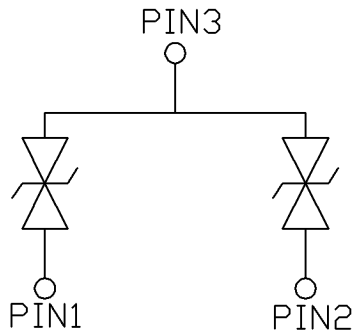


CAN bus ESD protection diode



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), $I_{PP} = 5 A$ at $t_p = 8/20 us$
- 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 ($T_a=25^\circ\text{C}$ 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}	$^\circ\text{C}$	-55~+150
Junction Temperature	T_J	$^\circ\text{C}$	-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 ($T_a=25^\circ\text{C}$ unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Reverse Working Voltage	V_{RWM}	V		-		24
Reverse Breakdown Voltage	V_{BR}	V	$I_T=1\text{mA}$	27		-
Reverse Leakage Current	I_R	nA	$V_{RWM}=24\text{V}$	-		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	$V_{BR}=0\text{V}$, $f=1\text{MHZ}$	-		30



ESD1CAN24T2Q

■ Ordering Information (Example)

PREFERRED 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 μ s pulse waveform according to IEC 61000-4-5

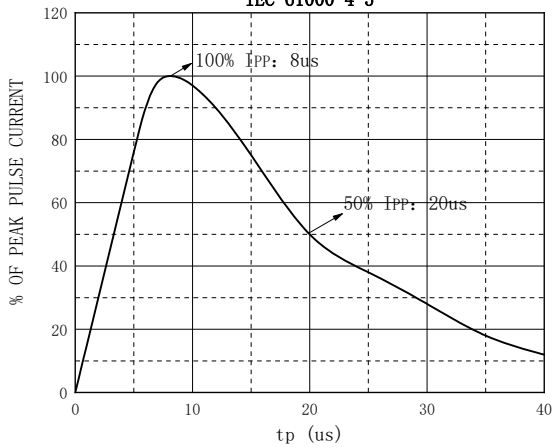


Fig.2 Clamping Voltage vs Peak Pulse Current

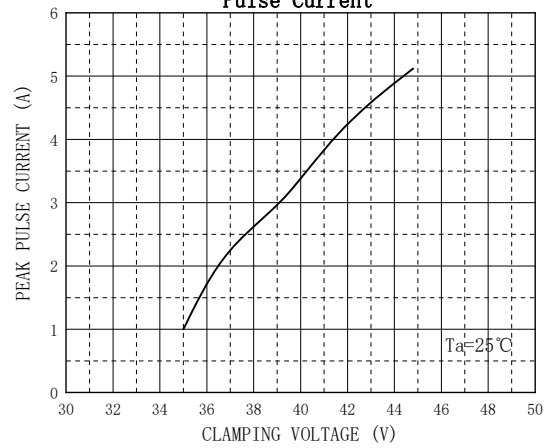


Fig.3 Temperature Power Dissipation Derating

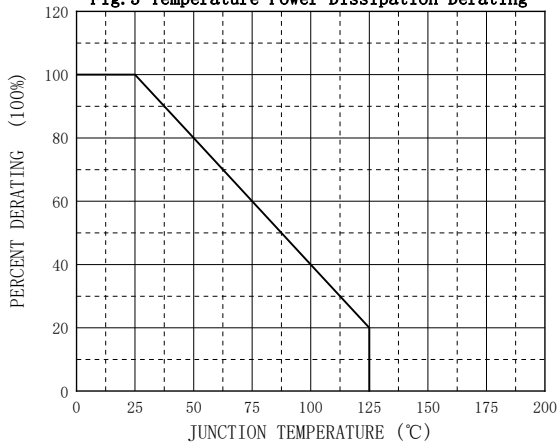


Fig.4 Peak pulse power as a function of exponential pulse duration

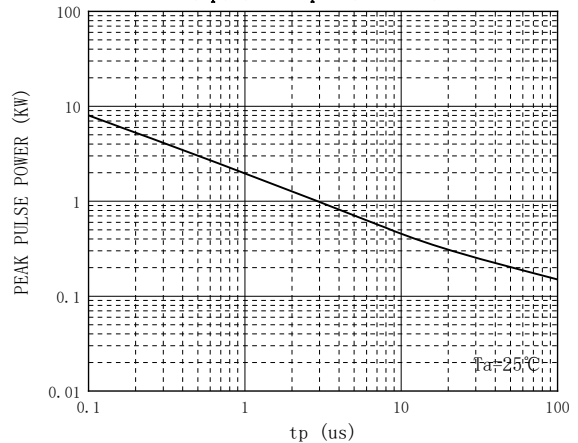
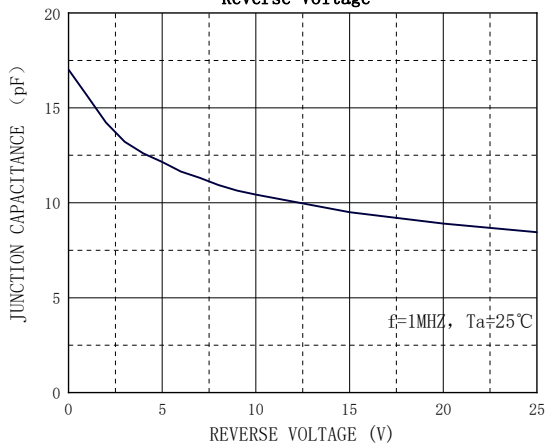


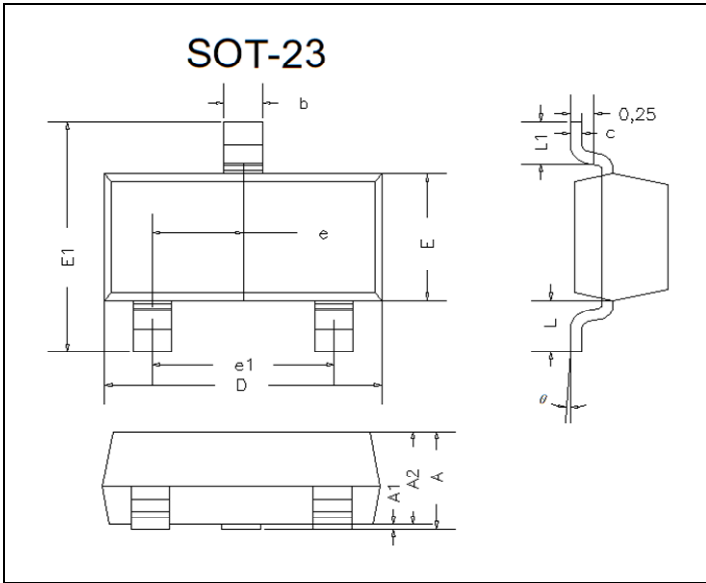
Fig.5 Typical Junction Capacitance vs Reverse Voltage





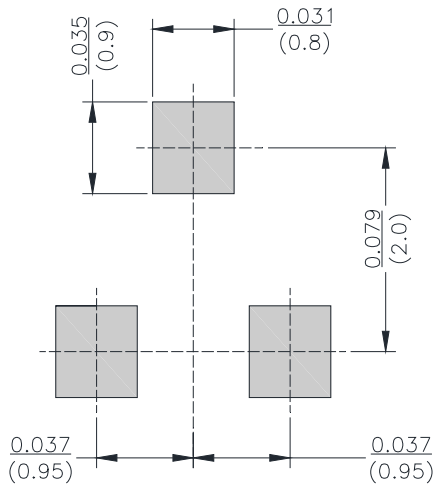
ESD1CAN24T2Q

■ Outline Dimensions



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.035	0.045	0.90	1.15	
A1	0.000	0.004	0.00	0.10	
A2	0.035	0.041	0.90	1.05	
b	0.012	0.020	0.30	0.50	
c	0.004	0.008	0.10	0.20	
D	0.110	0.118	2.80	3.00	
E	0.047	0.055	1.20	1.40	
E1	0.089	0.100	2.25	2.55	
e	0.370TYP		0.95TYP		
e1	0.071	0.079	1.80	2.00	
L	0.220REF		0.55REF		
L1	0.012	0.020	0.30	0.50	
θ	0°	8°	0°	8°	

■ Soldering Footprint



Unit: $\frac{\text{inch}}{\text{mm}}$



ESD1CAN24T2Q

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