

Features

- ESD Protect for 2 Lines with Bi-directional
- Provide ESD protection for the protected line to IEC 61000-4-2 (ESD) ±15kV (air), ±15kV (contact)
 IEC 61000-4-4 (EFT) 40A (5/50ns)
 IEC 61000-4-5 (Lightning) 4A (8/20µs)
 Cable Discharge Event (CDE)
- Small SOT23-3L package saves board space
- Protect two I/O lines or two power lines
- Fast turn-on and Low clamping voltage
- Low operating voltage: 3.3V
- Solid-state silicon-avalanche and active circuit triggering technology
- Green Part

Applications

- Computer Interfaces Protection
- Microprocessors Protection
- Serial and Parallel Ports Protection
- Control Signal Lines Protection
- Power lines on PCB Protection
- Latchup Protection

Description

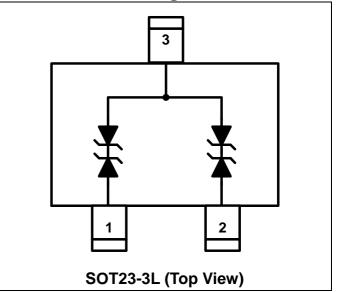
AZ5123-02S is a design which includes two bi-directional surge rated clamping cells to protect two power lines, or two control lines, or two low speed data lines in an electronic systems. The AZ5123-02S has been specifically designed to protect sensitive components which are connected to power and control lines from over-voltage damage and latch-up caused by Electrostatic Discharging (ESD), Electrical Fast Transients (EFT), Lightning, and Cable Discharge Event (CDE).

AZ5123-02S is a unique design which includes proprietary clamping cells in a single package. During transient conditions, the proprietary clamping cells prevent over-voltage on the power lines or control/data lines, protecting any downstream components.

AZ5123-02S is bi-directional and may be used on lines where the signal swings above and below ground.

AZ5123-02S may be used to meet the ESD immunity requirements of IEC 61000-4-2, Level 4 (\pm 15kV air, \pm 8kV contact discharge).

Circuit Diagram / Pin Configuration





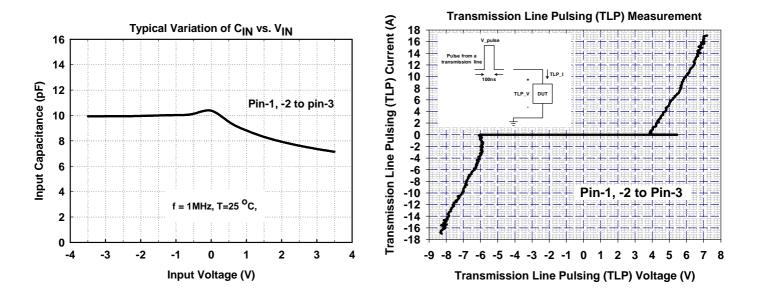
SPECIFICATIONS

ABSOLUTE MAXIMUM RATINGS				
PARAMETER	PARAMETER	RATING	UNITS	
Peak Pulse Current (tp =8/20us)	I _{PP}	4	А	
Operating Supply Voltage (pin-1,-2 to pin-3)	V _{DC}	±3.8	V	
ESD per IEC 61000-4-2 (Air)	V _{ESD}	±15	kV	
ESD per IEC 61000-4-2 (Contact)		±15		
Lead Soldering Temperature	T _{SOL}	260 (10 sec.)	℃	
Operating Temperature	T _{OP}	-55 to +85	C	
Storage Temperature	T _{STO}	-55 to +150	٦°	

ELECTRICAL CHARACTERISTICS						
PARAMETER	SYMBOL	CONDITIONS	MINI	TYP	MAX	UNITS
Reverse Stand-Off Voltage	V _{RWM}	T=25 ℃.	-3.3		3.3	V
Reverse Leakage Current	I _{Leak}	V _{RVM} =±3.3V, T=25 ℃.			1	μA
Reverse Breakdown Voltage	V _{BV}	I _{BV} = 1mA, T=25 ℃.	4		6.5	V
ESD Clamping Voltage	$V_{ESD_{CL}}$	IEC 61000-4-2 +6kV, T=25 °C, Contact mode.		8.5		V
Channel Input Capacitance	C _{IN}	V_{R} = 0V, f = 1MHz, T=25 °C.		11	14	pF



Typical Characteristics



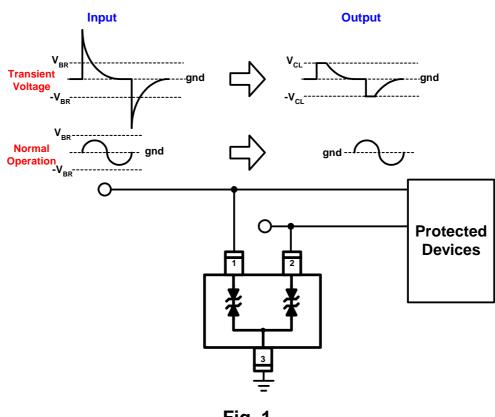


Applications Information

The AZ5123-02S is designed to protect two lines against System ESD/EFT/Lightning pulses by clamping them to an acceptable reference. It provides bi-directional protection.

The usage of the AZ5123-02S is shown in Fig. 1. Protected lines, such as data lines, control lines, or power lines, are connected at pin 1 and pin 2 respectively. The pin 3 is connected to a ground plane on the board. In order to minimize parasitic inductance in the board traces, all path lengths connected to the pins of AZ5123-02S should be kept as short as possible. In order to obtain enough suppression of ESD induced transient, good circuit board is critical. Thus, the following guidelines are recommended:

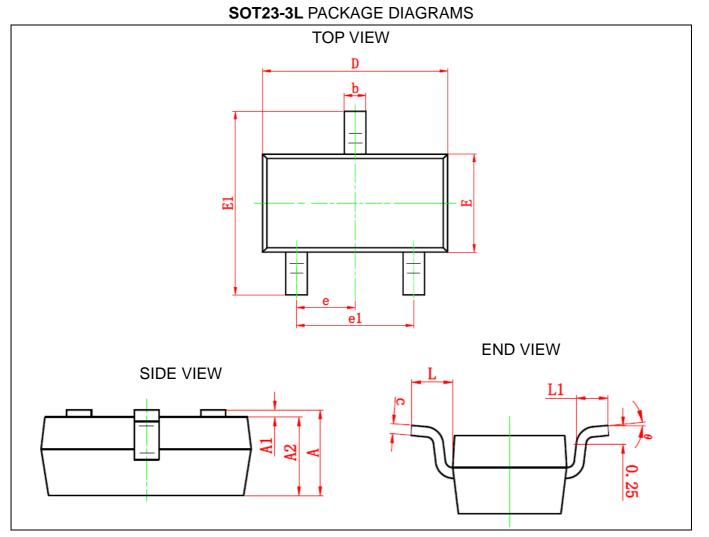
- Minimize the path length between the protected lines and the AZ5123-02S.
- Place the AZ5123-02S near the input terminals or connectors to restrict transient coupling.
- The ESD current return path to ground should be kept as short as possible.
- Use ground planes whenever possible.
- NEVER route critical signals near board edges and near the lines which the ESD transient easily injects to.







Mechanical Details

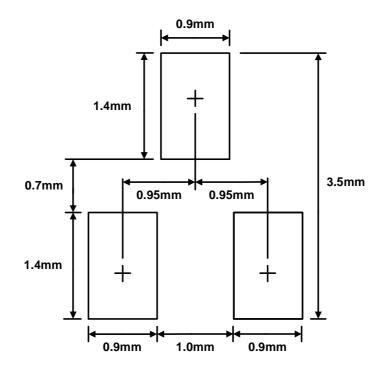


PACKAGE DIMENSIONS

Symbol	Dimensions	In Millimeters	Dimensions In Inches		
Symbol	Min	Max	Min	Max	
A	0.900	1.150	0.035	0.045	
A1	0.000	0.100	0.000	0.004	
A2	0.900	1.050	0.035	0.041	
b	0.300	0.500	0.012	0.020	
С	0.080	0.150	0.003	0.006	
D	2.800	3.000	0.110	0.118	
E	1.200	1.400	0.047	0.055	
E1	2.250	2.550	0.089	0.100	
е	0.950 TYP		0.037	7 TYP	
e1	1.800	2.000	0.071	0.079	
L	0.550 REF		0.022 REF		
L1	0.300	0.500	0.012	0.020	
θ	0°	8°	0°	6°	



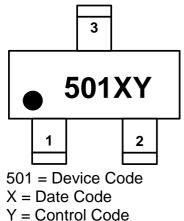
LAND LAYOUT



Notes:

This LAND LAYOUT is for reference purposes only. Please consult your manufacturing partners to ensure your company's PCB design guidelines are met.

MARKING CODE



Part Number	Marking Code		
AZ5123-02S	501XY		

Ordering Information

PN#	Material	Туре	Reel size	MOQ/internal box	MOQ/carton
AZ5123-02S.R7G	Green	T/R	7 inch	4 reel=12,000/box	6 box=72,000/carton



Revision History

Revision	Modification Description		
Revision 2009/04/22	Preliminary Release.		
Revision 2009/08/31	Formal Release.		
Revision 2011/07/28	1. Update the Company Logo.		
	2. Add the Ordering Information.		