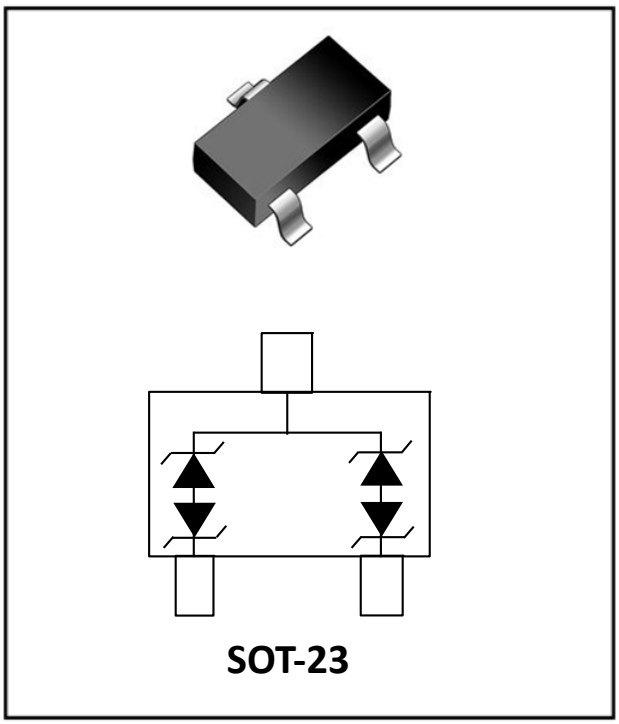
2- Line, Bi-directional, ESD protection diode



Features

- Transient protection for each line according to
  IEC61000-4-2(ESD): ±30kV contact, ±30kV air
  IEC61000-4-5: 6A(tp=8/20μs)
- Low leakage current
- Ultra low clamping voltage
- RoHS Compliant
- Part no. with suffix "Q" means AEC-Q101 qualified

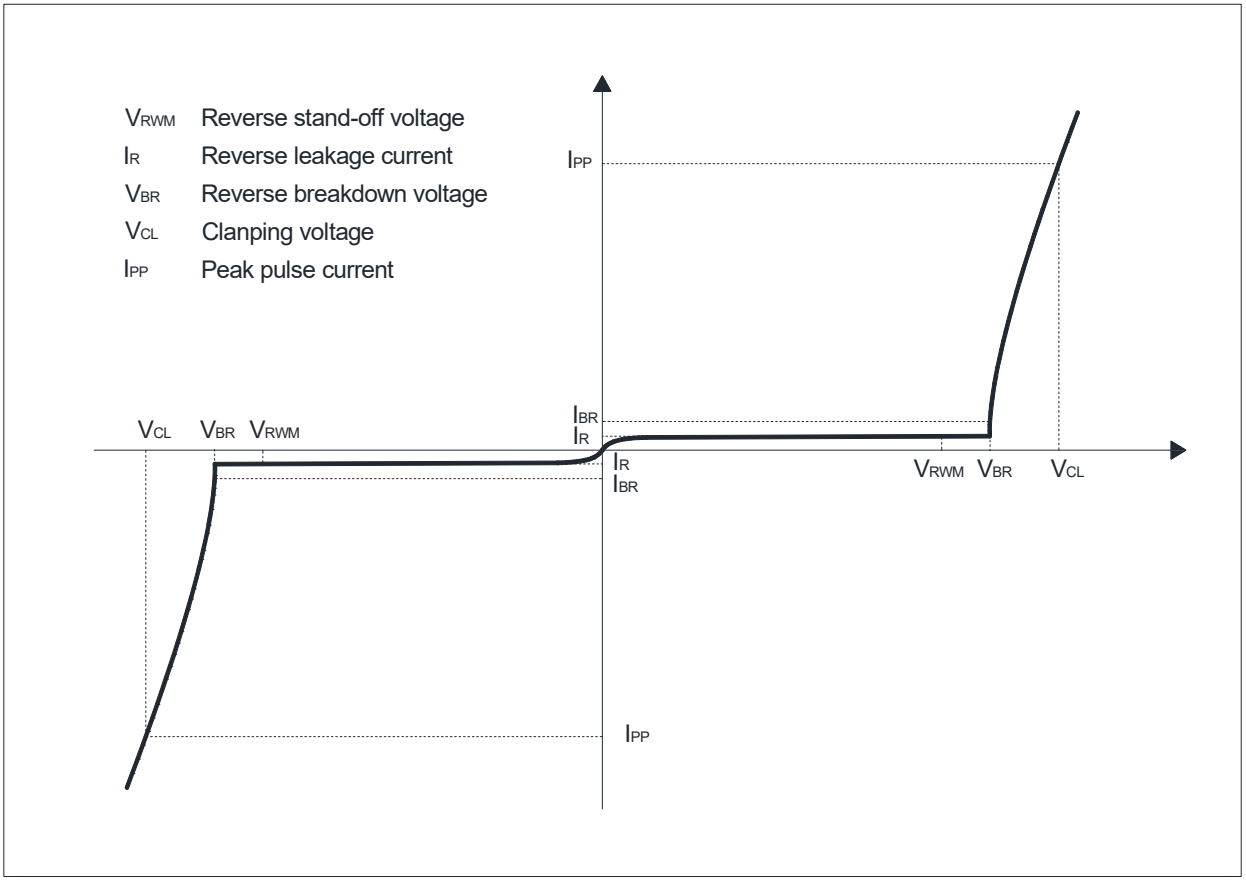
Applications

- Vehicle domain controller ,VCU electrostatic protection
- Electrostatic protection for automotive electronic multimedia interface
- CAN Bus protection
- Automotive applications

Mechanical Data

- Package: SOT-23
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Moisture Sensitivity: Level 1 per J-STD-020

■Definitions of electrical characteristics



■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power (t_p = 8/20μs)	P_{pk}	162	W
ESD according to IEC61000-4-2 air discharge	V_{ESD}	±30	KV
ESD according to IEC61000-4-2 contact discharge		±30	
Junction temperature	T_J	-55~150	℃
Storage temperature	T_{STG}	-55~150	℃

Notes:

CAUTION: Stresses above those listed in “Absolute Maximum Ratings” may cause permanent damage to the component. This is a stress only rating andoperation of the component at these or any other conditions above those indicated in the operational sections of this specification is not implied.

■Electrical Characteristics（T_J=25℃）

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse Standoff Voltage	V_{RWM}	V	I_R≤1μA			12
Reverse breakdown voltage	V_{BR}	V	I_{BR} = 1mA	13.5		16.7
Reverse leakage current	I_R	uA	V_{RWM} = 12V			0.5
Clamping voltage [1]	V_{CL}	V	I_{PP} = 1A, t_p = 8/20μs			19
		V	I_{PP} = 5A, t_p = 8/20μs			23
		V	I_{PP} = 6A, t_p = 8/20μs			27
Dynamic resistance [2]	R_{DYN}	Ω	TLP, tp=100ns, I/O to Ground		0.55	
Peak Pulse Current	I_{PP}	A	t_p = 8/20μs			6
Junction capacitance	C_J	pF	V_R = 0V, f = 1MHz		16	30

Notes:

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

(2). TLP parameter: Z0 = 50Ω, tp = 100ns, tr = 2ns, averaging window from 60ns to 80ns. RDYN is calculated from 4A to 16A

■Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD1202EBSQ	F2	Approximate 10	3000	30000	120000	7 reel

■ Characteristics (Typical)

Fig.1: 8/20μs Pulse Waveform

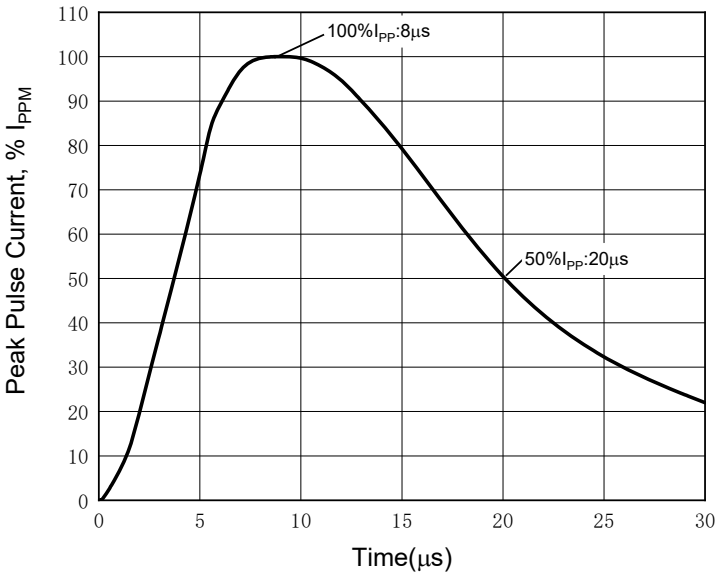


Fig.2:Peak Pulse Current vs Clamping Voltage

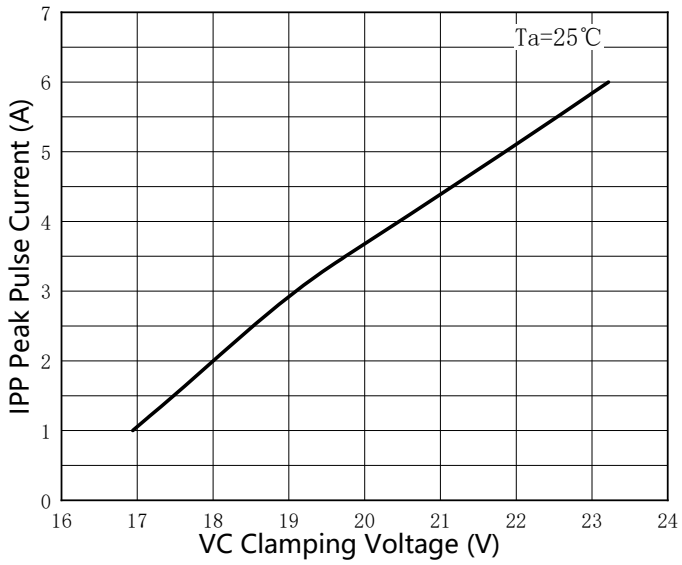


Fig.3: Power Derating Curve

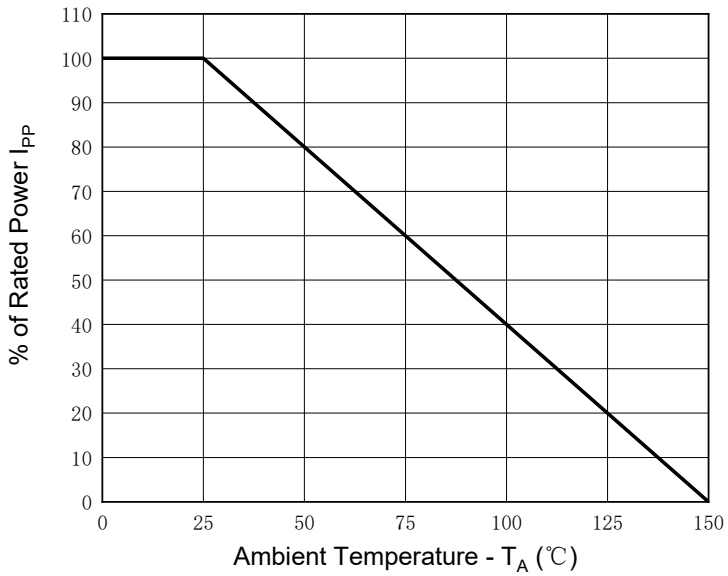


Fig.4:Capacitance Vs Bias

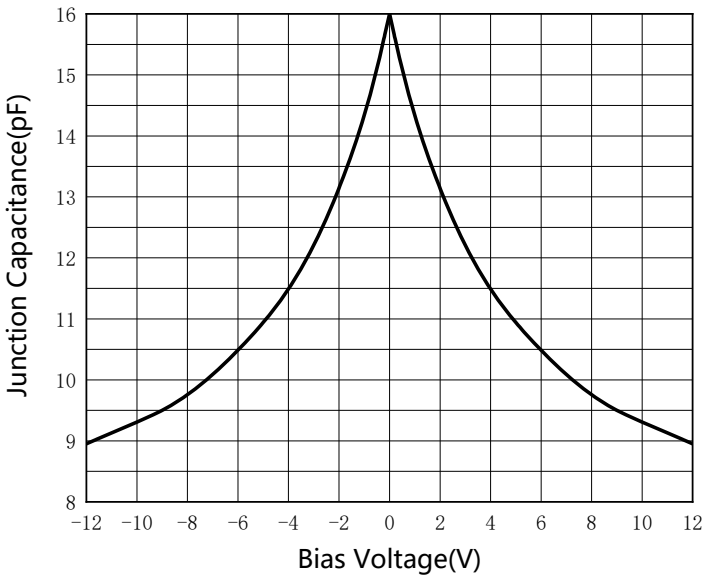
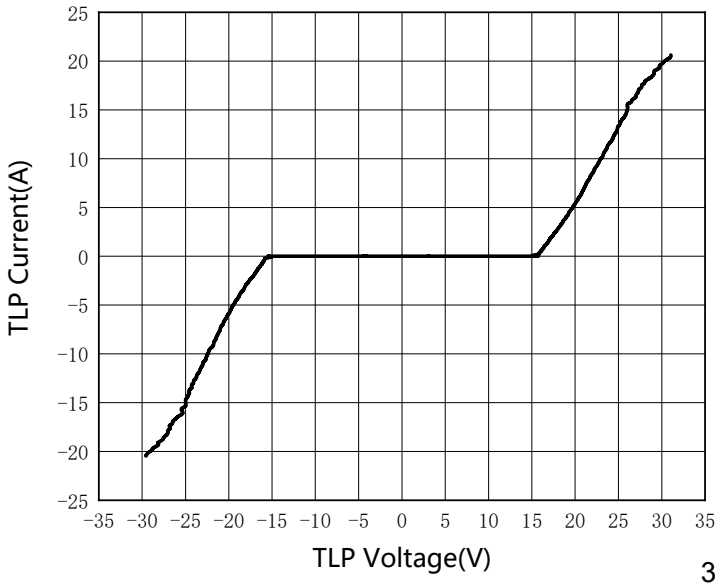
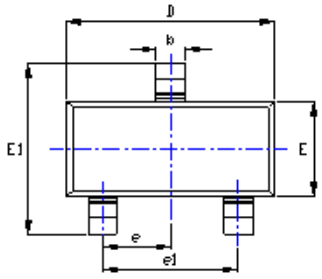


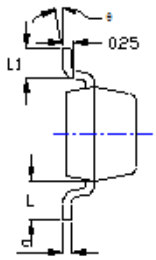
Fig.5:Transmission Line Pulsing(TLP) Plot



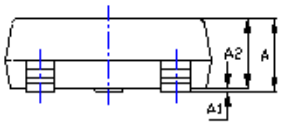
■ Outline Dimensions



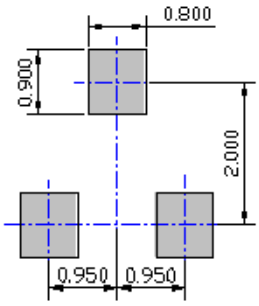
TOP VIEW



SIDE VIEW



SIDE VIEW



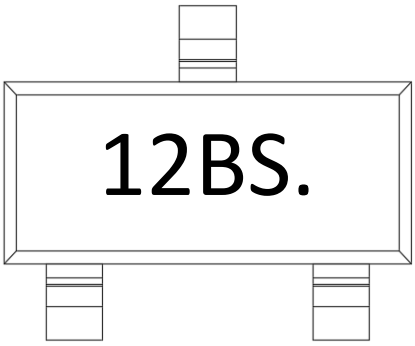
UNIT: mm

SUGGESTED SOLDER PAD LAYOUT

DIMENSIONS				
SYMBOL	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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