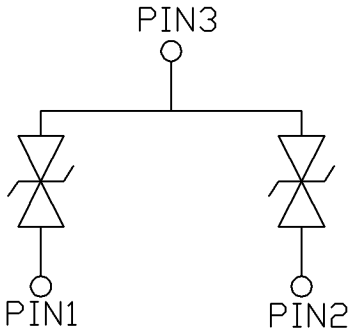
CAN bus ESD protection diode



SOT-23

Features

- Epoxy meets UL-94 V-0 flammability rating and halogen free
- Moisture Sensitivity Level 1
- Dual Line CAN Bus Protector for SOT-23 Package
- Max Peak Pulse Power 300W per Line (tp=8/20 us)
- Low Clamping Voltage V_C=40V@I_{PP}=1A
- IEC 61000-4-2，level 4 (ESD)
- IEC 61000-4-5 (surge)， IPP = 5 A at tp = 8/20 us
- 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
- **Marking：** AN

■ Maximum Ratings (Ta=25℃ Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Peak Pulse Power per Line (tp=8/20 us) （Note1）	P_{PP}	W	300
Peak Pulse Current per Line (tp=8/20 us) （Note1）	I_{PP}	A	5
Storage Temperature Range	T_{stg}	°C	-55~+150
Junction Temperature	T_J	°C	-55~+100
Human Body Model（HBM） （Note2）	V_{ESD}	KV	10
IEC 61000-4-2 (contact discharge) （Note2）		KV	22

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 (Ta=25℃ unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Reverse Working Voltage	V_{RWM}	V		-		24
Reverse Breakdown Voltage	V_{BR}	V	I_T=1mA	27		-
Reverse Leakage Current	I_R	nA	V_{RWM}=24V	-		200
Clamping Voltage(pin 1 to 3 or 2 to 3)	V_C	V	I_{PP}=1A (8/20us Pulse)	-		40
	V_C	V	I_{PP}=5A (8/20us Pulse)	-		60
Junction Capacitance(pin 1 to 3 or 2 to 3)	C_j	pF	V_{BR}=0V，f=1MHZ	-		30

■ Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD1CAN24T2Q	F2	Approximate 0.01	3000	30000	120000	7" reel

■ Characteristics (Typical)

Fig.1 8/20 μs pulse waveform according to IEC 61000-4-5

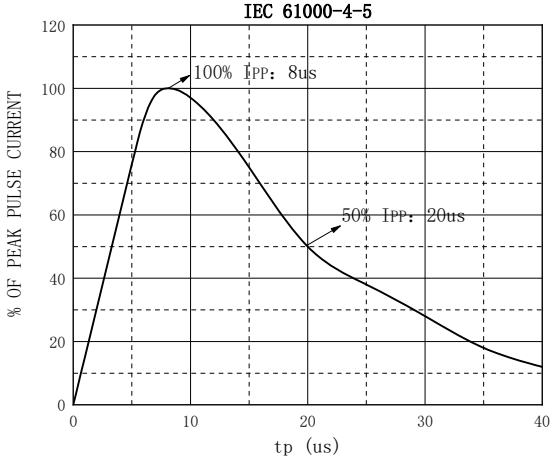


Fig.2 Clamping Voltage vs Peak Pulse Current

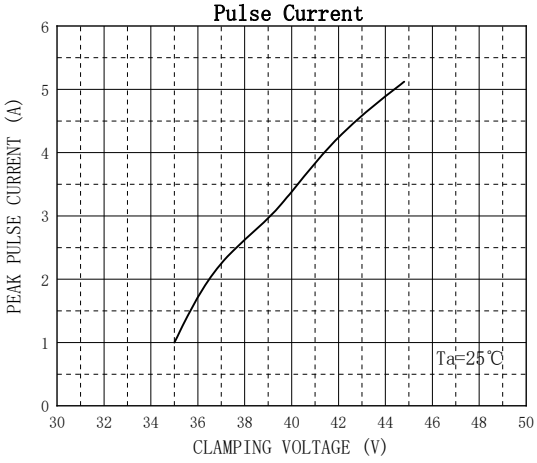


Fig.3 Temperature Power Dissipation Derating

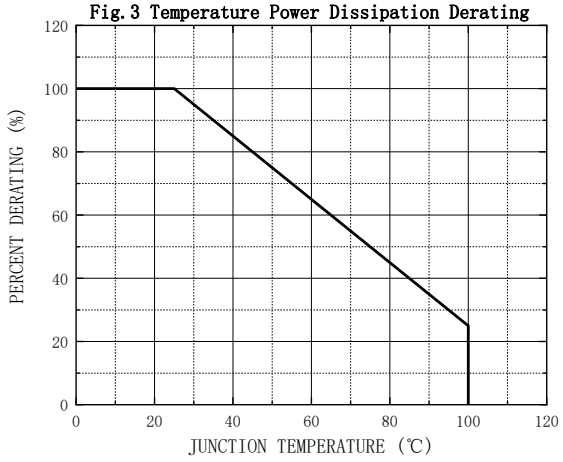


Fig.4 Peak pulse power as a function of exponential pulse duration

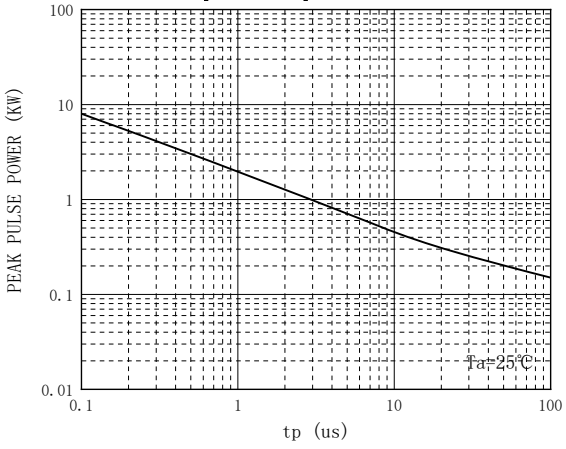
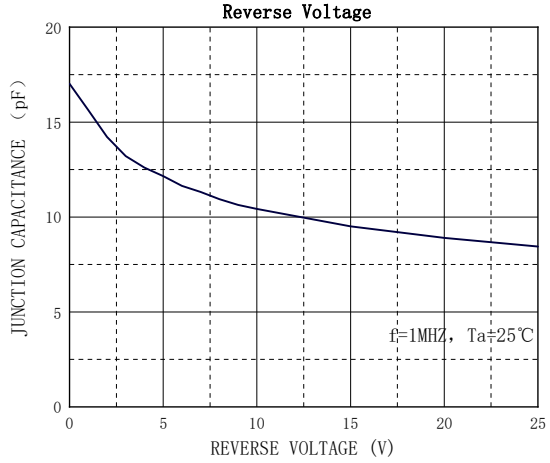
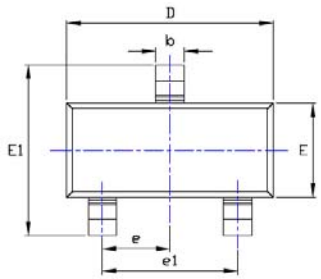


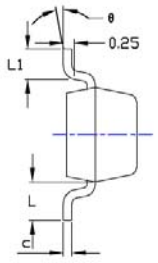
Fig.5 Typical Junction Capacitance vs Reverse Voltage



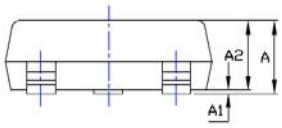
■ Outline Dimensions



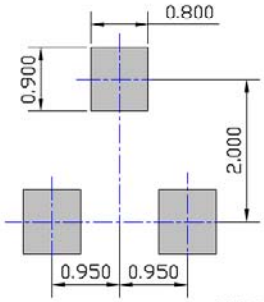
TOP VIEW



SIDE VIEW



SIDE VIEW



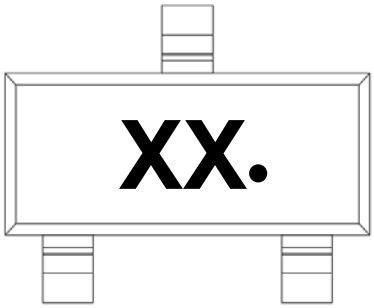
UNIT：mm

SUGGESTED SOLDER PAD LAYOUT

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	0.200	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.XX is Marking Code
4. Body color: Black

Disclaimer

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