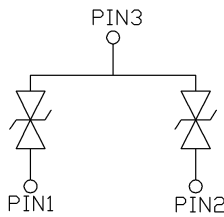


## CAN-FD bus ESD protection diode



**SOT-23**



### Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- Dual Line CAN-FD Bus Protector for SOT-23 Package
- Max Peak Pulse Power 180W per Line (tp=8/20 μs)
- IEC 61000-4-2, level 4 (ESD)
- IEC 61000-4-5 (surge), I<sub>PP</sub> = 5A at tp = 8/20 μs
- Part no. with suffix “Q” means AEC-Q101 qualified

### Applications

- Automotive Controlled Area Network

### Mechanical Data

- **Case:** SOT-23
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

### ■ Maximum Ratings (T<sub>a</sub>=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Peak Pulse Power per Line (tp=8/20 μs) (Note1)	P <sub>PP</sub>	W	180
Peak Pulse Current per Line (tp=8/20 μs) (Note1)	I <sub>PP</sub>	A	5
Storage Temperature Range	T <sub>stg</sub>	°C	-55 ~ +150
Junction Temperature	T <sub>J</sub>	°C	-55 ~ +150
Human Body Model (HBM) (Note2)	V <sub>ESD</sub>	kV	30
IEC 61000-4-2 (contact discharge) (Note2)		kV	30

Note1: Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC 61000-4-5.

Note2: Measured from pin 1 to 3 or 2 to 3.

### ■ Electrical Characteristics (T<sub>a</sub>=25°C unless otherwise noted)

ITEM	SYMBOL	UNIT	CONDITIONS	MIN.	TYP.	MAX.
Reverse Working Voltage	V <sub>RWM</sub>	V		-	-	24
Reverse Breakdown Voltage	V <sub>BR</sub>	V	I <sub>r</sub> =1mA	25.5		35.5
Reverse Leakage Current	I <sub>R</sub>	nA	V <sub>RWM</sub> =24V	-	1	50
Clamping Voltage(pin 1 to 3 or 2 to 3) <sup>1)</sup>	V <sub>C</sub>	V	I <sub>PP</sub> =1A (8/20μs Pulse)	-	22	32
Clamping Voltage(pin 1 to 3 or 2 to 3) <sup>1)</sup>	V <sub>C</sub>	V	I <sub>PP</sub> =5A (8/20μs Pulse)	-	27	36
Dynamic resistance 2)	R <sub>DYN</sub>	Ω	TLP, tp=100ns, I/O to Ground		0.46	
Junction Capacitance(pin 1 to 3 or 2 to 3)	C <sub>j</sub>	pF	V <sub>R</sub> =0V, f=1MHZ	-	6	10

Notes:

(1). Non-repetitive current pulse, according to IEC61000-4-5.

(2). TLP parameter: Z<sub>0</sub> = 50Ω, tp = 100ns, tr = 2ns, averaging window from 60ns to 80ns. RDYN is calculated from 4A to 16A.



## ■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD2CANFD24T2Q	F2	Approximate 0.01	3000	30000	120000	7" reel

## ■ Characteristics (Typical)

Fig.1: 8/20 $\mu$ s Pulse Waveform

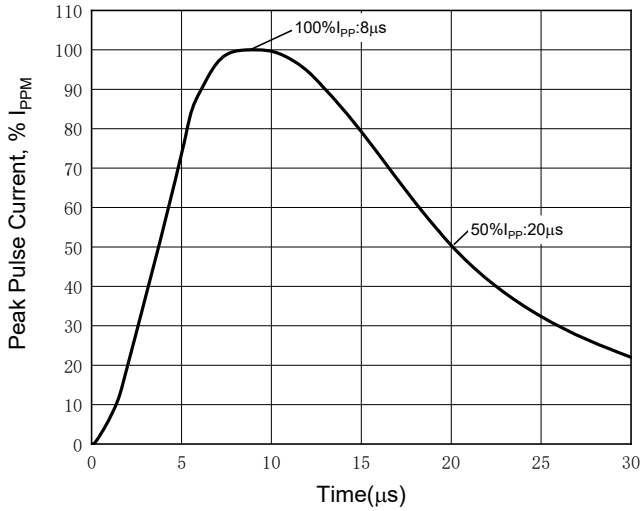


Fig.2 :Peak Pulse Current vs Clamping Voltage

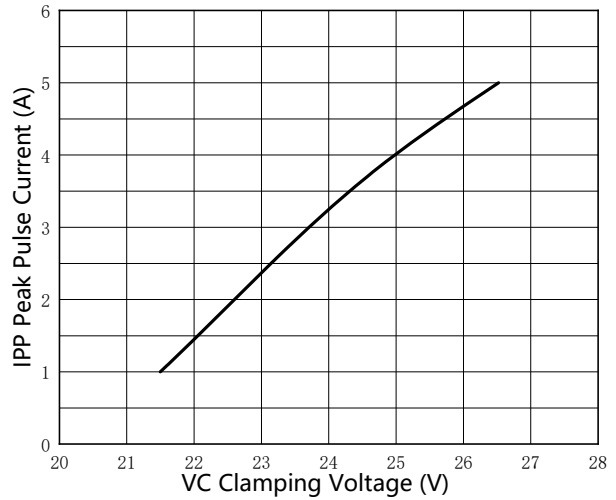


Fig.3: Power Derating Curve

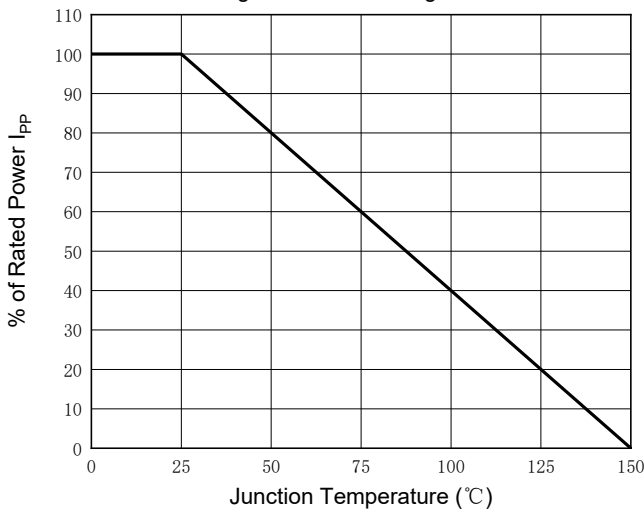


Fig.4: Capacitance vs. Bias

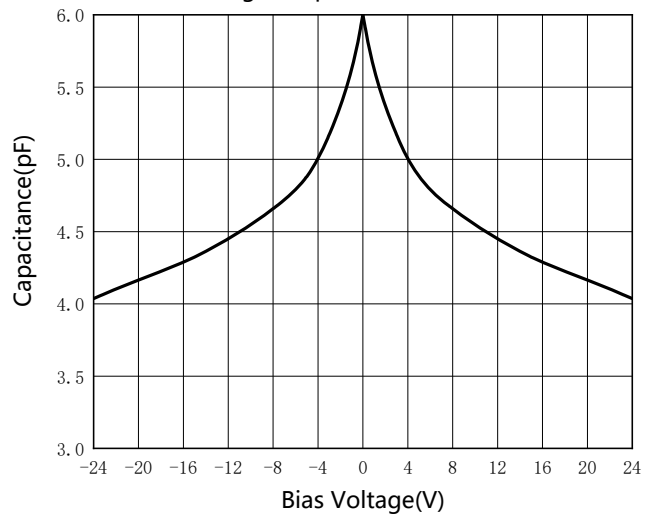
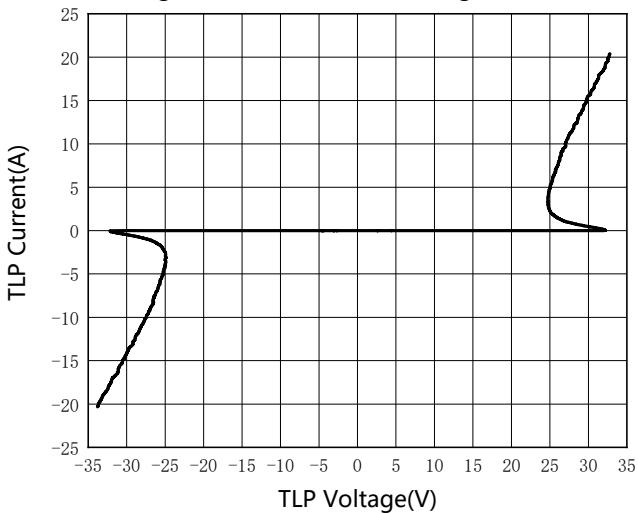
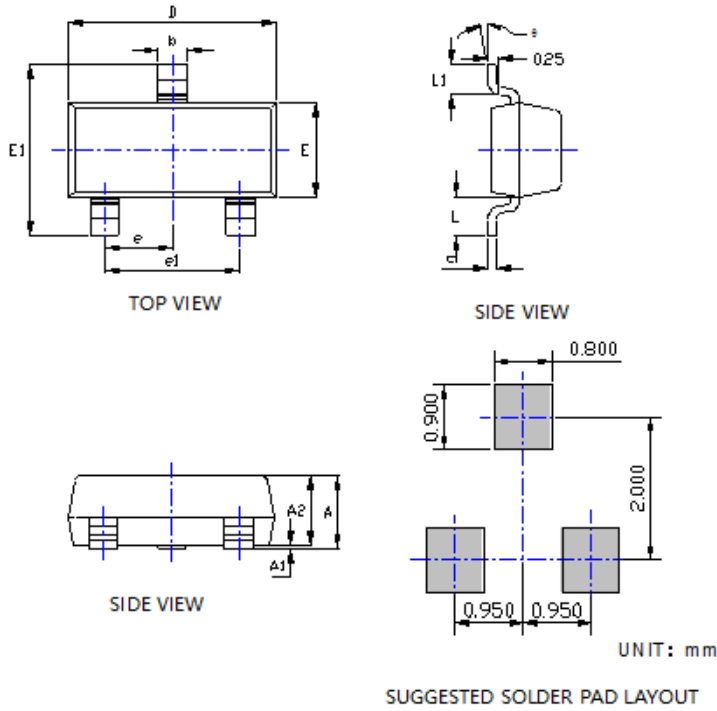


Fig.5:Transmission Line Pulsing(TLP) Plot



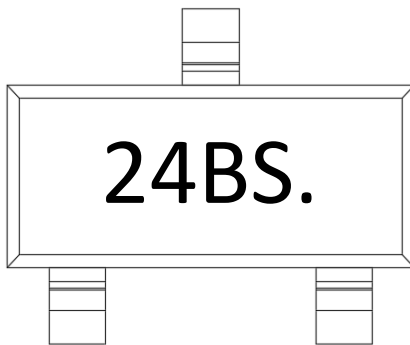
## ■ Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.020	0.300	0.500
θ	0°	8°	0°	8°

NOTE:  
 1. PACKAGE BODY SIZES EXCLUDE MOLD FLASH AND GATE BURRS.  
 2. TOLERANCE 0.1mm UNLESS OTHERWISE SPECIFIED.  
 3. THE PAD LAYOUT IS FOR REFERENCE PURPOSES ONLY.

## ■ Marking Information



Note:

1. All marking is at middle of the product body
2. All marking is in laser marking
3. Body color: Black



## Disclaimer

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