

Ultra Low Capacitance ESD Protection Array

DESCRIPTION

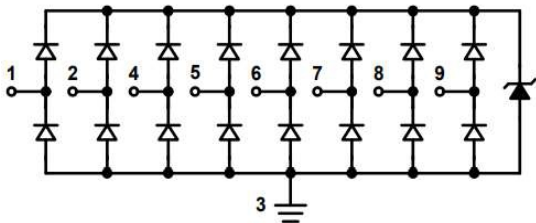
ESD0508P is an ultra-low capacitance Transient Voltage Suppressor (TVS) designed to protection for high-speed data interfaces. With typical capacitance of 0.2pF (I/O to I/O) only, ESD0508P is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4(±15KV air, ±8KV contact discharge), IEC61000-4-4 (electrical fast transient-EFT) (40A, 5/50ns), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

ESD0508P uses ultra-small DFN3810-9L package. Each ESD0508P device can protect eight high-speed data lines. The combined features of ultra-low capacitance, ultra-small size and high ESD robustness make ESD0508P ideal for high-speed data ports and high-frequency lines (e.g., HDMI & DVI) applications. The low clamping voltage of the ESD0508P guarantees a minimum stress on the protected IC.

ORDERING INFORMATION

- ✧ Device: ESD0508P
- ✧ Package: DFN3810-9L
- ✧ Marking: 0508P
- ✧ Material: Halogen free
- ✧ Packing: Tape & Reel
- ✧ Quantity per reel: 3,000pcs

CIRCUIT DIAGRAM



FEATURES

- ✧ Transient protection for high-speed data lines
IEC 61000-4-2(ESD) ±25KV(Air)
±20KV(Contact)
IEC 61000-4-4(EFT)40A(5/50ns)
Cable Discharge Event(CDE)
- ✧ Package optimized for high-speed lines
- ✧ Ultra-small package(3.8mm*1.0mm*0.5mm)
- ✧ Protects eight data lines
- ✧ Low capacitance: 0.2pF (I/O to I/O)
- ✧ Low leakage current
- ✧ Low clamping voltage
- ✧ Each I/O pin can withstand over 1000 ESD strikes for ±8KV contact discharge

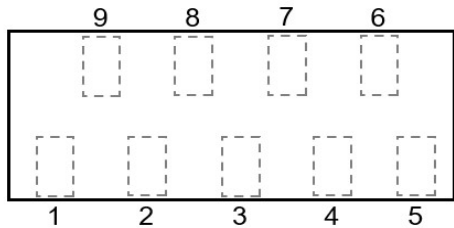
MACHANICAL DATA

- ✧ DFN3810-9L 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

APPLICATIONS

- ✧ SATA and eSATA interface
- ✧ LVDS interfaces
- ✧ Desktops, Servers and Notebooks
- ✧ MDDI Ports
- ✧ Display Ports
- ✧ High Definition Multi-Media Interface (HDMI)
- ✧ Digital Visual Interface (DVI)

PIN CONFIGURATION



ABSOLUTE MAXIMUM RATING

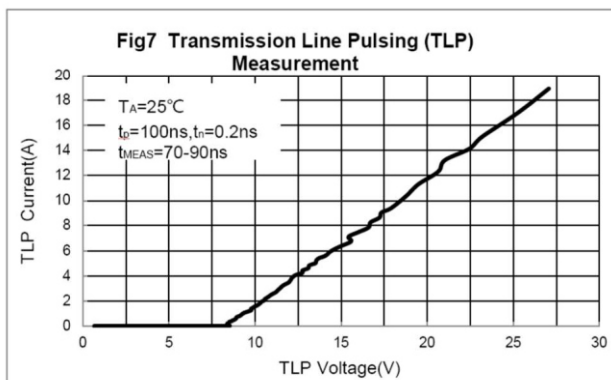
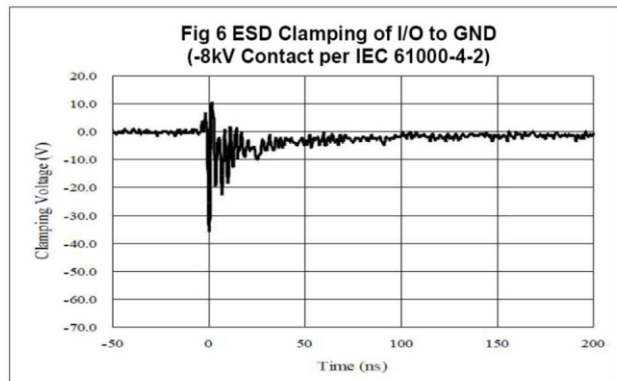
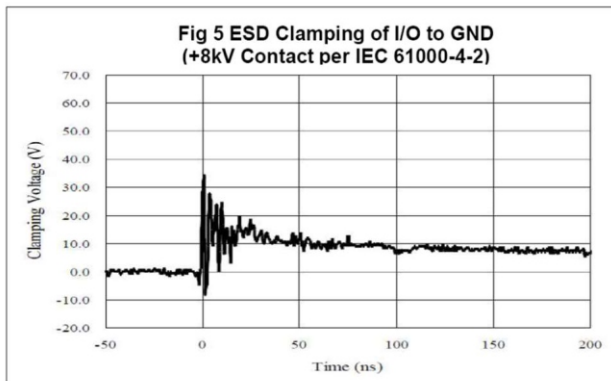
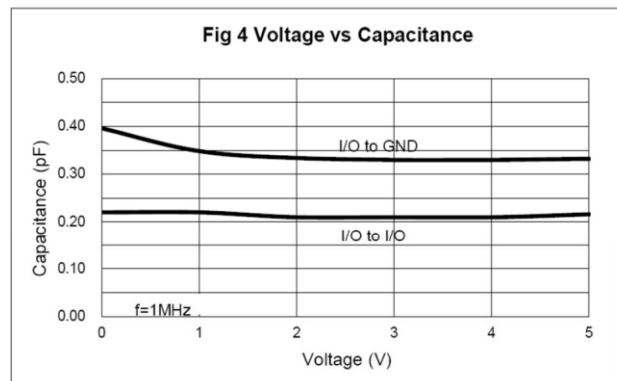
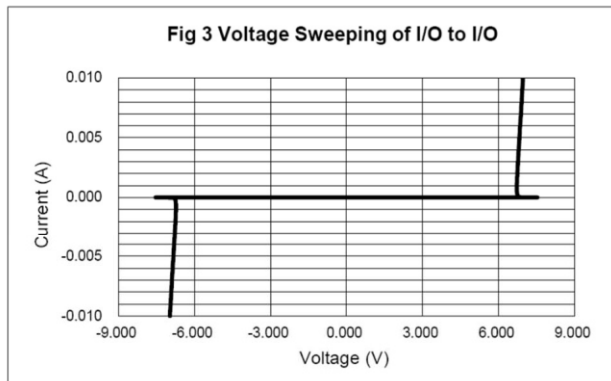
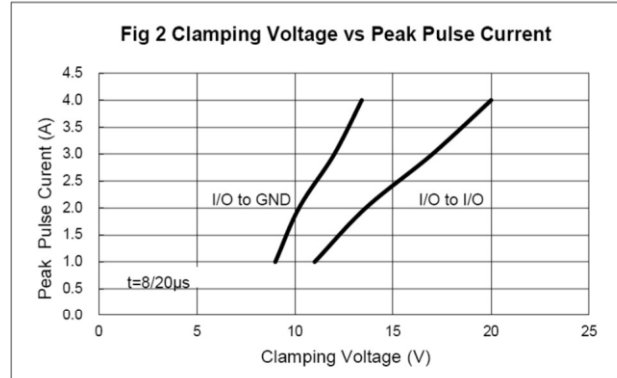
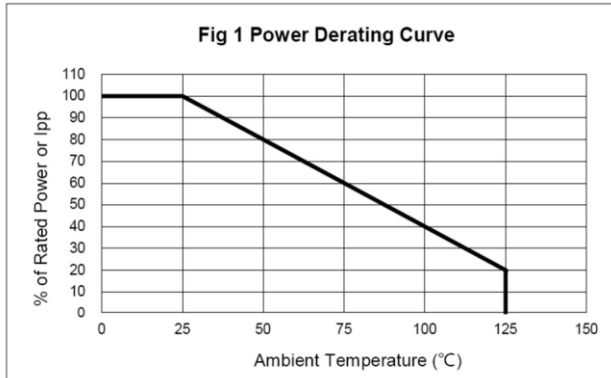
Symbol	Parameter	Value	Units
P _{PP}	Peak Pulse Power (8/20μs)	60	W
V _{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±25 ±20	kV
T _{OPT}	Operating Temperature	-55/+125	°C
T _{STG}	Storage Temperature	-55/+150	°C

ELECTRICAL CHARACTERISTICS (T_{amb}=25°C)

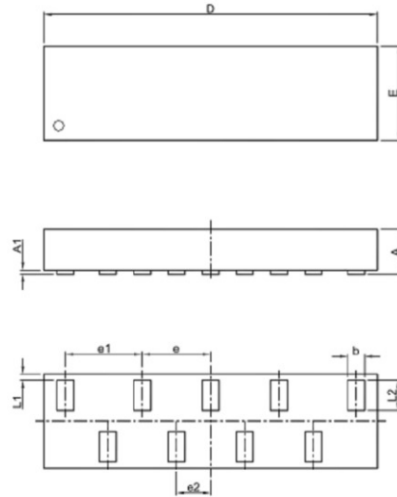
Symbol	Parameter	Test Condition	Min	Typ	Max	Units
V _{RWM}	Reverse Working Voltage	Any I/O pin to GND			5.0	V
V _{BR}	Reverse Breakdown Voltage	I _T = 1mA Any I/O pin to GND	6.0		9.0	V
I _R	Reverse Leakage Current	V _{RWM} = 5V Any I/O pin to GND			1.0	μA
V _C	Clamping Voltage	I _{PP} = 1A, t _p = 8/20μs Any I/O pin to GND			10	V
V _C	Clamping Voltage	I _{PP} = 4A, t _p = 8/20μs Any I/O pin to GND			15	V
C _{ESD}	Parasitic Capacitance	V _R = 0V, f = 1MHz Between I/O and GND		0.4	0.5	pF
C _{ESD}	Parasitic Capacitance	V _R = 0V, f = 1MHz Between I/O and I/O		0.2	0.3	pF

Note: I/O pins are pin 1,2,4,5, 6,7,8,9; GND pins are pin 3.

ELECTRICAL CHARACTERISTICS CURVE



DFN3810-9 PACKAGE OUTLINE DIMENSIONS



UNIT	A	A1	b	D	E	e	e1	e2	L1	L2
mm	0.475	0	0.15	3.70	0.90	0.80	0.90	0.40	0.025	0.25
	0.525	0.05	0.25	3.90	1.10				0.075	0.35