ESD0524P

Description

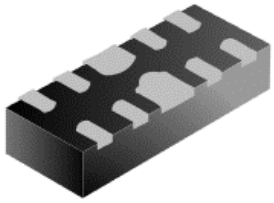
The ESD0524P is an ultralow capacitance TVS array designed to Protect high speed data interfaces. It has been specifically Designed to protect sensitive components which is connected to data an transmission lines from overvoltage caused by electrostatic discharge (ESD), cable discharge events (CDE) and lightning. The unique design incorporates surge rated, low capacitance steering diodes and a TVS diode in a single package. During transient conditions, the steering diodes direct the transient current to ground. The internal TVS diode clamps the transient voltage to a safe level. The ultralow capacitance array configuration allows the user to protect up to the high-speed data lines.

Features

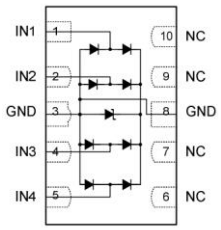
- Low leakage
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
  - – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±15kV
    Contact discharge: ±12kV
  - – IEC61000-4-5 (Lightning)5A (8/20μs)

Applications

- High Definition Multimedia Interface
- Digital Visual Interface
- Display Port Interface
- PCI Express
- Serial ATA
- Type C/USB 3.0/USB 2.0

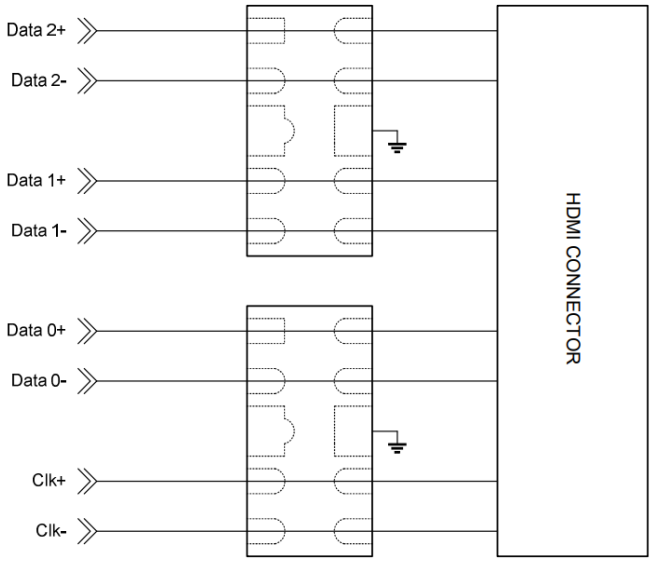


Pin Configuration

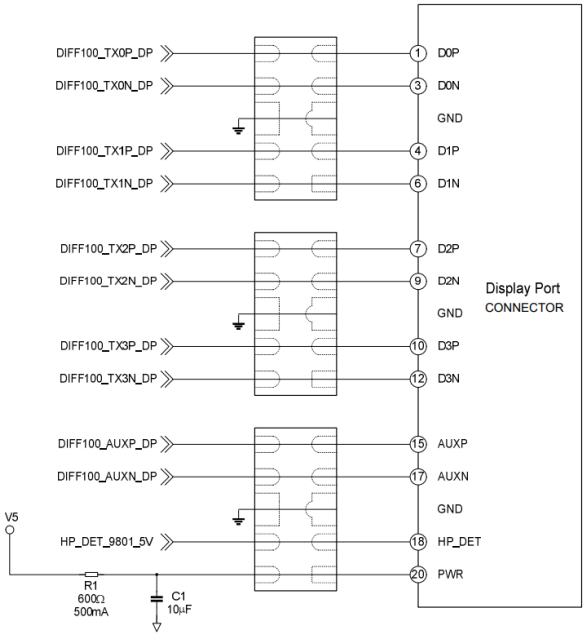


DFN-10-2.5x1.0x0.6-0.5
(Top view)

Applications Information



HDMI



Display port

Absolute Maximum Ratings(Tamb=25°C unless otherwise specified)

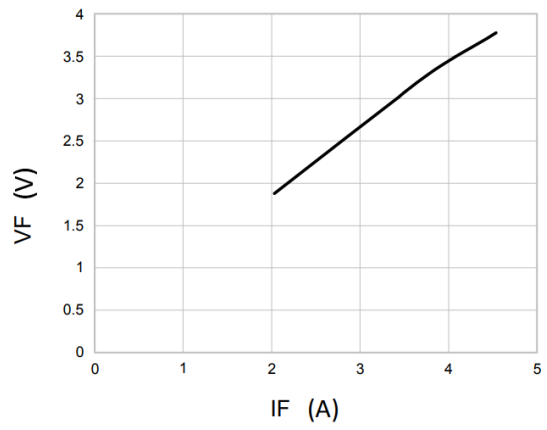
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P_{PP}	100	Watts
Peak Current (8/20μs)	I_{PP}	5	A
ESD per IEC 61000−4−2 (Air)	V_{ESD}	±15	KV
ESD per IEC 61000−4−2 (Contact)		±12	KV
Operating Temperature Range	T_J	-55 to +125	°C
Storage Temperature Range	T_{STJ}	-55 to +150	°C
Lead Soldering Temperature	T_L	260(10sec)	°C

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

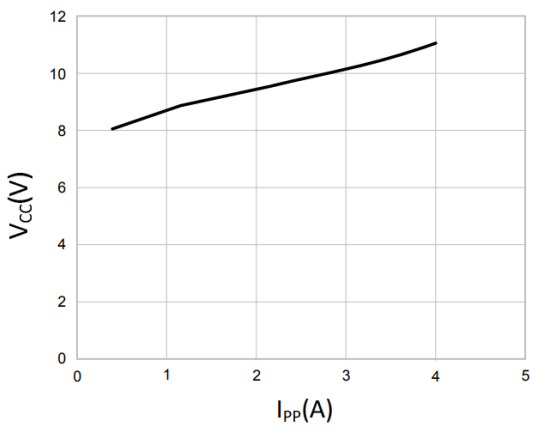
Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	V_{RRM}				5	V
Forward voltage	V_{F1}	I_F=1mA	0.4	0.8	1.5	V
Forward voltage	V_{F2}	I_F=1A		1.8		V
Breakdown Voltage	V_{BR}	I_T = 1mA	6.0	7.0		V
Reverse Leakage Current	I_R	V_{RWM} = 5V		0.03	1	μA
Clamping Voltage	V_C	I_{PP} = 1A (8/20μs pulse)		8.5	12.0	V
Junction Capacitance	C_{J1}	V = 0V, f = 1MHz Between I/O pins		0.35	0.45	pF
Junction Capacitance	C_{J2}	V = 0V, f = 1MHz Any I/O pin to GND		0.6	0.65	pF

Characteristics Curves (TA=25°C unless otherwise Specified)

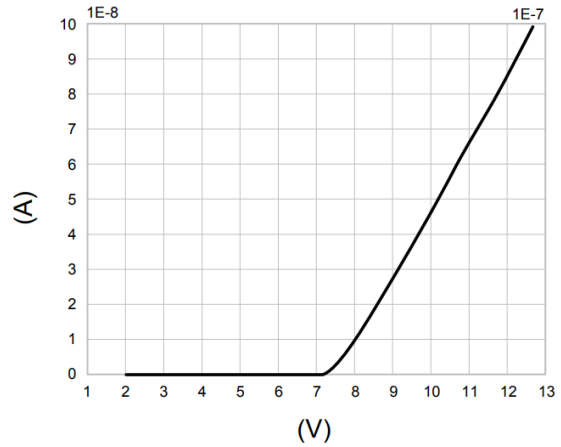
1- I_F VS V_F



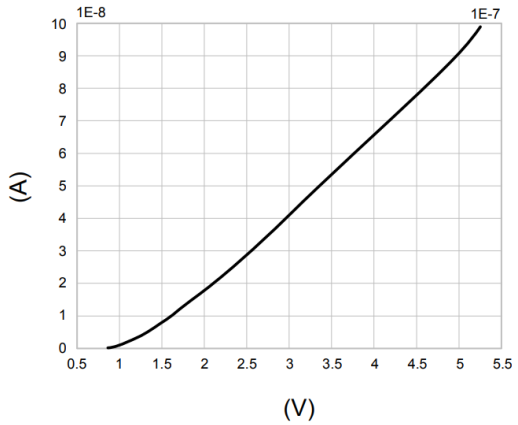
2-I_{PP} vs. V_C



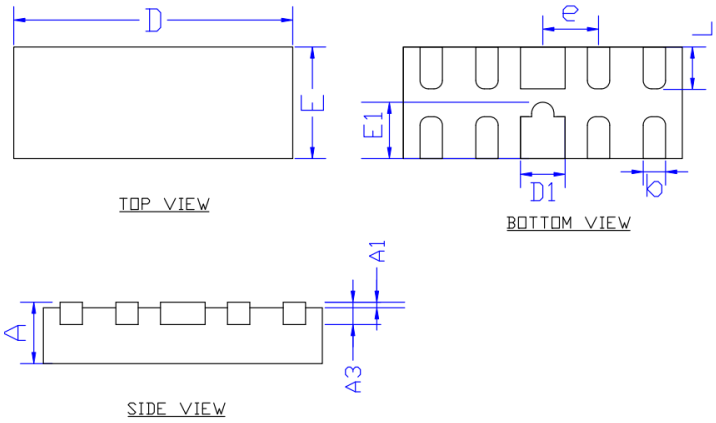
3- Positive Transmission Line Pulsing (TLP) Plot



4- Negative Transmission Line Pulsing (TLP) Plot



ACKAGE OUTLINE DIMENSIONS(DFN2510-10L)



Symbol	mm		
	MIN.	NOM.	MAX.
A	0.500	-	0.600
A1	0.000	-	0.050
A3	0.127REF.		
D	2.450	2.500	2.550
E	0.950	1.000	1.050
D1	0.350	0.400	0.450
E1	0.460	0.510	0.560
b	0.150	0.200	0.250
L	0.330	0.380	0.430
e	0.500		

Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.