SuperESD - AZ9143-08F-ES

1. Description

The AZ9143-08F-ES is an ultra-low capacitance TVS (Transient Voltage Suppressor) array designed to protect high speed data interfaces. It has been specifically designed to protect sensitive electronic components which are connected to data and transmission lines from over-stress caused by ESD (Electrostatic Discharge).

2. Features

- IEC 61000-4-2 Level 4 ESD Protection
  - ±15kV Contact Discharge
  - ±15kV Air Discharge
- IEC61000-4-5 (Surge) 6A (8/20μs)
- Protect 8 I/O lines
- Low operating and clamping voltage
- Low leakage current
- Solid-state silicon technology
- Low Junction capacitance: 0.5pF Typ.

3. Applications

- USB 2.0
- DVI and HDMI interfaces
- Mobile and cordless phones
- Personal Digital Assistants (PDA)
- Digital cameras
- PCs, notebooks, printers and other PC peripherals

4. Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
AZ9143-08F-ES	DFN3810-9L	.3V8U/LOT	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7 inches

Table-1 Ordering information

5. Pin Configuration and Functions

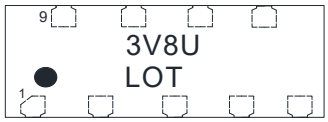
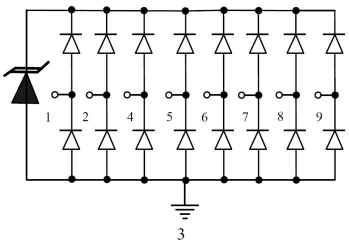
Pin	Name	Description	Outline	Circuit Diagram
3	GND	Connect to GND		
1/2/4/5/6/7/8/9	IO	Connect to IO		

Table-2 Pin configuration

6. Specification

6.1. Absolute Maximum rating

Over operating free-air temperature range (unless otherwise noted)

Parameters	Symbol	Min.	Max.	Unit
Peak pulse power (tp=8/20us)@25℃	P_{pk}	-	75	W
Peak pulse current (tp=8/20us)@25℃	I_{PP}		6	A
ESD (IEC61000-4-2 air discharge) @25℃	V_{ESD}	-	±15	kV
ESD (IEC61000-4-2 contact discharge) @25℃	V_{ESD}	-	±15	kV
Junction temperature	T_J	-	150	℃
Operating temperature	T_{OP}	-40	125	℃
Storage temperature	T_{STG}	-55	150	℃
Lead temperature	T_L	-	260	℃

Table-3 Absolute Maximum rating

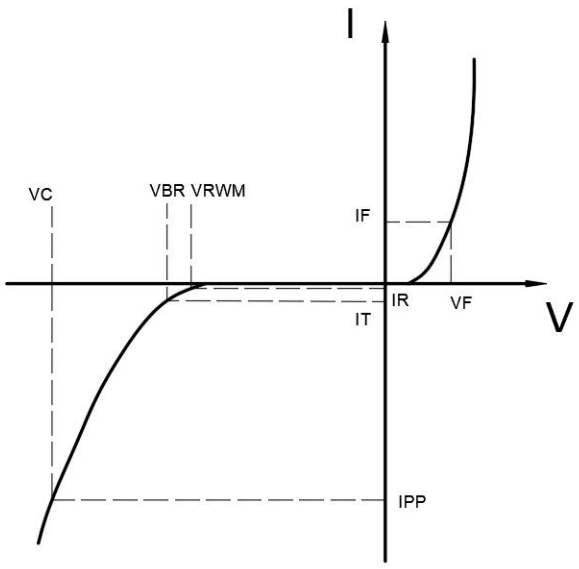
6.2. Electrical Characteristics

At TA = 25℃ unless otherwise noted

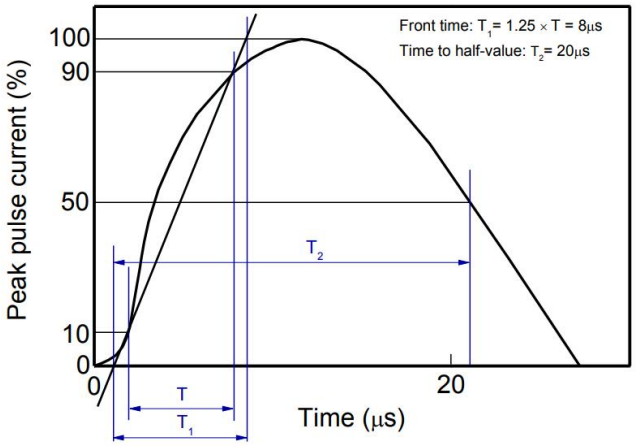
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				3.3	V
Reverse Breakdown Voltage	V_{BR}	IT=1mA	4.5		6.0	V
Reverse Leakage Current	I_R	V_{RWM}=3.3V			1.0	uA
Clamping Voltage	V_C	I_{PP}=1A; tp=8/20us		6.0	8.0	V
Clamping Voltage	V_C	I_{PP}=6A; tp=8/20us		9.0	12.0	V
Junction Capacitance	C_J	V_R=0V; f=1MHz I/O pin to GND pin		0.5	0.7	pF
Junction Capacitance	C_J	V_R=0V; f=1MHz I/O pin to I/O pin		0.25	0.35	pF

Table-4 Electrical Characteristics

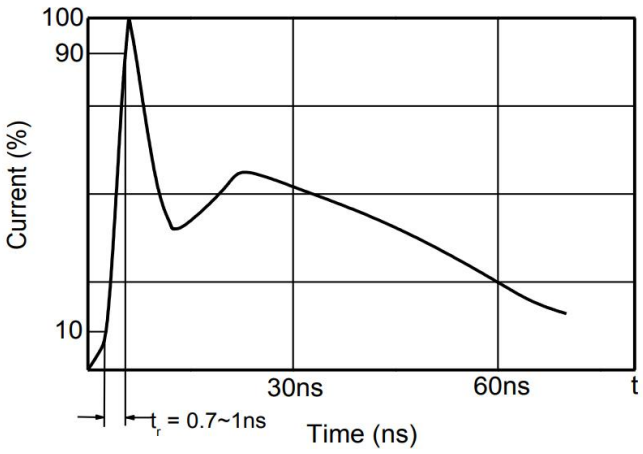
Symbol	Parameters
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
I_F	Forward Current
V_F	Forward Voltage @ I_F



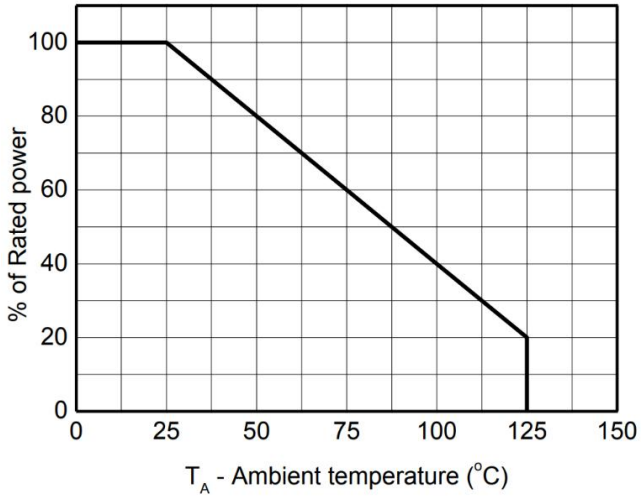
7. Typical Characteristic



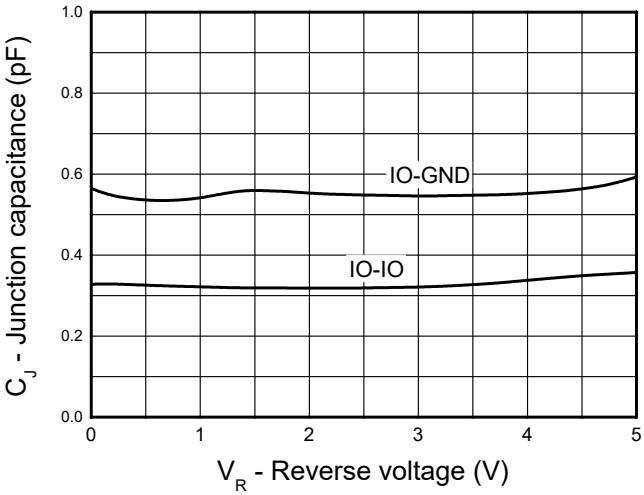
8/20μs waveform per IEC61000-4-5



Contact discharge current waveform per IEC61000-4-2

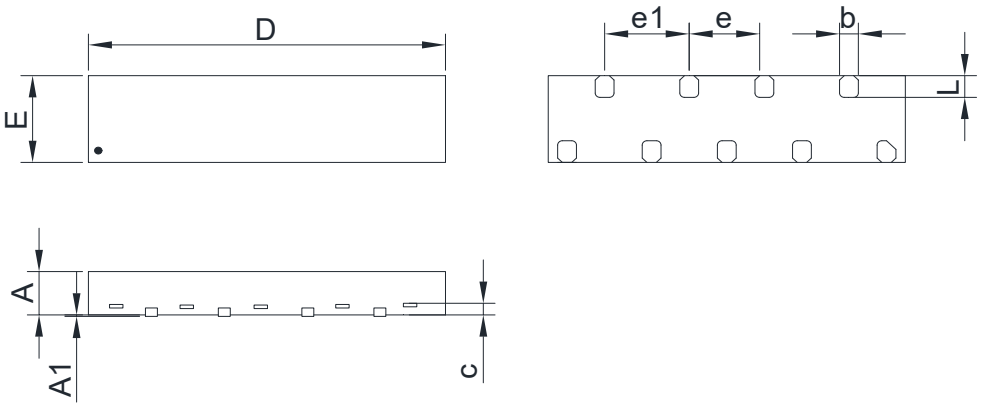


Power derating vs. Ambient temperature



Capacitance vs. Reverse voltage

8. Dimension (DFN3810-9L)



Symbol	Dimensions in Millimeters(mm)		
	MIN	TYP	MAX
D	3.75	3.80	3.85
E	0.95	1.00	1.05
L	0.20	0.25	0.30
b	0.15	0.20	0.25
e		0.80	
e1		0.90	
A	0.45	0.50	0.55
c		0.152	
A1	0.00	0.03	0.05

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