



DESCRIPTION

The AZC399 is a 4-channel ultra low capacitance rail protection diodes array. Each channel consists of diodes that steer positive or negative ESD current positive or negative rail. A zener diode is integrated between the positive and negative supply rails.

In the typical applications, the negative rail pin (assigned as GND) is connected with system ground. The Positive ESD current is steered to the ground through an ESD diode and Zener diode and the positive ESD voltage is clamped to the zener voltage.

The AZC399 is idea to protect high speed data lines. package type is provided for easy PCB layout.

The AZC399 is available in TSOT-26 package

ORDERING INFORMATION

Package Type	Part Number
TSOT-26	AZC399
Note	SPQ: 3,000pcs/Reel
AiT provides all RoHS Compliant Products	

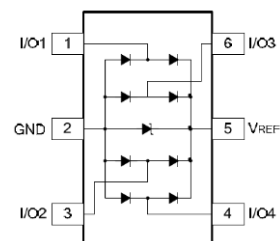
FEATURES

- 4 channels of ESD protection;
- Provides ESD protection to IEC61000-4-2 level 4 $\pm 15\text{kV}$ air discharge $\pm 8\text{kV}$ contact discharge
- Channel I/O to GND capacitance: 0.9pF(Max)
- Channel I/O to I/O capacitance: 0.45pF(Max)
- Low clamping voltage
- Low operating voltage
- Improved zener structure
- Optimized package for easy high speed data lines PCB layout
- One AZC399 can be used to replace 4 BAV99 devices in a 5V application or a lower than 5V application.
- Available in TSOT-26 package

APPLICATIONS

- HDMI / DVI ports
- Display Port interface
- 10M / 100M / 1G Ethernet
- USB 2.0 interface
- VGA interface
- Set-top box
- Flat panel Monitors / TVs
- PC / Note book

PIN DESCRIPTION





ABSOLUTE MAXIMUM RATINGS

P _{PP} , Peak Pulse Power(8/20μs)	150W
I _{PP} , Peak Pulse Current(8/20μs)	5A
V _{ESD1} , ESD per IEC 61000-4-2(Air)	±15kV
V _{ESD2} , ESD per IEC 61000-4-2(Contact)	±8kV
T _{OPR} , Operating Temperature Range	-55°C ~ +125°C
T _{STG} , Storage Temperature Range	-55°C ~ +150°C

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICS

T_{amb}=25°C

Parameter	Symbol	Conditions	Min.	Typ.	Max	Unit
Reverse Working Voltage	V _{RWM}	Any I/O pin to GND	-	-	5	V
Reverse Breakdown Voltage	V _{BR}	I _t = 1mA; Any I/O pin to GND	6	-	-	V
Reverse Leakage Current	I _R	V _{RWM} = 5V, T = 25°C; Any I/O pin to GND	-	-	1	μA
Positive Clamping Voltage	V _{C1}	I _{PP} = 1A, t _P = 8/20 μs; Positive pulse; Any I/O pin to GND	-	8.5	12.0	V
Negative Clamping Voltage	V _{C2}	I _{PP} = 1A, t _P = 8/20 μs; Negative pulse; Any I/O pin to GND	-	1.8	-	V
Junction Capacitance Between Channel	C _{J1}	V _R = 0V, f = 1MHz; Between I/O pins	-	0.35	0.45	pF
Junction Capacitance Between I/O And GND	C _{J2}	V _R = 0V, f = 1MHz; Any I/O pin to GND	-	-	0.9	pF



TYPICAL CHARACTERISTICS

Figure 1. Non-Repetitive Peak Pulse Power vs. Pulse Time

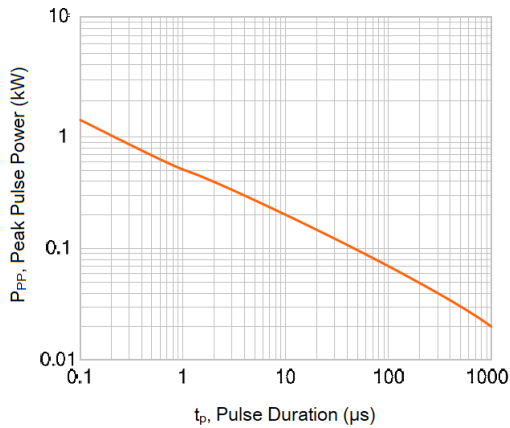


Figure 2. Power Derating Curve

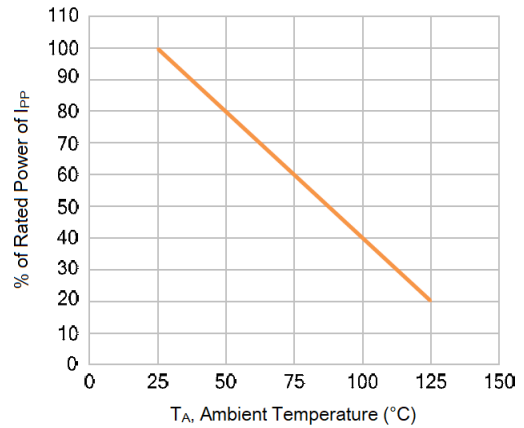


Figure 3. Pulse Waveform

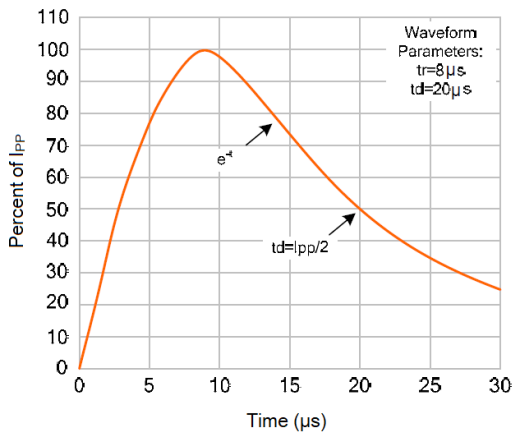


Figure 4. I/O-GND clamping voltage vs. peak pulse current

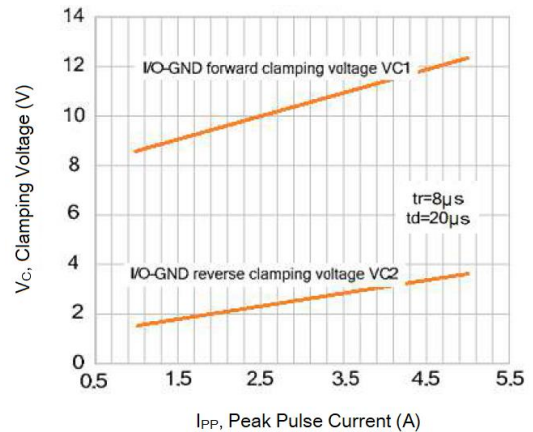


Figure 5. Normalized Capacitance vs. Reverse Voltage

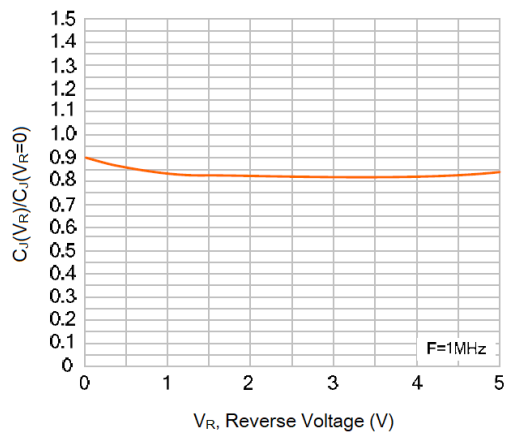


Figure 6. ESD Clamping for +8KV Pulse Per IEC61000-4-2

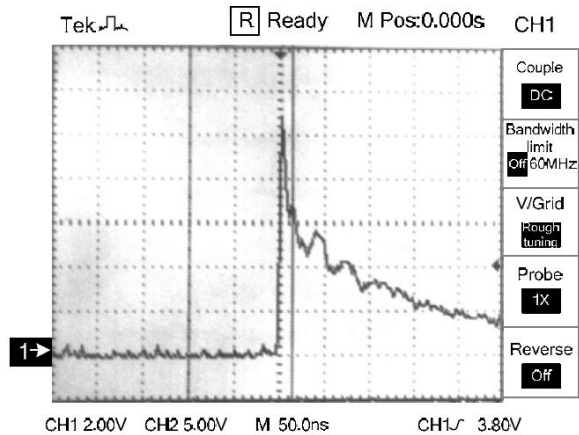




Figure 7. I/O-GND Insertion Loss vs. Frequency

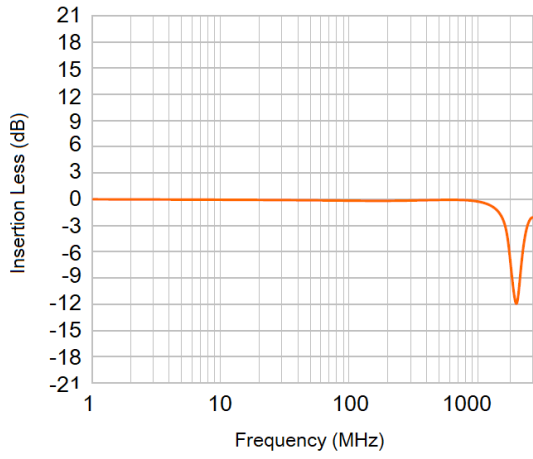
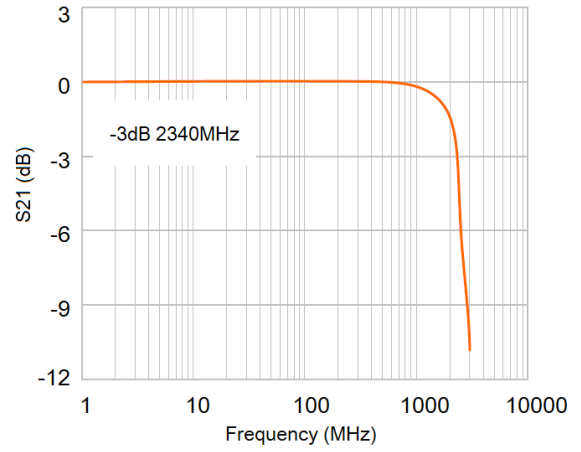


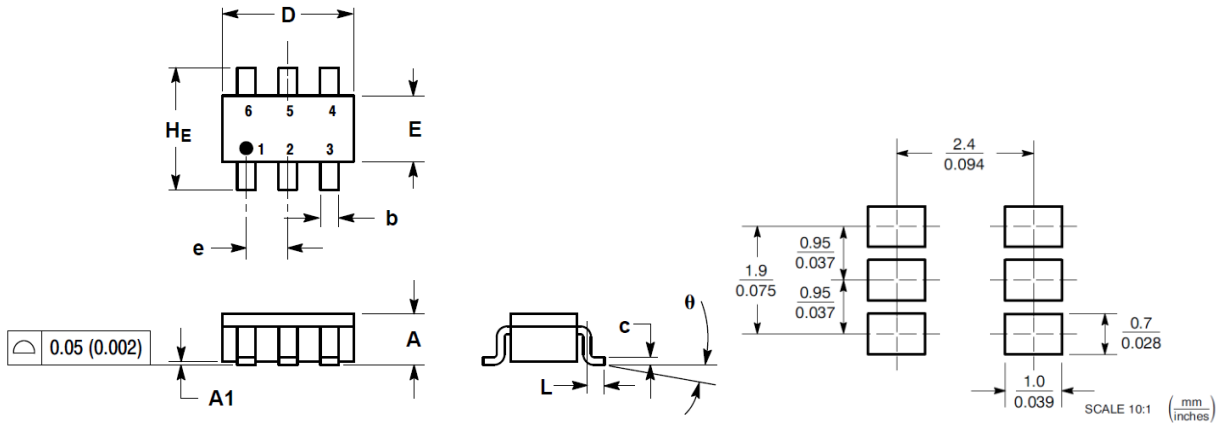
Figure 8. Insertion Loss vs. Frequency





PACKAGE INFORMATION

Dimension in TSOT-26 Package (Unit: mm)



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.90	1.10	0.035	0.043
A1	0.01	0.10	0.001	0.004
b	0.25	0.50	0.010	0.020
c	0.10	0.26	0.004	0.010
D	2.90	3.10	0.114	0.122
E	1.30	1.70	0.051	0.067
e	0.85	1.05	0.034	0.041
L	0.20	0.60	0.008	0.024
HE	2.50	3.00	0.099	0.118
θ	0°	10°	0°	10°



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