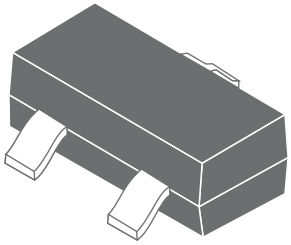
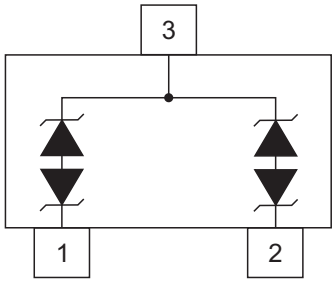
Electro-Static Discharge for Automobile
AESD24G2B
Bidirectional TVS Diode

SOT-23



Pin Configuration



Features

- 350 Watts Peak Pulse Power per Line (tp=8/20μs)
- Protects one I/O or power line
- Low clamping voltage
- Working voltages: 24V
- Low leakage current
- AEC-Q101
- MSL Level 1

IEC Compatibility

- IEC61000-4-2 (ESD) ±30kV (air), ±30kV (contact)
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5 (Lightning) 6A (8/20μs)
- ESD Rating of Class 3B per Human Body Model

Applications

- RS-232, RS-422 & RS-423 Data Lines
- Automotive Networks
- CAN Bus Protection
- Wireless Network Systems
- Digit Video Interface (DVI)
- Medical Sensors

Mechanical Characteristics

- JEDEC SOT-23 Package
- Molding Compound Flammability Rating:UL 94V-O
- Weight 8.0 Millgrams(Approximate)
- Quantity Per Reel:3000pcs
- Reel Size:7 inch
- Lead Finish:Lead Free

Maximum Ratings(T_A=25℃ unless otherwise specified)

Parameter	Symbol	Value	Units
Peak Pulse Power(tp=8/20μs)	P_{PP}	350	Watts
Lead Soldering Temperature	T_L	260(10 sec.)	℃
Operating Temperature Range	T_J	-55~150	℃
Storage Temperature Range	T_{STG}	-55~150	℃

Electrical Characteristics(T_A=25℃ unless otherwise specified)

AESD24G2B(Marking:C24)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				24	V
Breakdown Voltage	V_{BR}	I_T=1mA	26.7			V
Clamping Voltage	V_C	I_{PP}=1A,tp=8/20μs			33	V
		I_{PP}=6A,tp=8/20μs			41	V
Reverse Leakage Current	I_R	@V_{RWM}			1	μA
Junction Capacitance	$C_{I/O}$	0Vdc,f=1MHz Pin1 to 3 or Pin2 to 3		25	30	pF

Ratings and Characteristic Curves

Fig.1 Non-Repetitive Pulse Power vs.Pulse Time

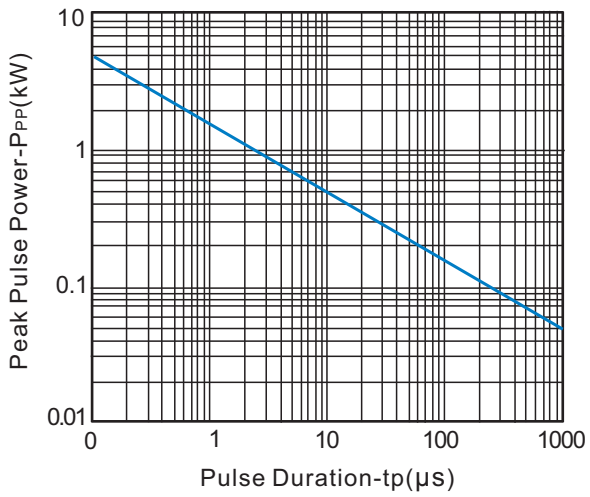
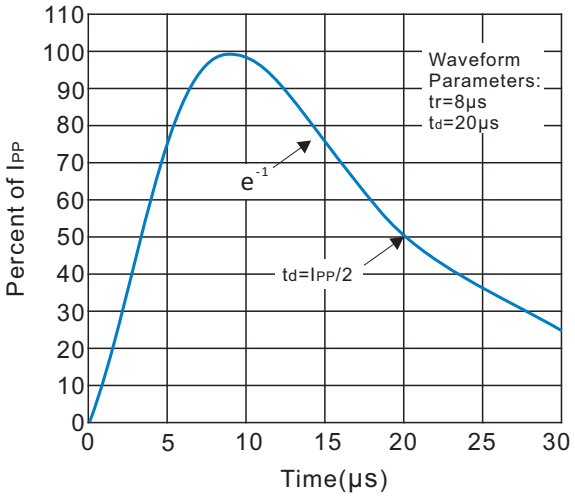
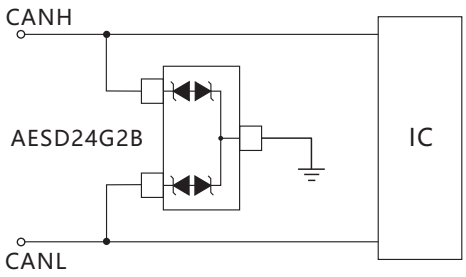


Fig.2 Pulse Waveform



Application Information

CAN Protection



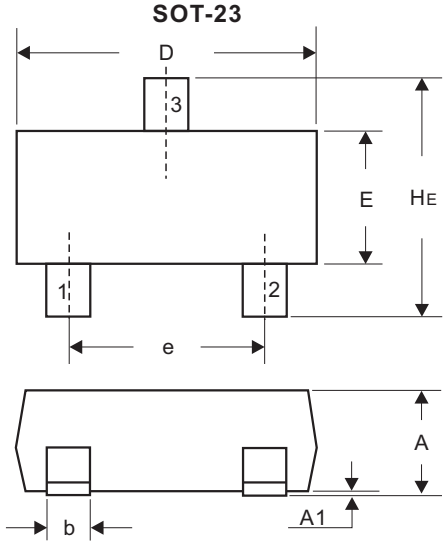
PCB Layout Recommendations

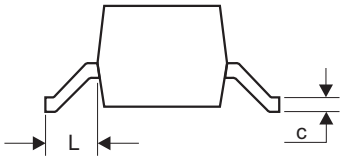
The location and circuit board layout is critical to maximize the effectiveness of the CAN protection circuit. The following guidelines are recommended:

- Locate the protection devices as close as possible to the CAN connector. This allows the protection devices to absorb the energy of the transient voltage before it can be coupled into the adjacent traces on the PCB.
- Minimize the loop area for the high.speed data lines, power and ground lines to reduce the radiated emissions.
- Avoid running protection conductors in parallel with unprotected conductors
- Use ground planes wherever possible to reduce the parasitic capacitance and inductance of the PCB that degrades the effectiveness of a filter device.
- Using shared transient return paths to a common ground point.

Dimensions(SOT-23)

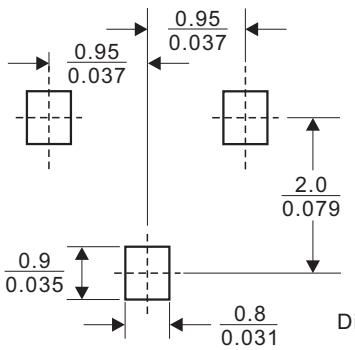
SOT-23





DIM	Millimeters		Inches	
	Min	Max	Min	Max
A	0.89	1.11	0.035	0.044
A1	0.01	0.10	0.001	0.004
b	0.37	0.50	0.015	0.020
c	0.09	0.18	0.003	0.007
D	2.80	3.04	0.110	0.120
E	1.20	1.40	0.047	0.055
e	1.78	2.04	0.070	0.081
L	0.35	0.69	0.014	0.029
HE	2.10	2.64	0.083	0.104

Recommended Mounting Pad Layout



Dimensions in (millimeters / inches)