

Ultra Low Capacitance ESD Protection Array

DESCRIPTION

The ESD0524P provides a typical line to line capacitance of 0.3pF between I/O pins and low insertion loss up to 3GHz providing greater signal integrity making it ideally suited for HDMI applications, such as Digital TVs, DVD players, Computing, set-top boxes and MDDI applications in mobile computing devices. This series has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD(electrostatic discharge), CDE (Cable Discharge Events),and EFT (electrical fast transients).

FEATURES

- Protects two or four I/O lines
- Low capacitance: 0.3pF Typical between I/O channel
- Low leakage current
- 5V operating voltage
- Response time < 1ns
- Solid-state silicon avalanche technology
- Device meets MSL 1 requirements
- RoHS compliant

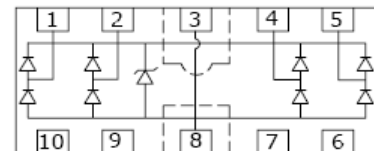
PACKAGE OUTLINE



MACHANICAL DATA

- DFN2510 package
- Flammability Rating: UL 94V-0
- Terminal: Matte tin plated.
- Packaging: Tape and Reel
- High temperature soldering guaranteed: 260°C/10s
- Reel size: 7 inch

PIN CONFIGURATION



APPLICATIONS

- High Definition Multi-Media Interface (HDMI)
- Digital Visual Interface (DVI)
- USB 1.1/2.0/3.0/OTG
- IEEE 1394 Firewire Ports
- Notebooks & Handhelds
- Projection TV & Monitors
- Set-top box
- Flat Panel Displays
- PCI Express

ABSOLUTE MAXIMUM RATING

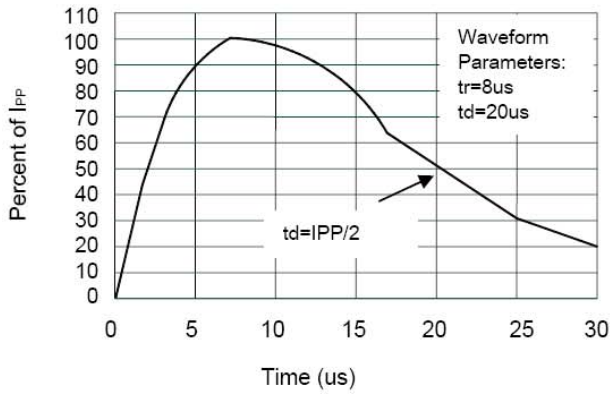
Symbol	Parameter	Value	Units
I_{PP}	Peak Pulse Current (8/20 μ s)	2	A
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	± 17 ± 12	kV
T_{OPT}	Operating Temperature	-55/+150	$^{\circ}$ C
T_{STG}	Storage Temperature	-55/+150	$^{\circ}$ C

ELECTRICAL CHARACTERISTICS ($T_{amb}=25^{\circ}$ C)

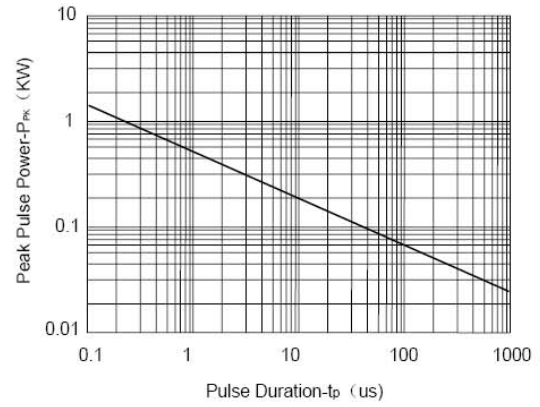
Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V_{RWM}	Reverse Working Voltage	Any I/O pin to GND			5.0	V
V_{BR}	Reverse Breakdown Voltage	$I_T = 1mA$ Any I/O pin to GND	6.0			V
I_R	Reverse Leakage Current	$V_{RWM} = 5V$ Any I/O pin to GND			1	μ A
V_F	Diode Forward Voltage	$I_F = 15mA$		0.85	1.2	V
V_C	Clamping Voltage	$I_{PP} = 1A, t_p = 8/20\mu s$ Any I/O pin to GND			15	V
C_{J1}	Junction Capacitance 1	$V_R = 0V, f = 1MHz$ Between I/O pins		0.3	0.6	pF
C_{J2}	Junction Capacitance 2	$V_R = 0V, f = 1MHz$ Any I/O pin to GND		0.6	0.8	pF

Note: I/O pins are pin 1,2,4,5.

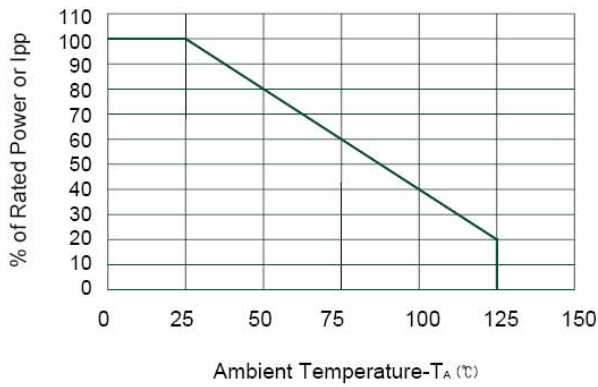
ELECTRICAL CHARACTERISTICS CURVE



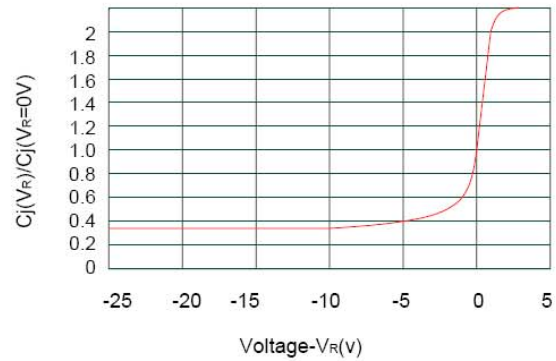
Pulse Waveform



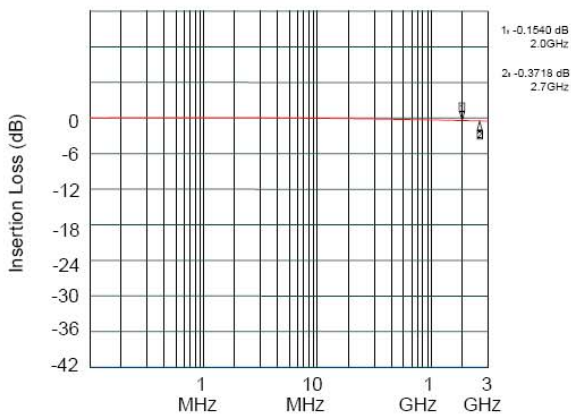
Non-Repetitive Peak Pulse Power vs. Pulse Time



Power Derating Curve



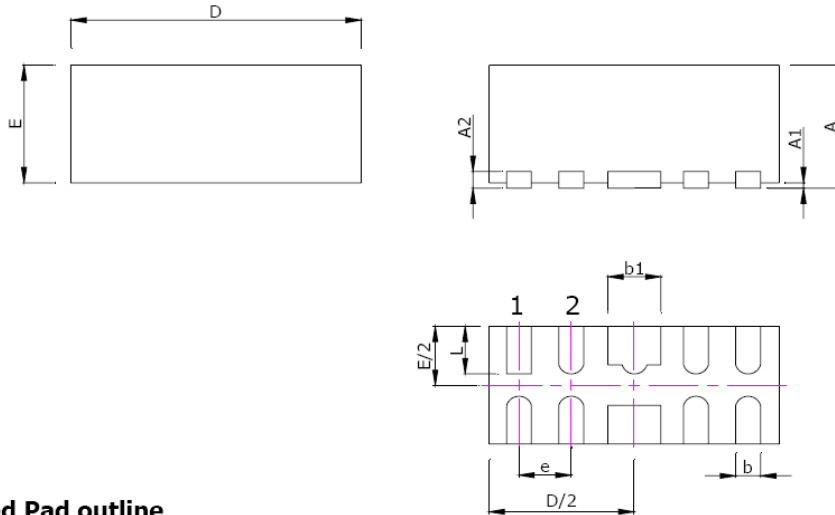
Junction Capacitance vs. Reverse Voltage



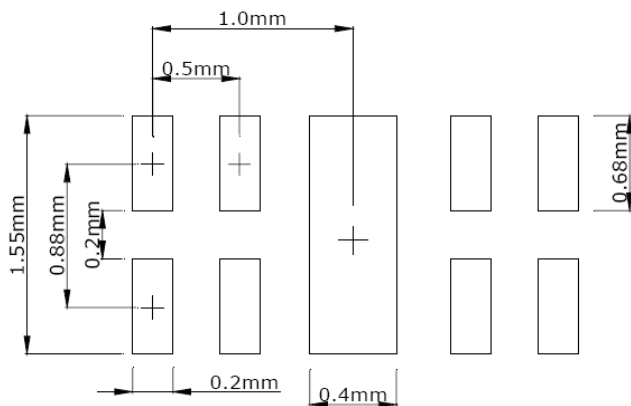
Insertion Loss S21

DFN2510 PACKAGE OUTLINE DIMENSIONS

DFN2510



Recommended Pad outline



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.5	0.65	0.020	0.023
A1		0.05		0.002
A2	0.13		0.005	
b	0.15	0.25	0.006	0.010
b1	0.35	0.45	0.014	0.018
D	2.40	2.60	0.094	0.102
E	0.90	1.10	0.035	0.043
e	0.5		0.020	
L	0.30	0.43	0.012	0.017