DESCRIPTION

The AZC199-04S a low capacitance of 0.4pF maximum and operates with virtually no insertion loss to 1GHz. This makes the device ideal for protection of high-speed data lines such as USB 2.0, Firewire, DVI, and gigabit Ethernet interfaces. The low capacitance array configuration allows the user to protect four high-speed data or transmission lines. The low inductance construction minimizes voltage overshoot during high current surges. They may be used to meet the ESD immunity requirements of IEC61000-4-2, Level 4 (±15kV air, ±8kV contact discharge).

This device has been specifically designed to protect sensitive components which are connected to high-speed data and transmission lines from overvoltage caused by ESD (electrostatic discharge), CDE (Cable Discharge Events),and lightning.

FEATURES

✧Protects four I/O lines and one Vcc line
✧Low capacitance
✧Working voltages : 5V
✧Low leakage current
✧Low capacitance for high-speed interfaces
✧No insertion loss to 2.0GHz
✧Response Time is < 1 ns
✧Solid-state silicon avalanche technology
✧ROHS compliant

MACHANICAL DATA

✧Flammability Rating: UL 94V-0
✧Terminal: Matte tin plated.
✧Packaging: Tape and Reel
✧High temperature soldering guaranted:260℃/10s
✧Reel size: 7 inch

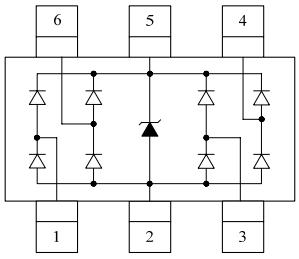
ORDERING INFORMATION

✧Device: AZC199-04S
✧Package: SOT-163
✧Material: Halogen free
✧Packing: Tape & Reel
✧Quantity per reel: 3,000pcs

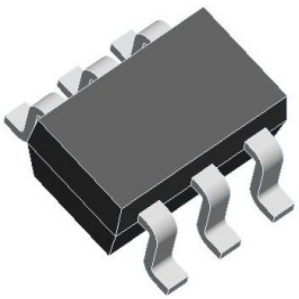
APPLICATIONS

✧Digital Visual Interface (DVI)
✧USB 1.1/2.0/OTG
✧IEEE 1394 Firewire Ports
✧Notebooks & Handhelds
✧Projection TV & Monitors
✧Set-top box
✧Flat Panel Displays
✧PCI Express

PIN CONFIGURATION



PACKAGE OUTLINE

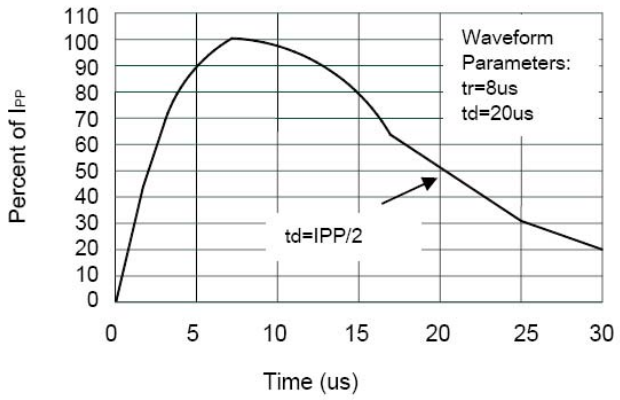


ABSOLUTE MAXIMUM RATING			
Symbol	**Parameter**	**Value**	**Units**
P_{Pk}	Peak Pulse Power (8/20μs)	150	W
I_{PP}	Peak Pulse Current (8/20μs)	5	A
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±15 ±8	kV
T_{OPT}	Operating Temperature	-55/+150	°C
T_{STG}	Storage Temperature	-55/+150	°C

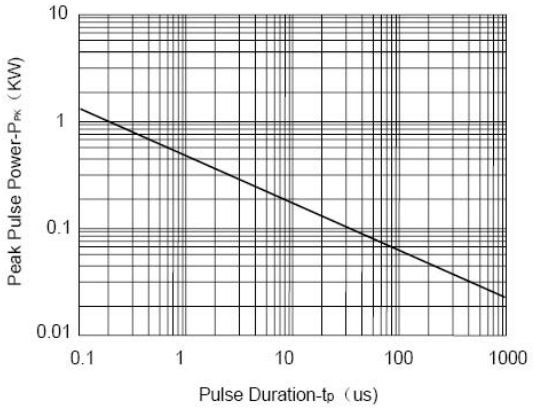
ELECTRICAL CHARACTERISTICS (Tamb=25°C)						
Symbol	**Parameter**	**Test Condition**	**Min**	**Typ**	**Max**	**Units**
V_{RWM}	Reverse Working Voltage	Any I/O pin to GND			5.0	V
V_{BR}	Reverse Breakdown Voltage	I_T = 1mA Any I/O pin to GND	6.0			V
I_R	Reverse Leakage Current	V_{RWM} = 5V Any I/O pin to GND			1	μA
V_F	Diode Forward Voltage	I_F = 15mA			1.2	V
V_{C1}	Clamping Voltage 1	I_{PP} = 1A, t_p = 8/20μs Any I/O pin to GND			15	V
V_{C2}	Clamping Voltage 2	I_{PP} = 5A, t_p = 8/20μs Any I/O pin to GND			28	V
C_{J1}	Junction Capacitance 1	V_R = 0V, f = 1MHz Between I/O pins			0.4	pF
C_{J2}	Junction Capacitance 2	V_R = 0V, f = 1MHz Any I/O pin to GND			0.8	pF

Note: I/O pins are pin 1,3,4,6.

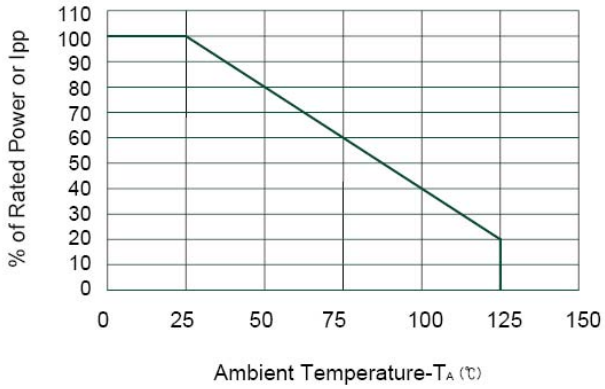
ELECTRICAL CHARACTERISTICS CURVE



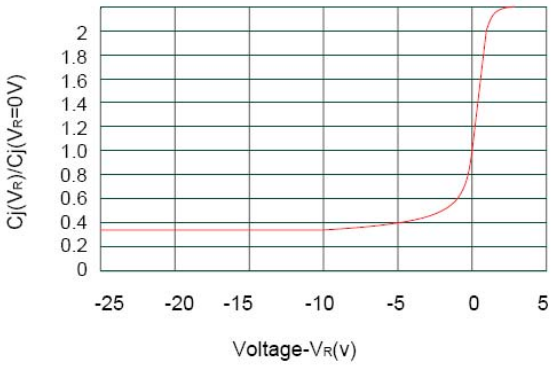
Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time

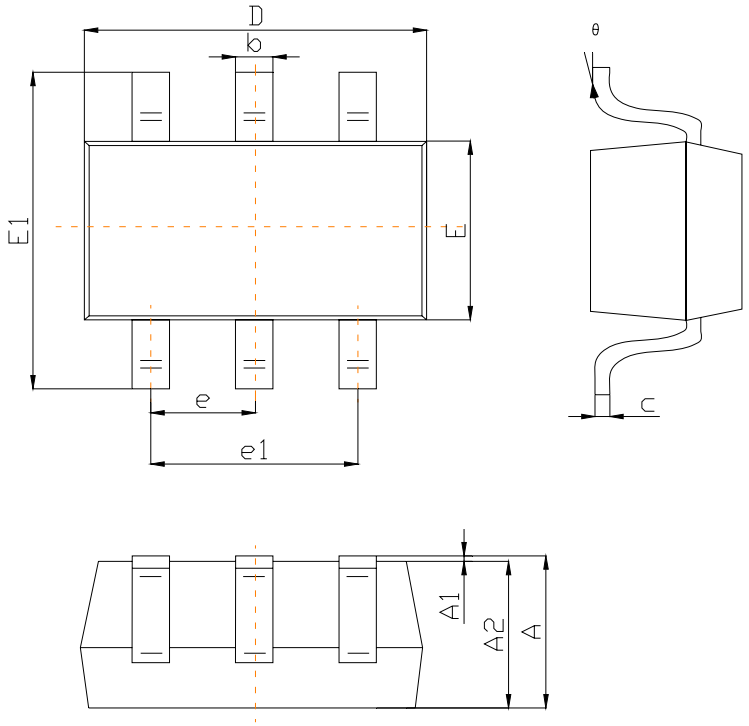


Power Derating Curve



Junction Capacitance vs. Reverse Voltage

PACKAGE OUTLINE DIMENSIONS



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100		0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0,950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
	0°	8°	0°	8°