

SuperESD - AZ3133-04F-ES

1. Description

The AZ3133-04F-ES is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

2. Features

- IEC 61000-4-2 Level 4 ESD Protection
 - $\pm 30\text{kV}$ Contact Discharge
 - $\pm 30\text{kV}$ Air Discharge
- 650W Peak pulse Power(IO-GND, 8/20us)
- Low clamping voltage
- Working voltage: 3.3V
- Low leakage current
- RoHS compliant
- Protecting 4 unidirectional lines
- Junction Capacitance: 4pF Typ.

3. Applications

- Computers
- Communication systems
- Wireline and wireless telephone sets
- Printers
- Cellular phones handsets and accessories
- Set top boxes

4. Ordering Information

Part Number	Package	Marking	Material	Packing	Quantity per reel	Flammability Rating	Reel Size
AZ3133-04F-ES	DFN2626-10L	.3304C	Halogen free	Tape & Reel	3,000 PCS	UL 94V-0	7 inches

Table-1 Ordering information

5. Pin Configuration and Functions

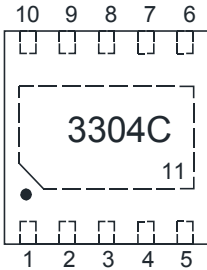
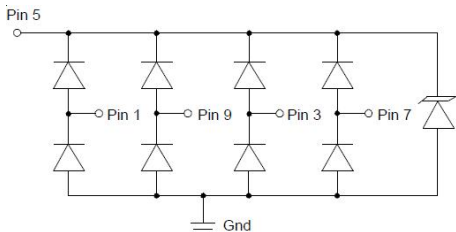
Pin	Name	Description	Outline	Circuit Diagram
1	IO1	Connect to I/O		
2/4/6/8/10	NC	NO Connection		
3	IO2	Connect to I/O		
5	VCC	Connect to VCC		
7	IO3	Connect to I/O		
9	IO4	Connect to I/O		
11	GND	Connect to GND		

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 (IO-GND $t_p=8/20\mu s$)@25°C	Ppk1	-	650	W
Peak pulse current (IO-GND $t_p=8/20\mu s$)@25°C	IPP1		40	A
Peak pulse power (VCC-GND $t_p=8/20\mu s$)@25°C	Ppk2	-	750	W
Peak pulse current (VCC-GND $t_p=8/20\mu s$)@25°C	IPP2		50	A
ESD (IEC61000-4-2 air discharge) @25°C	VESD	-	±30	kV
ESD (IEC61000-4-2 contact discharge) @25°C	VESD	-	±30	kV
Junction temperature	TJ	-	150	°C
Operating temperature	TOP	-40	125	°C
Storage temperature	TSTG	-55	150	°C
Lead temperature	TL	-	260	°C

Table-3 Absolute Maximum rating

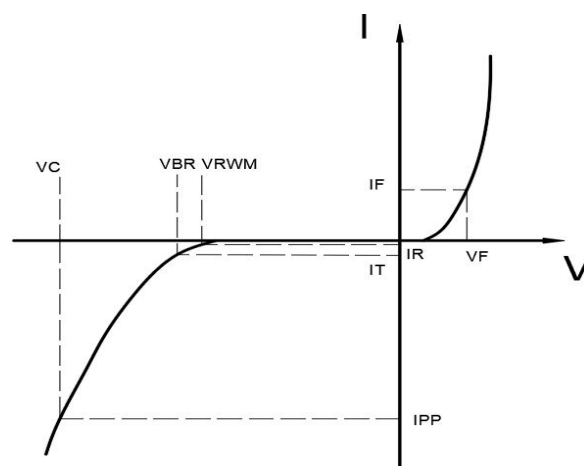
6.2. Electrical Characteristics

At TA = 25°C unless otherwise noted

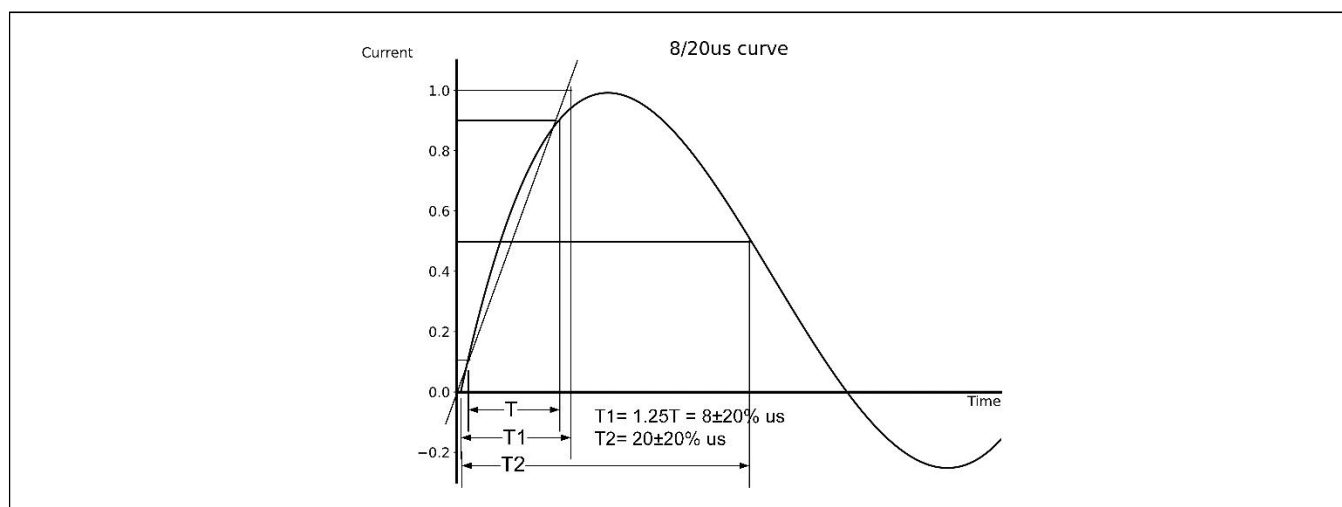
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	VRWM				3.3	V
Reverse Breakdown Voltage	VBR	IT=1mA	4.0			V
Reverse Leakage Current	IR	VRWM=3.3V			1.0	uA
Clamping Voltage	VC1	IPP=1A; IO-GND, tp=8/20us		7.0	10.0	V
Clamping Voltage	VC2	IPP=40A; IO-GND, tp=8/20us		13.0	16.0	V
Clamping Voltage	VC3	IPP=1A; VCC-GND, tp=8/20us		6.0	9.0	V
Clamping Voltage	VC4	IPP=50A; VCC-GND, tp=8/20us		12.0	15.0	V
Junction Capacitance	CJ	I/O to GND; VR=0V; f=1MHz		4.0	6.0	pF
		Vcc to GND; VR=0V; f=1MHZ		160	180	pF

Table-4 Electrical Characteristics

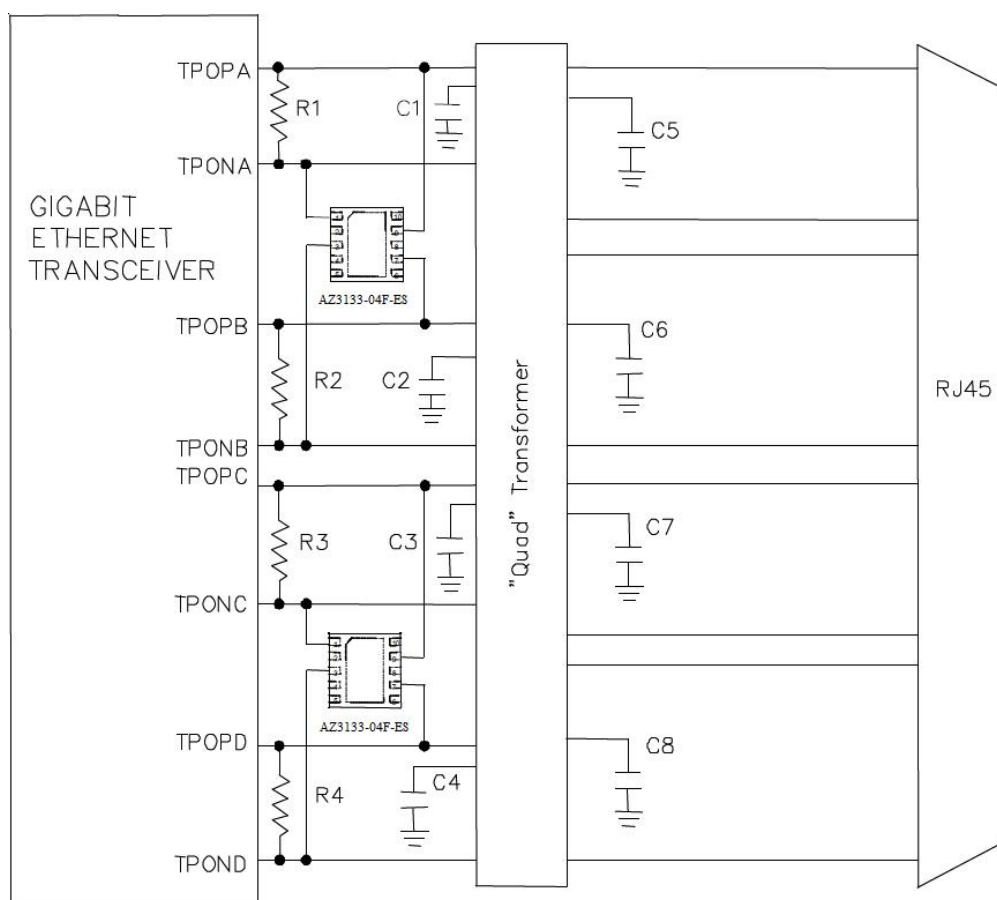
Symbol	Parameters
V_{RWM}	Peak Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
I_F	Forward Current
V_F	Forward Voltage @ I_F



Typical Characteristic

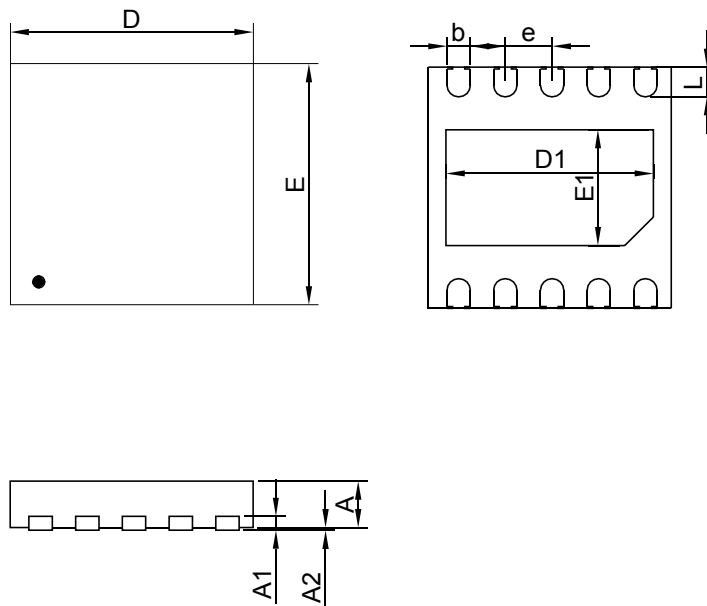


7. Typical Application



Typical Interface Application

8. Dimension (DFN2626-10L)



Unit: mm

Symbol		A	A1	A2	b	D
Spec	Min	0.45	0.15.REF	0	0.20	2.55
	Max	0.55		0.05	0.30	2.65
Symbol		D1	E	E1	e	L
Spec	Min	2.10	2.55	1.21	0.50.BSC	0.30
	Max	2.20	2.65	1.31		0.40

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