

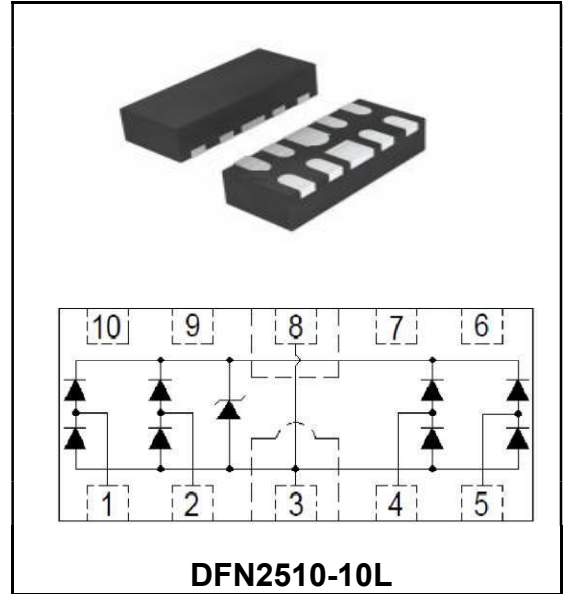
**4 Channel Ultra-low Capacitance  
ESD Protection Diode**

**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



**Marking Code**

ESD2510D5V0B

0524P

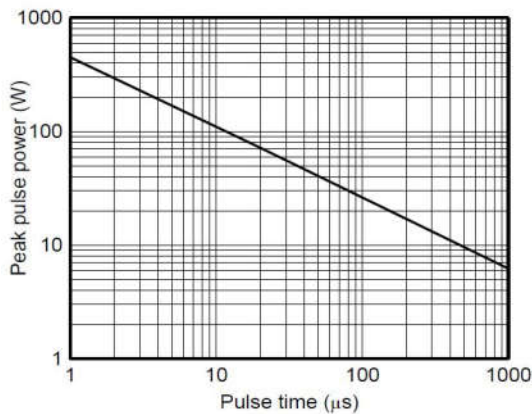
**Limiting Values(TA = 25 °C, unless otherwise specified)**

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	°C
Tstg	Storage Temperature Range	-	-55	150	°C

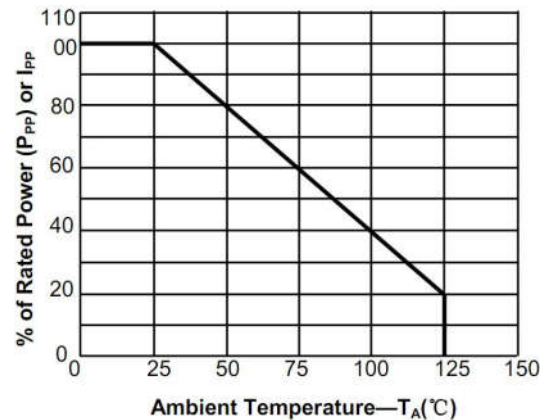
**Electrical Characteristics(TA = 25 °C unless otherwise specified)**

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	-	-	100	nA
V <sub>C</sub>	Clamping Voltage	I <sub>pp</sub> = 1A, t <sub>p</sub> = 8/20us, Any I/O to GND , Positive	-	-	9.8	V
		I <sub>pp</sub> = 4.5A, t <sub>p</sub> = 8/20us, Any I/O to GND , Positive	-	-	14	V
C <sub>L</sub>	Junction Capacitance	V <sub>R</sub> = 0V, f = 1 MHz, I/O to I/O	-	0.22	0.3	pF
		V <sub>R</sub> = 0V, f = 1 MHz, I/O to GND	-	0.45	0.6	pF

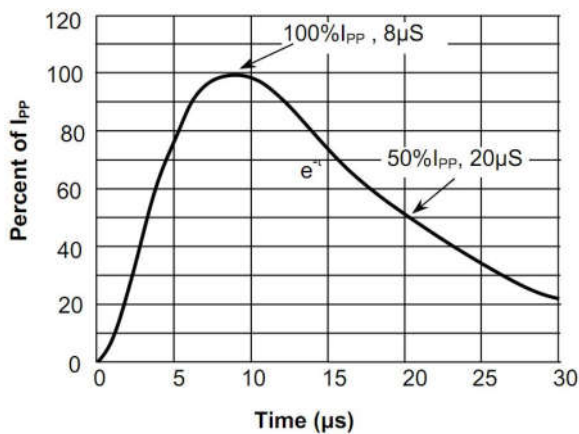
**Typical Characteristics**



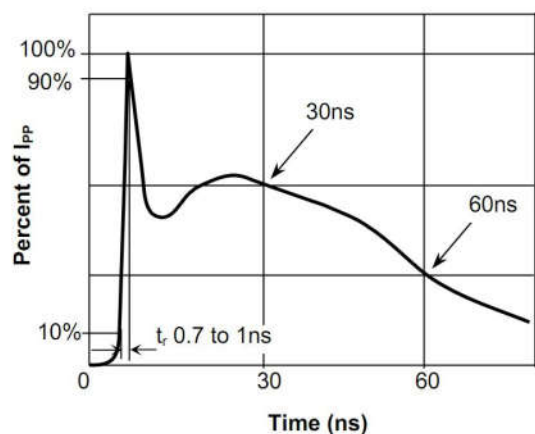
**Fig.1 Peak Pulse Power Rating Cure**



**Fig.2 Pulse Derating Curve**

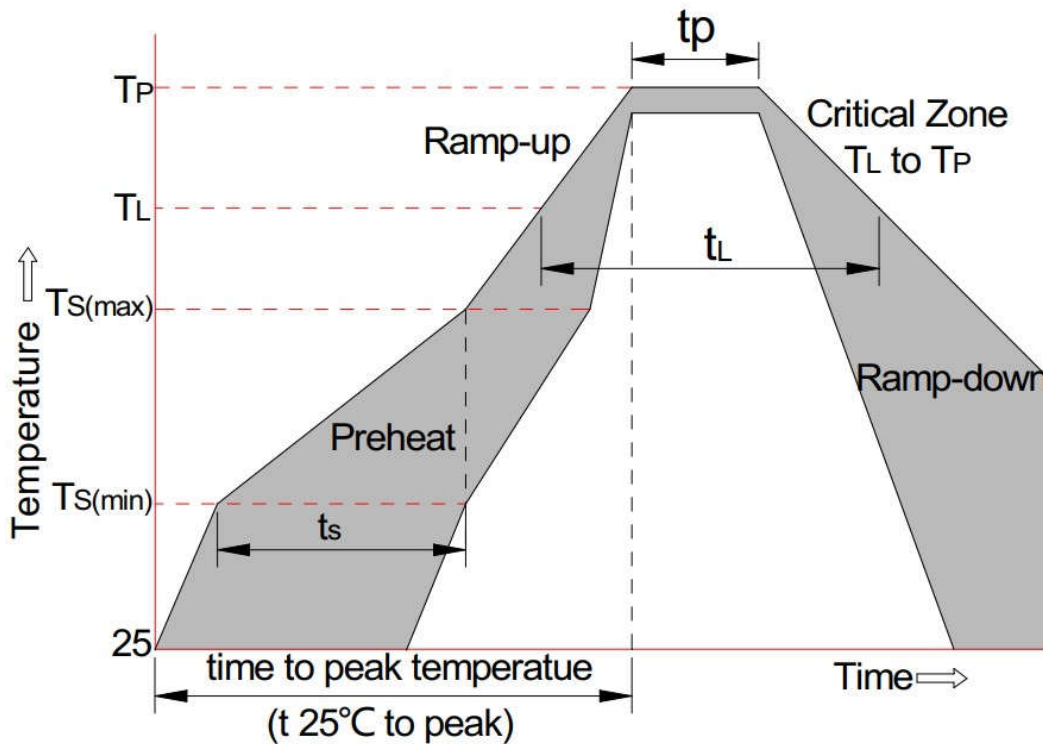


**Fig.3 Pulse Waveform- 8/20us**



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

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

**Ordering information**

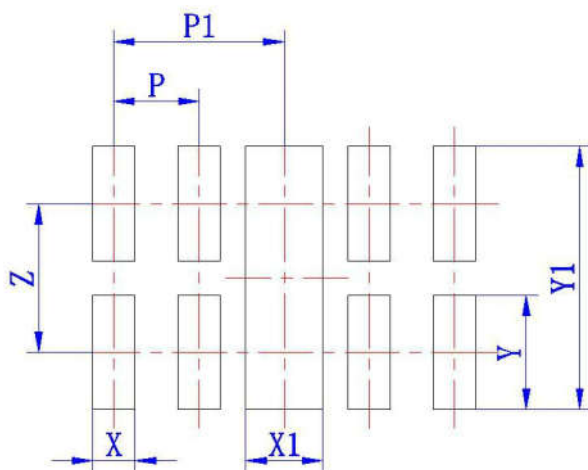
Package	Packing Description	Packing Quantity
DFN2510-10L	Tape/Reel,7"reel	3000PCS/Reel 120000PCS/Carton

**Package Dimensions**

**DFN2510-10L**

Dim.	Millimeter(mm)		Inches	
	Min.	Max.	Min.	Max.
A	0.5	0.6	0.02	0.024
A1	-	0.05	-	0.002
D	2.4	2.6	0.095	0.102
E	0.9	1.1	0.035	0.043
e	Typ0.5		Typ0.02	
N	Typ2.0		Typ0.08	
b	0.15	0.25	0.006	0.010
b1	0.35	0.45	0.014	0.018
b2	0.35	0.45	0.014	0.018
C	Typ0.127		Typ0.005	
L	0.35	0.45	0.014	0.018

**The recommended mounting pad size**



Dim.	Millimeter(mm)
	TYP
X	0.30
X1	0.45
Y	0.67
Y1	1.55
Z	0.87
P	0.50
P1	1.00

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