

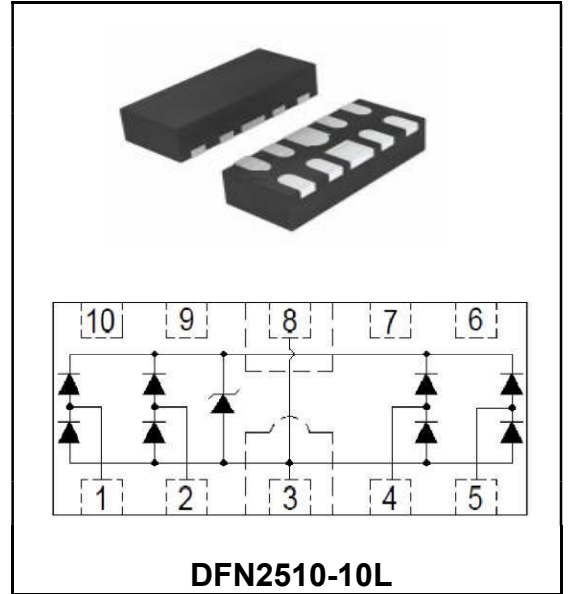
**4 Channel Ultra-low Capacitance
ESD Protection Diode**

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



Marking Code

ESD2510D5V0A	5A.
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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 _{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 = 25C	-	-	1	uA
V _C	Clamping Voltage	I _{pp} = 1A, t _p = 8/20us, Any I/O to GND , Positive	-	8.5	12	V
		I _{pp} = 5A, t _p = 8/20us, Any I/O to GND , Positive	-	12	16	V
cl	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

Typical Characteristics

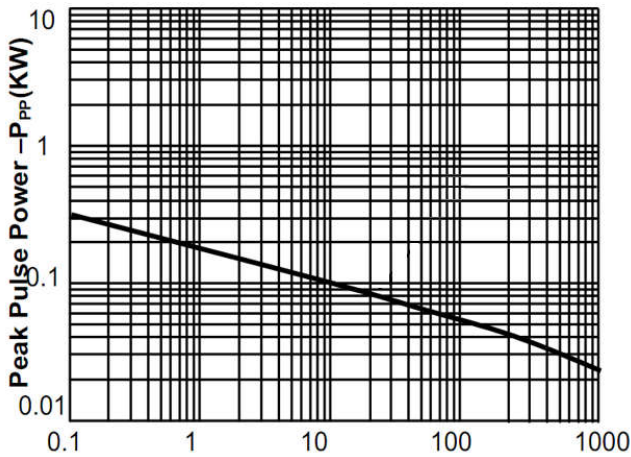


Fig.1 Peak Pulse Power Rating Cure

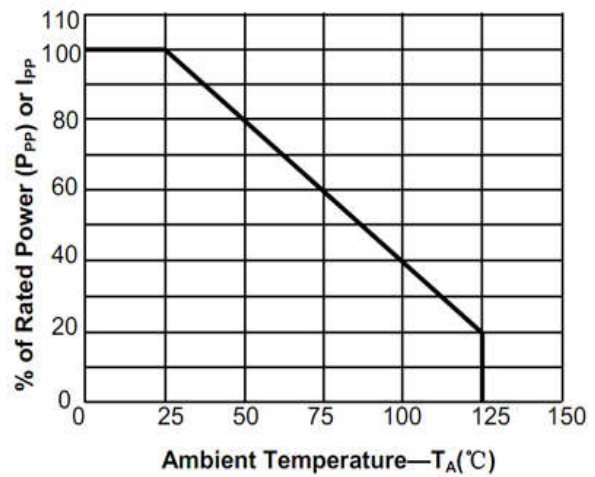


Fig.2 Pulse Derating Curve

Typical Characteristics

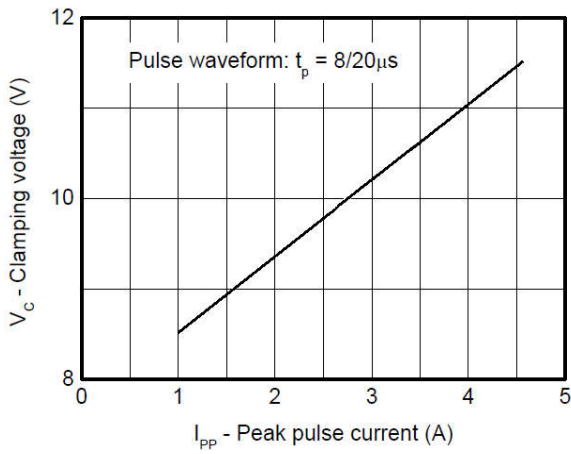


Fig.3 clamping voltage vs.peak pulse current

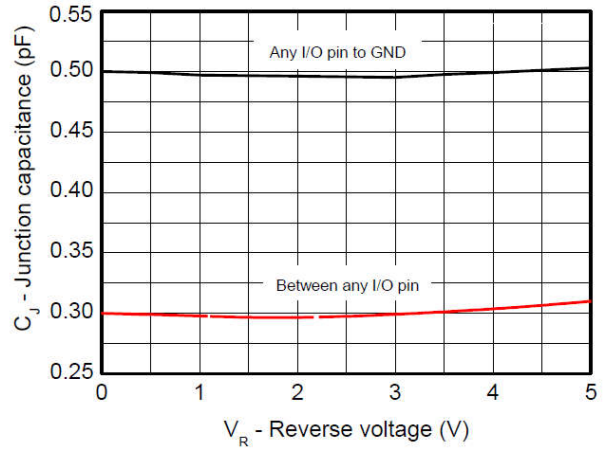


Fig.4 Capacitance Vs.Reverse Voltage

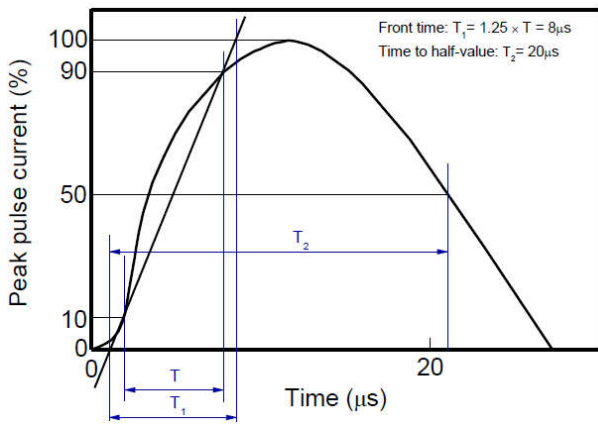


Fig.5 8/20us Pulse Waveform

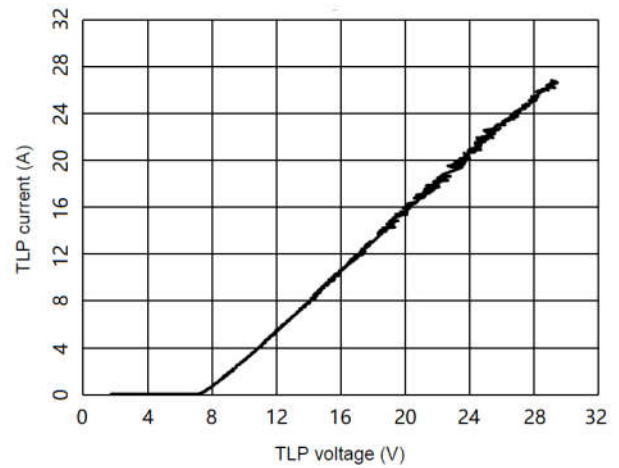


Fig.6 TLP I-V Curve

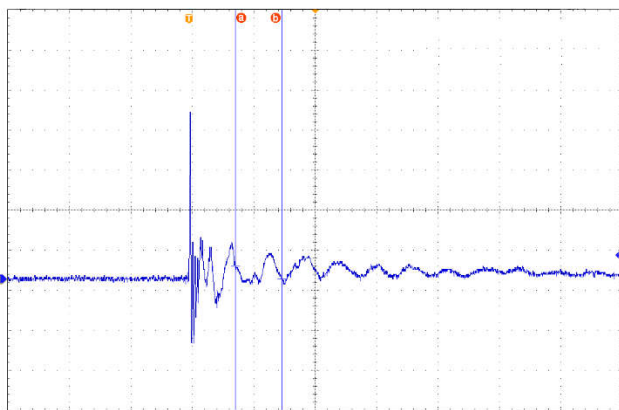


Fig.7 Clamping Voltage at IEC 61000-4-2 +8kv Pulse Waveform

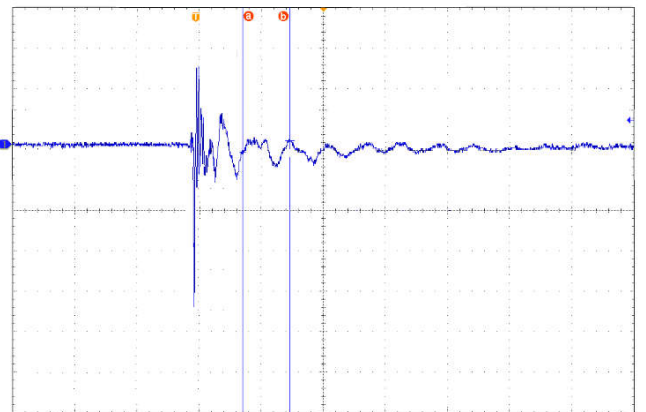
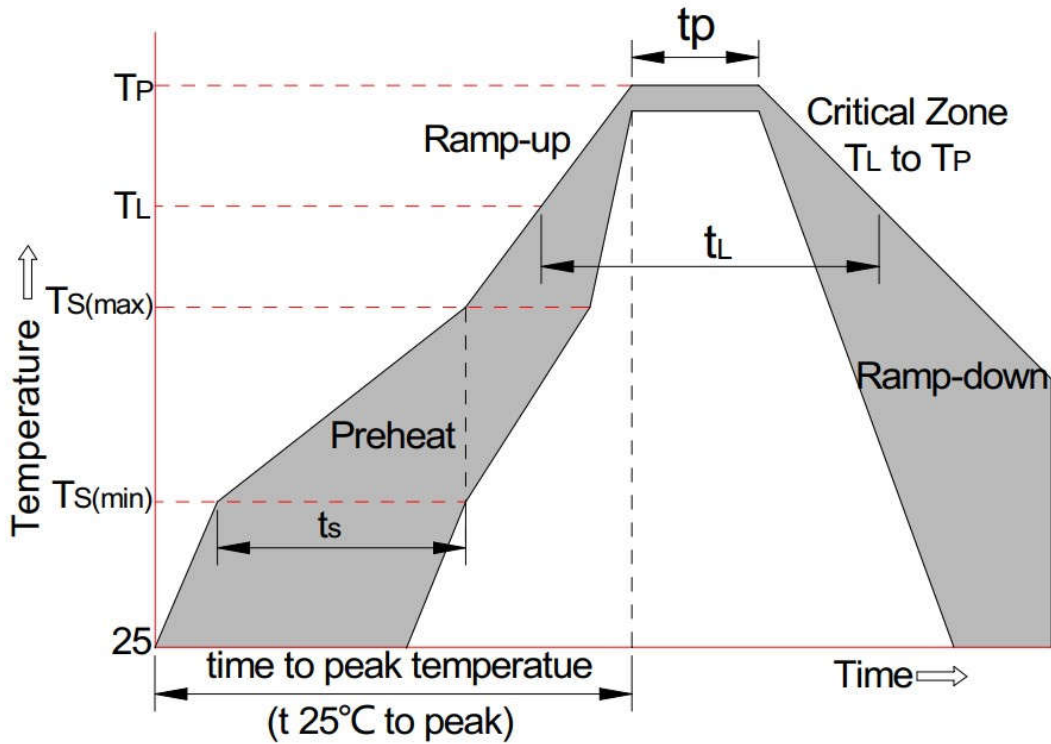


Fig.8 Clamping Voltage at IEC 61000-4-2 -8kv Pulse Waveform

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

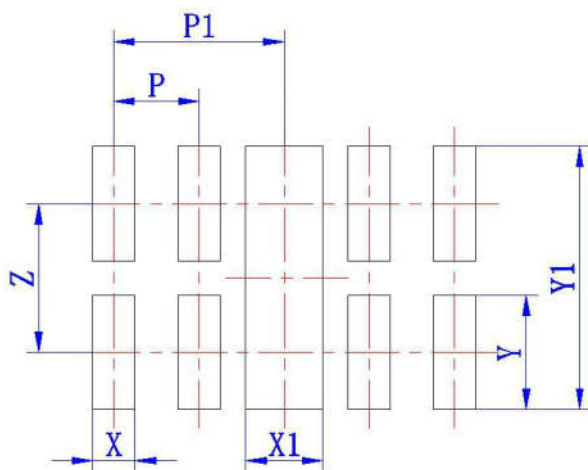
Package	Packing Description	Packing Quantity
DFN2510-10L	Tape/Reel,7"reel	3000PCS/Reel 120000PCS/Carton

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

Disclaimer

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