

## Features

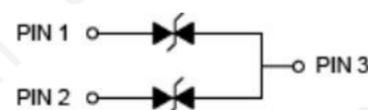
- ◆ 230W (8/20μs) Peak Pulse Power
- ◆ High ESD Protection Level
- ◆ SOT23 Thin SMD Package
- ◆ RoHS compliant
- ◆ Matte Tin Lead finish (Pb-Free)
- ◆ Protect Two CAN Bus Lines



SOT-23

## Applications

- ◆ DeviceNet
- ◆ Low and High Speed CAN
- ◆ Smart Distribution Systems (SDS)
- ◆ Controlled Area Network – CAN 2.1 / CAN FD



Circuit Diagram

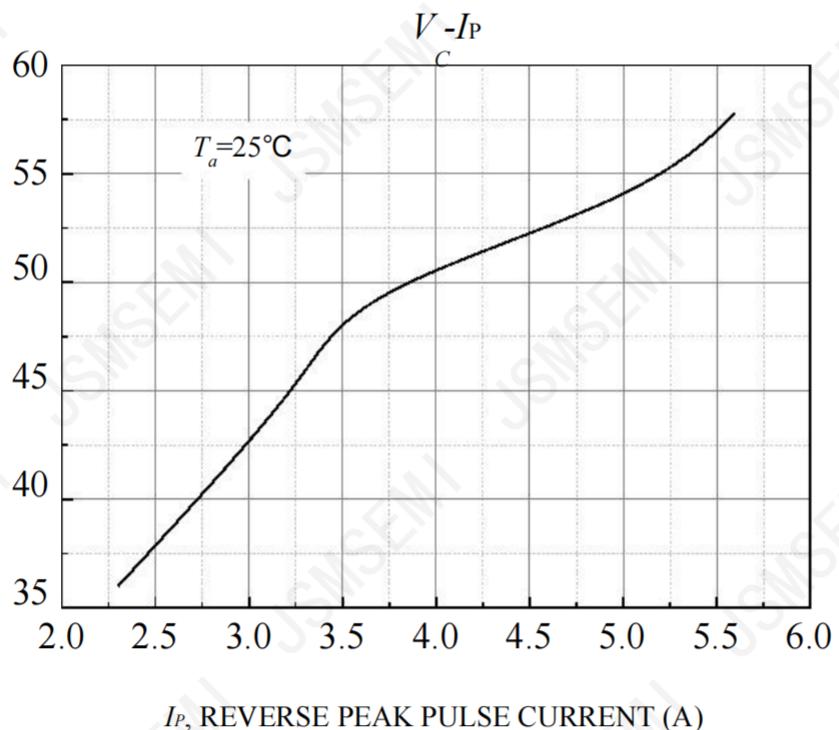
## Maximum Ratings (Ta = 25°C)

Symbol	Parameter	Value	Unit
PPK	Peak Pulse Power	230	W
IPP	Peak Pulse Current	4	A
V <sub>ESD</sub> (Contact)	Contact ESD Voltage per IEC61000-4-2	25	kV
V <sub>ESD</sub> (Air)	Air ESD Voltage per IEC61000-4-2	25	kV
T <sub>J</sub>	Junction Temperature	-65 to +150	°C
T <sub>STG</sub>	Storage Temperature	-65 to +150	°C

Electrical Characteristics ( $T_a = 25^\circ\text{C}$ )

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
VRWM	Reverse Working Peak Voltage				24	V
VBR	Reverse Breakdown Voltage	IT = 1mA	26.7		30.5	V
IR	Reverse Leakage Current	VRWM = 24V		<1	100	nA
VC	Clamping Voltage	IPP = 1A (8/20μs)			40	V
VC	Clamping Voltage	IPP = 4A (8/20μs)			60	V
CJ	Capacitance	VR = 0V, f = 1MHz		11	17	pF

## Typical Performance Curves



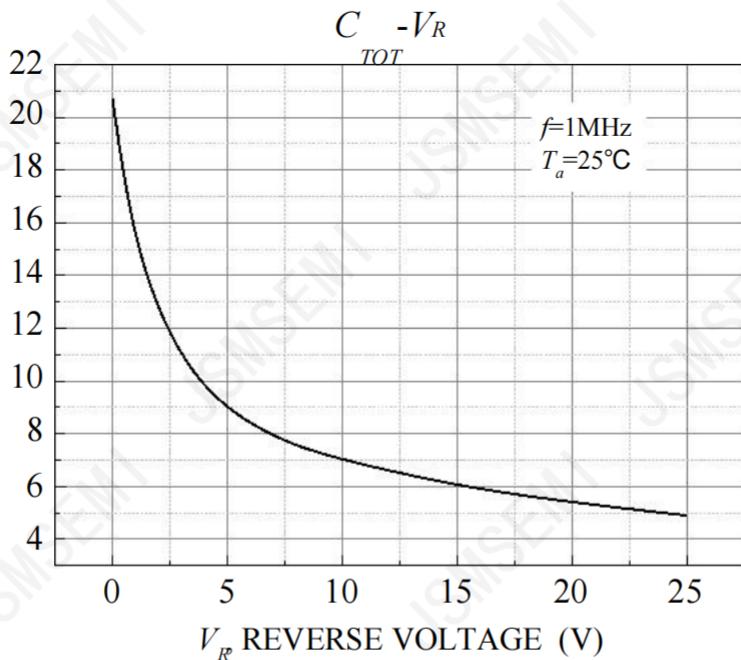
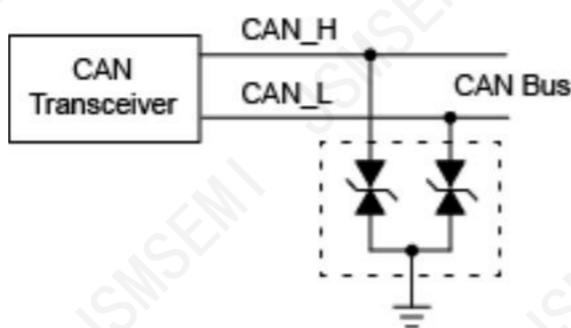


Figure 4. Reverse Voltage vs Capacitance

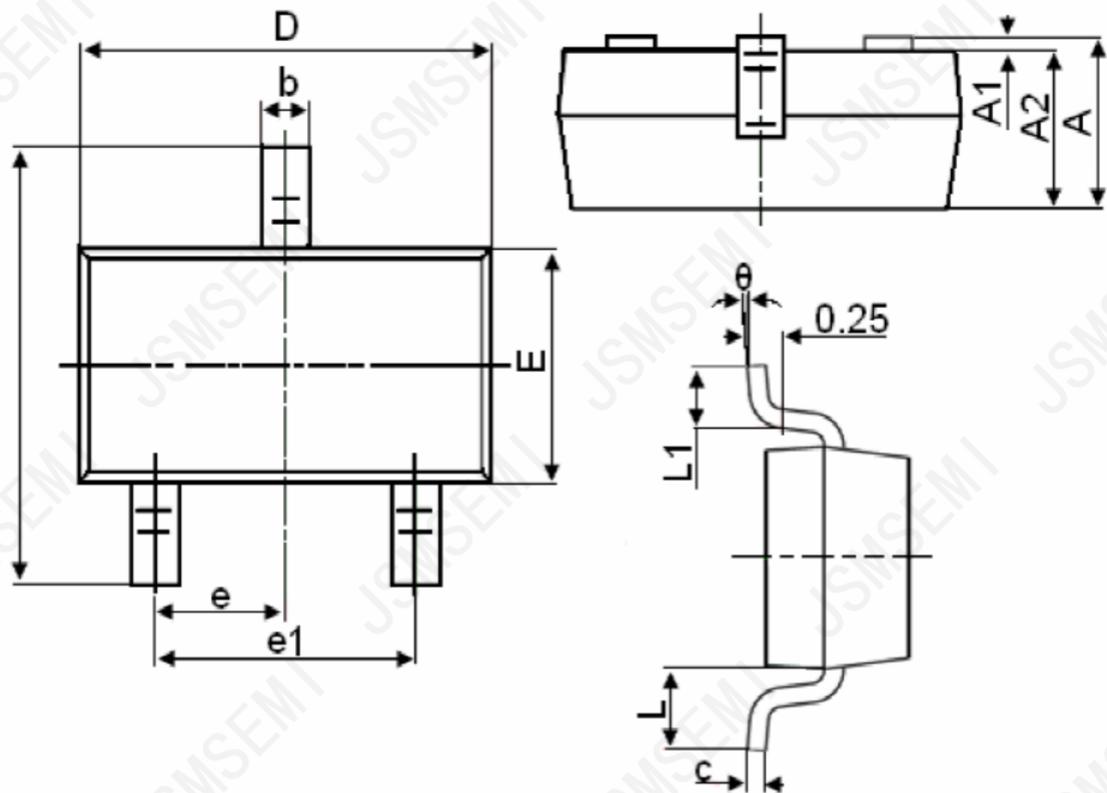
## Application Background

The Controller Area Network (CAN) is a serial communication protocol designed for providing reliable high speed data transmission in harsh environments. TVS diodes provide a low cost solution to conducted and radiated Electromagnetic Interference (EMI) and Electrostatic Discharge (ESD) noise problems. The noise immunity level and reliability of CAN transceivers can be easily increased by adding external TVS diodes to prevent transient voltage failures. This provides a transient voltage suppression solution for CAN data communication lines. The device is a low capacitance dual bidirectional TVS device in a compact SOT-23 package especially suitable for CAN2.1 (CAN-FD). This device is based on Zener technology that optimizes the active area of a PN junction to provide robust protection against transient EMI surge voltage and ESD. The device has been tested to EMI and ESD levels that exceed the specifications of popular high speed CAN networks.



## Package Information

SOT-23



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	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
c	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
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

## Revision History

Rev.	Change	Date
V1.0	Initial version	2/23/2024

## Important Notice

JSMSEMI Semiconductor (JSMSEMI) PRODUCTS ARE NEITHER DESIGNED NOR INTENDED FOR USE IN MILITARY AND/OR AEROSPACE, AUTOMOTIVE OR MEDICAL DEVICES OR SYSTEMS UNLESS THE SPECIFIC JSMSEMI PRODUCTS ARE SPECIFICALLY DESIGNATED BY JSMSEMI FOR SUCH USE. BUYERS ACKNOWLEDGE AND AGREE THAT ANY SUCH USE OF JSMSEMI PRODUCTS WHICH JSMSEMI HAS NOT DESIGNATED FOR USE IN MILITARY AND/OR AEROSPACE, AUTOMOTIVE OR MEDICAL DEVICES OR SYSTEMS IS SOLELY AT THE BUYER'S RISK.

JSMSEMI assumes no liability for application assistance or customer product design. Customers are responsible for their products and applications using JSMSEMI products.

Resale of JSMSEMI products or services with statements different from or beyond the parameters stated by JSMSEMI for that product or service voids all express and any implied warranties for the associated JSMSEMI product or service. JSMSEMI is not responsible or liable for any such statements.

JSMSEMI All Rights Reserved. Information and data in this document are owned by JSMSEMI wholly and may not be edited, reproduced, or redistributed in any way without the express written consent from JSMSEMI.

Any and all information described or contained herein are subject to change without notice due to product/technology improvement, etc. When designing equipment, refer to the "Delivery Specification" for the JSMSEMI product that you intend to use.

For additional information please contact [Kevin@jsmsemi.com](mailto:Kevin@jsmsemi.com) or visit [www.jsmsemi.com](http://www.jsmsemi.com)