RCLAMP0524P
4-Line Uni-directional TVS Diode

Features

80 Watts Peak Pulse Power per Line (tp=8/20μs)
Protects two or four I/O lines
Low capacitance: 0.35 pF typical (I/O to I/O)
Low operating voltage: 5V
RoHS Compliant
IEC61000-4-2 (ESD) ±25kV (air), ±20kV (contact)
IEC61000-4-4 (EFT) 40A (5/50ηs)
IEC61000-4-5 (Lightning) 4A (8/20μs)

Applications

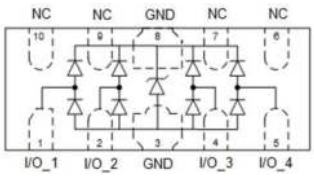
High Definition Multimedia Interface (HDMI)
Digital Visual Interface (DVI)
Unified Display Interface (UDI)
MDDI Ports
PCI Express
Serial ATA

0524P

Mechanical Data

Package: DFN2510-10 (2.5×1.0×0.5mm)
Ultra low leakage: nA level
Case Material: “Green” Molding Compound.
UL Flammability Classification Rating 94V-0
Moisture Sensitivity: Level 3 per J-STD-020
Terminal Connections: See Diagram Below

Schematic & PIN Configuration



DFN2510

Absolute Maximum Rating

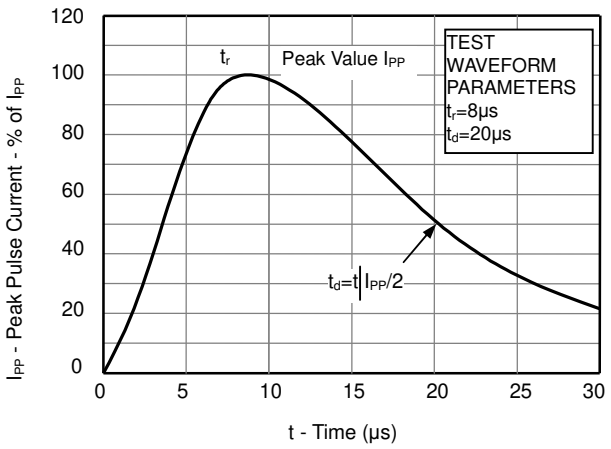
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	80	W
Peak Pulse Current (8/20μs)	IPP	4	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	VESD	±25 ±20	kV
Operating Temperature Range	TJ	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

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

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	Any I/O pin to ground
Breakdown Voltage	V_{BR}	6		9	V	I_T = 1mA, any I/O pin to ground
Reverse Leakage Current	I_R			0.2	μA	V_{RWM} = 5V, any I/O pin to ground
Clamping Voltage	V_C			9	V	I_{PP} = 1A (8 x 20μs pulse), any I/O pin to ground
Clamping Voltage	V_C			20	V	I_{PP} = 4A (8 x 20μs pulse), any I/O pin to ground
Junction Capacitance	C_J		0.35		pF	VR = 0V, f = 1MHz, between I/O pins
Junction Capacitance	C_J		0.6	0.8	pF	VR = 0V, f = 1MHz, any I/O pin to ground

RATING AND CHARACTERISTIC CURVES

Fig1. 8/20μs Pulse Waveform



ig2. ESD Pulse Waveform (according to IEC 61000-4-2)

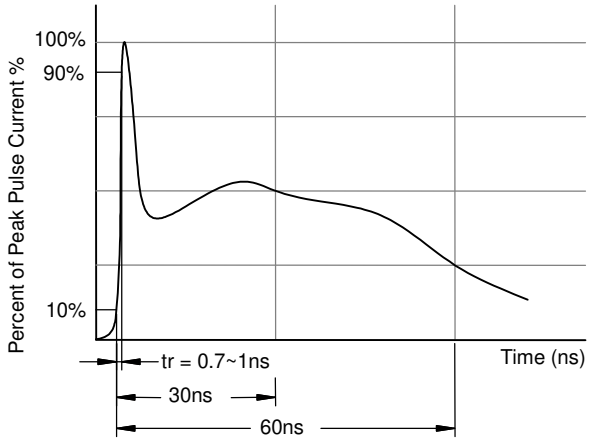
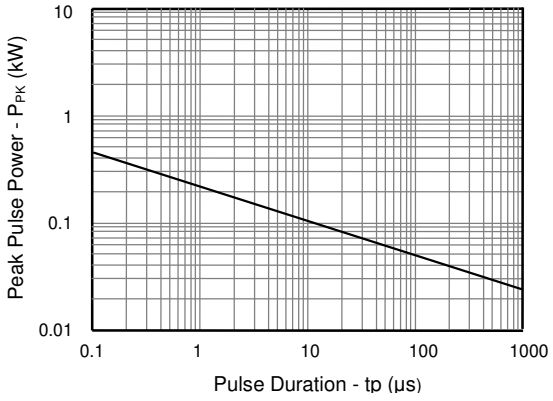
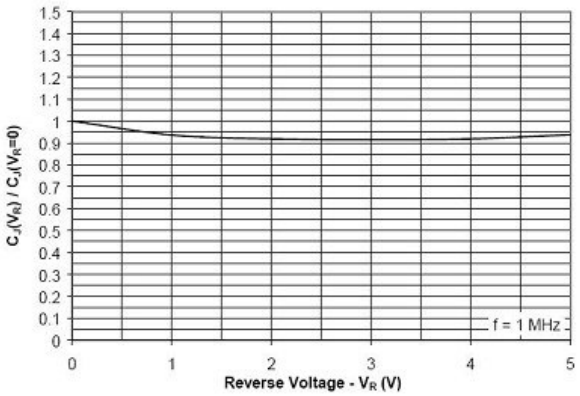


Fig3. Non - Repetitive Peak Pulse Power vs. Pulse Time



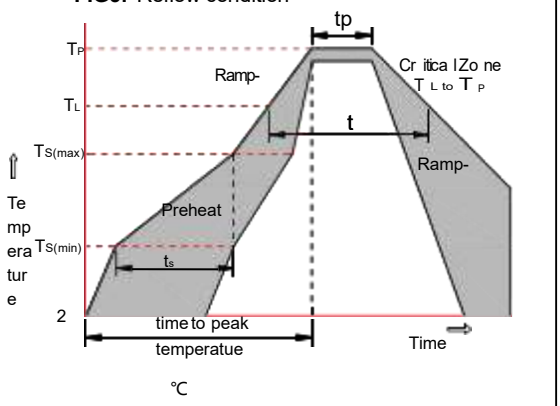
Normalized Capacitance vs. Reverse Voltage



Soldering parameters

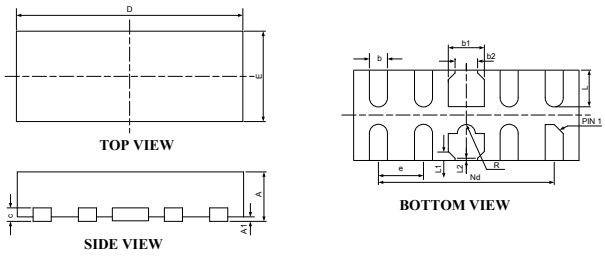
Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150℃
	-Temperature Max($T_{s(max)}$)	+200℃
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3℃/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3℃/sec. Max
Reflow	-Temperature(T_L)(Liquid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

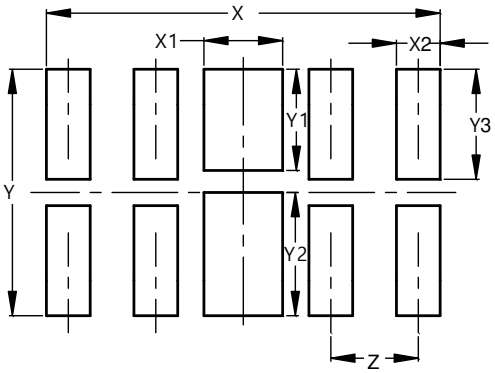
FIG5: Reflow condition



Package Dimensions & Suggested Pad Layout

DFN2510-10L





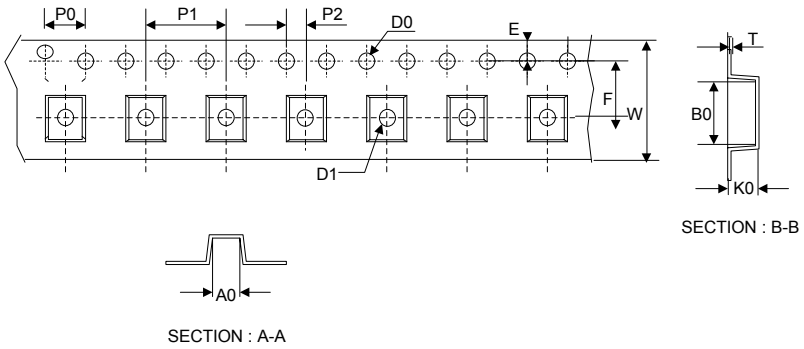
SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.45	0.50	0.55	0.018	0.020	0.022
A1	0.00	0.02	0.05	0.000	0.001	0.002
b	0.15	0.20	0.25	0.006	0.008	0.010
b1	0.35	0.40	0.45	0.014	0.016	0.018
b2	0.20	0.25	0.30	0.008	0.010	0.012
c	0.10	0.15	0.20	0.004	0.006	0.008
D	2.45	2.50	2.55	0.098	0.100	0.102
e	0.50BSC			0.020BSC		
Nd	2.00BSC			0.080BSC		
E	0.95	1.00	1.05	0.038	0.040	0.042
L	0.35	0.40	0.45	0.014	0.016	0.018
L1	0.075REF			0.003REF		
L2	0.050REF			0.002REF		
h	0.08	0.12	0.15	0.003	0.005	0.006
R	0.05	0.10	0.15	0.002	0.004	0.006

Dimensions	Value (in mm)
Z	0.500
X	2.250
X1	0.450
X2	0.250
Y	1.400
Y1	0.570
Y2	0.700
Y3	0.600

Dimensions in inches and (millimeters)

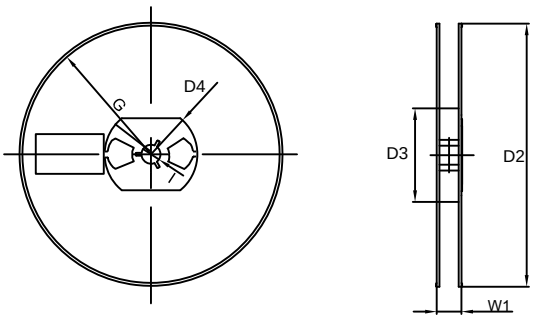
Tape & rell specification

Tape



Symbol	Dimension (mm)
P0	4.00±0.20
P1	4.00±0.20
P2	1.55±0.20
D0	1.55±0.20
D1	0.65±0.20
E	1.55±0.25
F	3.60±0.20
W	8.00±0.20
A0	1.65±0.20
B0	3.00±0.20
K0	1.10±0.20
T	0.20±0.20

7” Reel



D2	177.0±5.0
D3	55Min.
D4	R24.6±2.0
G	R82.0±2.0
I	13.0±2.0
W1	10.20±3.0

Quantity: 3000PCS