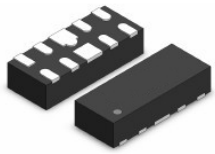
SLESD5304D

4 Channel Ultra-Low Capacitance ESD Protection Diode

1. Features

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

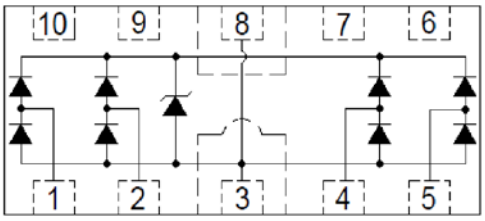
2. Pin Description



3. Applications

- 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

4. Schematic Diagram



Top View

5. Order Information

Type	Package	Size (mm)	Delivery Form	Delivery Quantity
SLESD5304D	DFN2510	2.50x1.00x0.50		3,000

6. Limiting Values(T_A = 25 °C, unless otherwise specified)

Symbol	Parameter	Conditions	Min	Max	Unit
V_{ESD}	Electrostatic Discharge Voltage	IEC 61000-4-2; Contact Discharge	-	±15	kV
		IEC 61000-4-2; Air Discharge	-	±20	kV
I_{PPM}	Rated Peak Pulse Current	t_P = 8/20 μs	-	5	A
T_A	Ambient Temperature Range	-	-55	125	℃
T_{stg}	Storage Temperature Range	-	-55	150	℃

7. Electrical Characteristics(T_A = 25 °C unless otherwise specified)

Symbol	Parameter	Conditions	Min	Typ.	Max	Unit
V_{RWM}	Reverse Working Voltage	T_A = 25 °C	-	-	5	V
V_{BR}	Breakdown Voltage	I_R = 1 mA; T_A = 25 °C	6	-	-	V
I_R	Reverse Leakage Current	V_{RWM} = 5V; T_A = 25 °C	-	-	1	μA
V_C	Clamping Voltage	I_{PP}=1A,t_P=8/20μs, Any I/O to GND , Positive	-	8.5	12	V
		I_{PP}=5A,t_P=8/20μs, Any I/O to GND , Positive	-	12	16	V
C_L	Junction Capacitance	V_R = 0V, f = 1 MHz,I/O to I/O	-	0.3	0.4	pF
		V_R = 0V, f = 1 MHz, I/O to GND	-	0.5	0.8	pF

8. Typical Characteristics

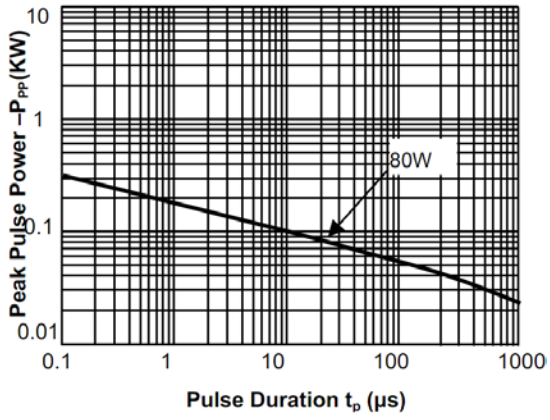


Fig.1 Peak Pulse Power Rating Curve

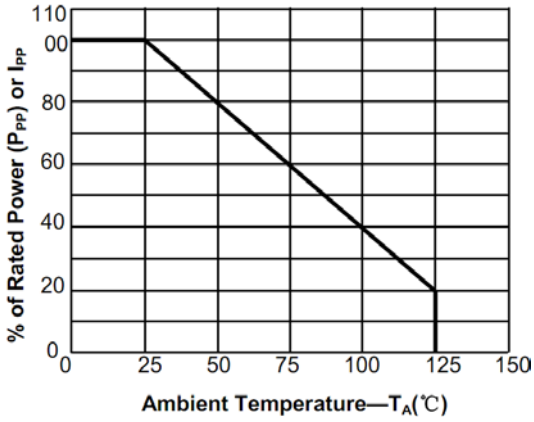


Fig.2 Pulse Derating Curve

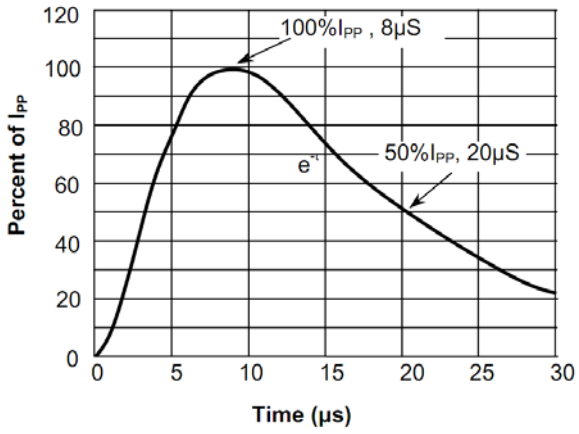


Fig.3 Pulse Waveform-8/20μs

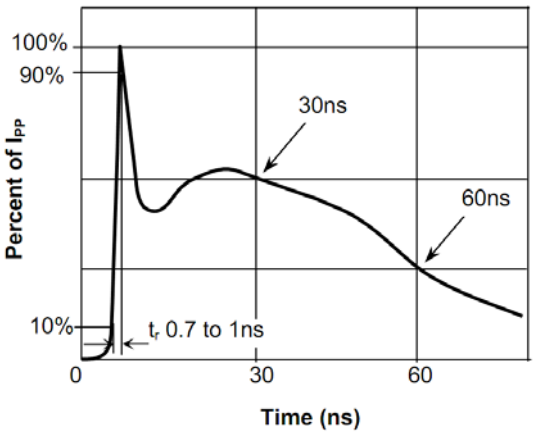
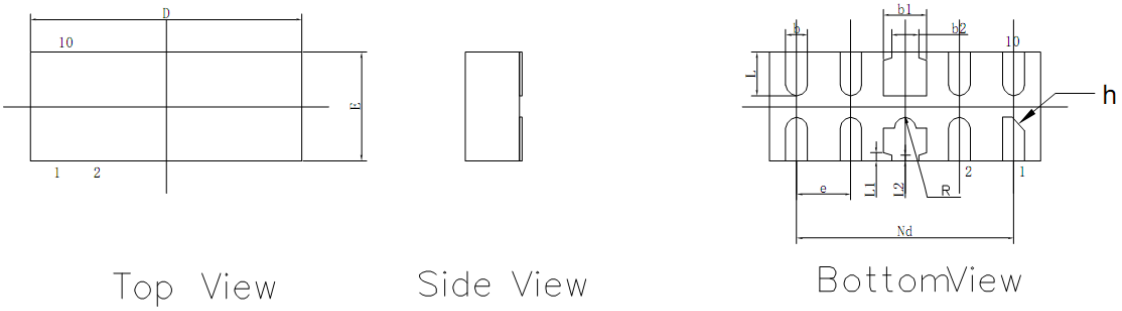
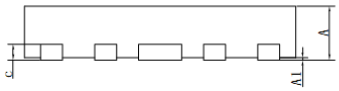


Fig.4 Pulse Waveform-ESD(IEC61000-4-2)

9. Package Dimension

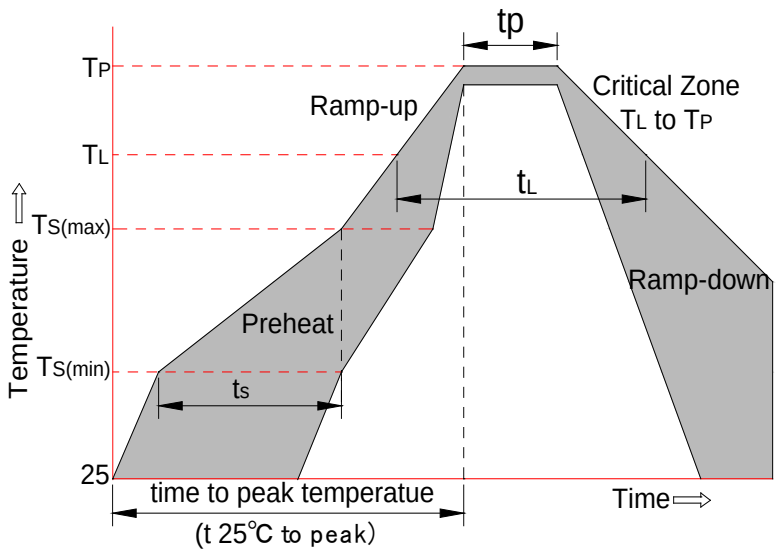
DFN2510 Package Outline





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	2.00 BSC		
E	0.95	1.00	1.05
L	0.35	0.40	0.45
L1	0.075 REF		
L2	0.05 REF		
h	0.08	0.12	0.15
R	0.05	0.10	0.15

10. Soldering Parameters



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) (ts)	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