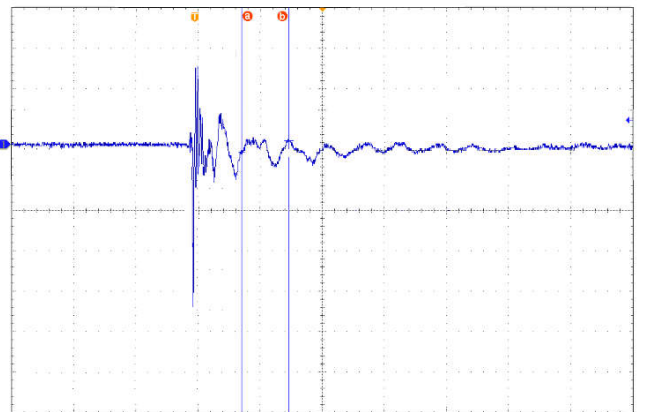
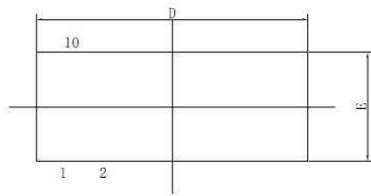


Fig.8 Clamping Voltage at IEC 61000-4-2 -8kv Pulse Waveform

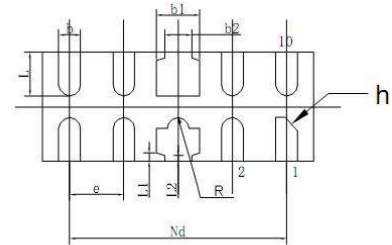
DFN2510 Package Outline



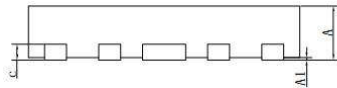
Top View



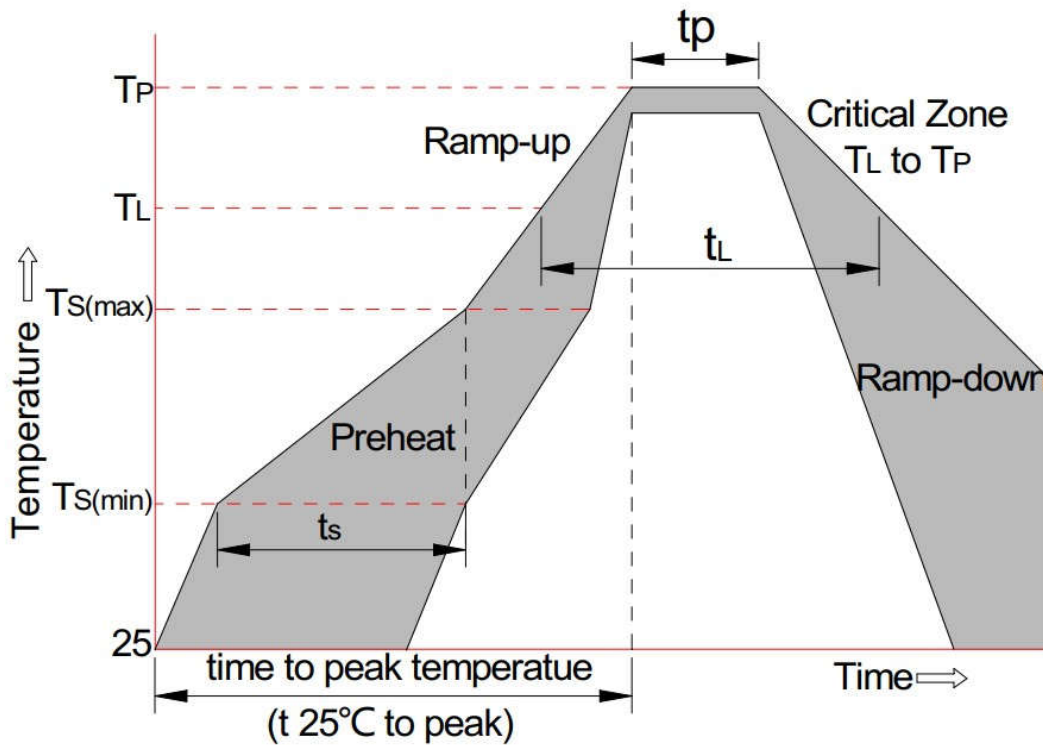
Side View



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



Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) ( $t_s$ )	60-180 secs.
Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature( $T_L$ )(Liquid us)	+217°C
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_p$ )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp ( $t_p$ )		30 secs. Max
Ramp-down Rate		6°C/sec. Max
xTime 25°C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260°C