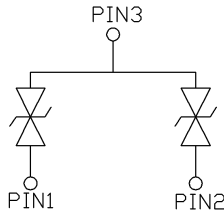


CAN-FD bus ESD protection diode



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 ($t_p=8/20 \mu s$)
- IEC 61000-4-2, level 4 (ESD)
- IEC 61000-4-5 (surge), $I_{PP} = 5A$ at $t_p = 8/20 \mu s$
- 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 ($T_a=25^\circ C$ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Peak Pulse Power per Line ($t_p=8/20 \mu s$) (Note1)	P_{PP}	W	180
Peak Pulse Current per Line ($t_p=8/20 \mu s$) (Note1)	I_{PP}	A	5
Storage Temperature Range	T_{stg}	$^\circ C$	-55 ~ +150
Junction Temperature	T_J	$^\circ C$	-55 ~ +150
Human Body Model (HBM) (Note2)	V_{ESD}	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 ($T_a=25^\circ C$ unless otherwise noted)

ITEM	SYMBOL	UNIT	CONDITIONS	MIN.	TYP.	MAX.
Reverse Working Voltage	V_{RWM}	V		-	-	24
Reverse Breakdown Voltage	V_{BR}	V	$I_r=1mA$	25.5		35.5
Reverse Leakage Current	I_R	nA	$V_{RWM}=24V$	-	1	50
Clamping Voltage(pin 1 to 3 or 2 to 3) ¹⁾	V_C	V	$I_{PP}=1A$ (8/20 μs Pulse)	-	22	32
Clamping Voltage(pin 1 to 3 or 2 to 3) ¹⁾	V_C	V	$I_{PP}=5A$ (8/20 μs Pulse)	-	27	36
Dynamic resistance 2)	R_{DYN}	Ω	TLP, $t_p=100ns$, I/O to Ground		0.46	
Junction Capacitance(pin 1 to 3 or 2 to 3)	C_j	pF	$V_R=0V$, $f=1MHZ$	-	6	10

Notes:

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

(2). TLP parameter: $Z_0 = 50\Omega$, $t_p = 100ns$, $t_r = 2ns$, averaging window from 60ns to 80ns. R_{DYN} 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 μ s Pulse Waveform

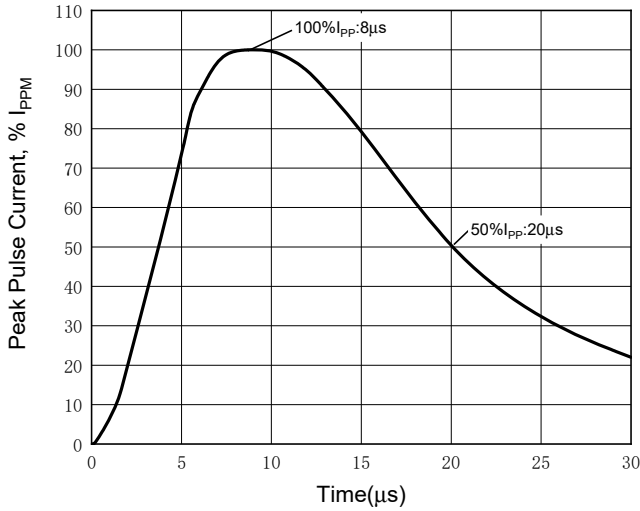


Fig.2 :Peak Pulse Current vs Clamping Voltage

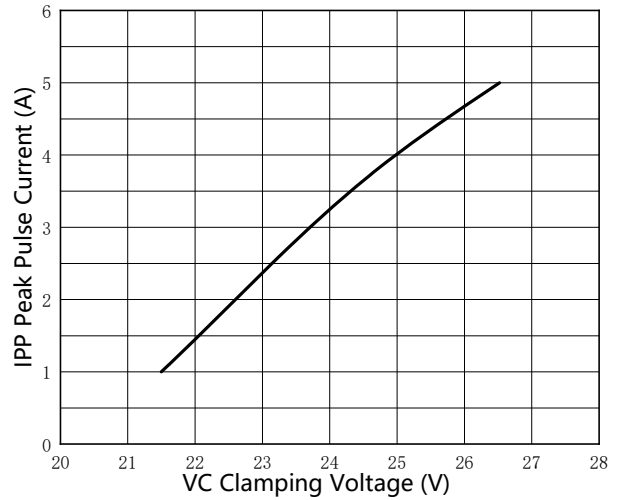


Fig.3: Power Derating Curve

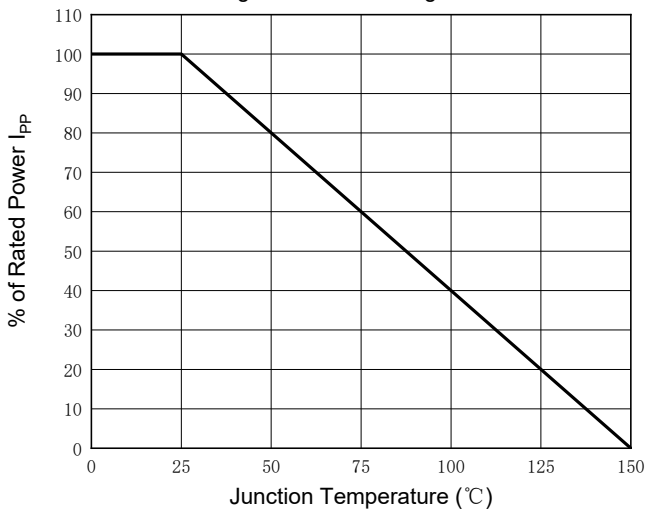


Fig.4: Capacitance vs. Bias

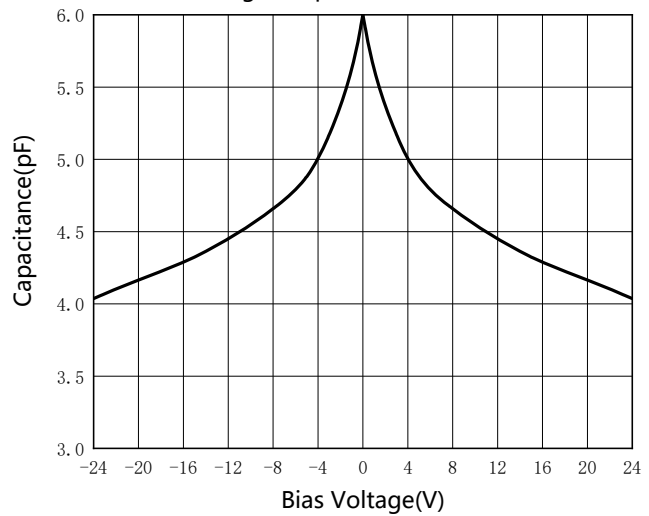
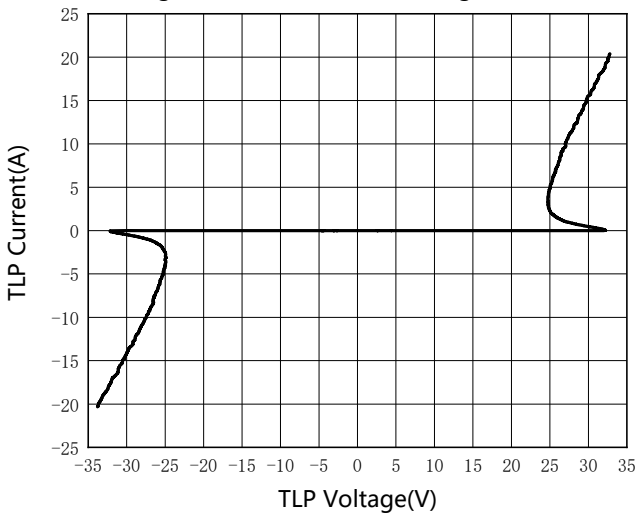
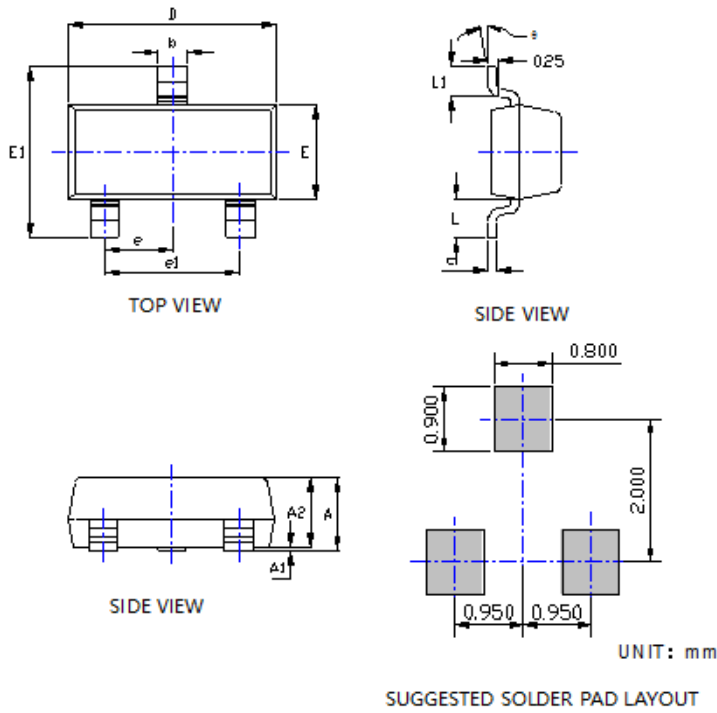


Fig.5:Transmission Line Pulsing(TLP) Plot



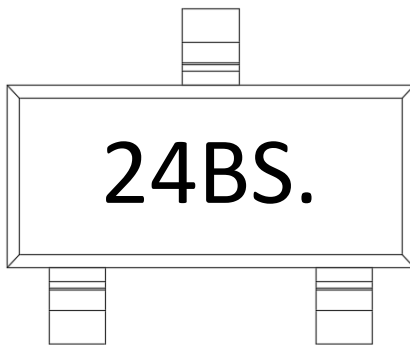
■ Outline Dimensions



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



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