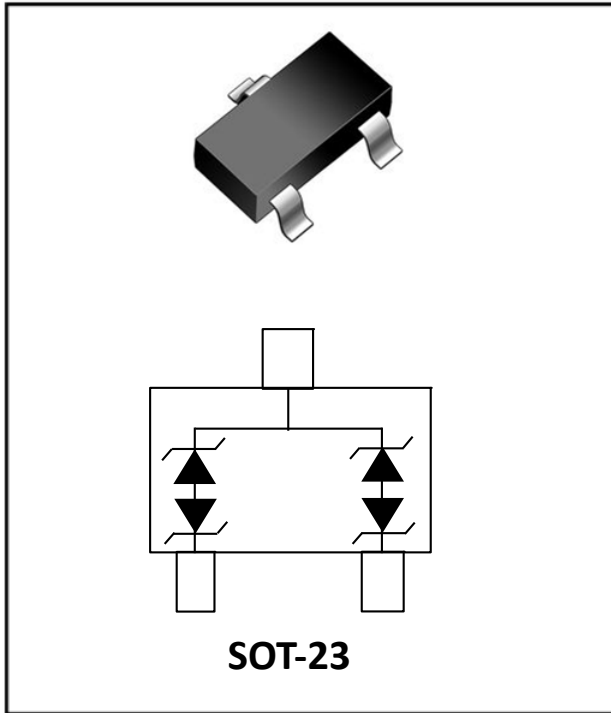


## 2- Line, Bi-directional, ESD protection diode



### Features

- Transient protection for each line according to IEC61000-4-2(ESD):  $\pm 30\text{kV}$  contact,  $\pm 30\text{kV}$  air IEC61000-4-5:2.5A( $t_p=8/20\mu\text{s}$ )
- Low leakage current
- Ultra low clamping voltage
- RoHS Compliant
- Part no. with suffix "Q" means AEC-Q101 qualified

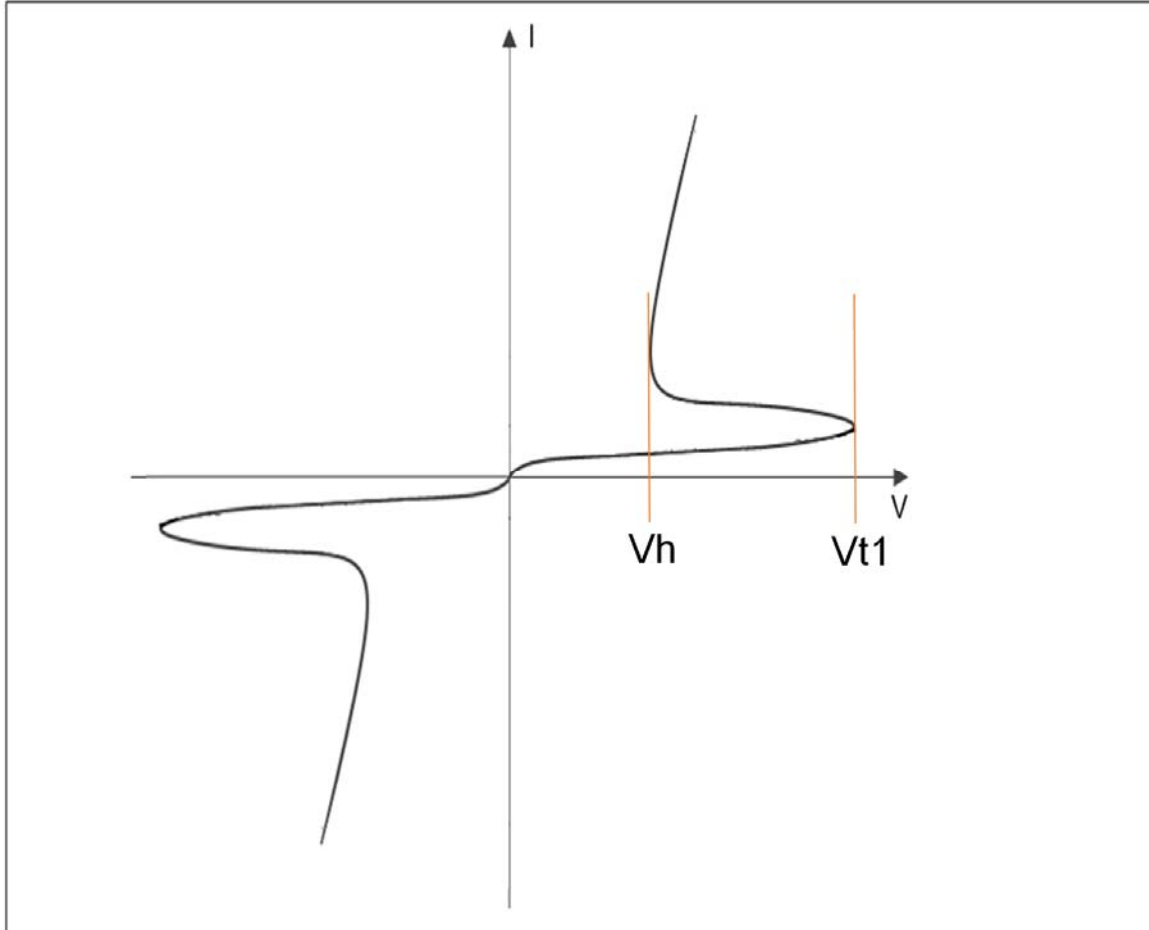
### Applications

- 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





# ESDELC24V02EBQ

## ■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
ESD according to IEC61000-4-2 air discharge	V <sub>ESD</sub>	±30	KV
ESD according to IEC61000-4-2 contact discharge		±30	
Junction temperature	T <sub>J</sub>	-55~150	°C
Storage temperature	T <sub>STG</sub>	-55~150	°C

Notes:

CAUTION: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the component. This is a stress only rating and operation 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<sub>J</sub>=25°C)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse Standoff Voltage	V <sub>RWM</sub>	V				24
Reverse breakdown voltage	V <sub>BR</sub>	V	I <sub>BR</sub> = 1mA	105		125
Reverse leakage current	I <sub>R</sub>	μA	V <sub>RWM</sub> = 24V			0.1
Clamping voltage <sup>1)</sup>	V <sub>CL</sub>	V	I <sub>PP</sub> =2.5A			27
Peak Pulse Current	I <sub>PP</sub>	A	t <sub>p</sub> = 8/20μs			2.5
Holding voltage <sup>2)</sup>	V <sub>h</sub>	V		28		
Trigger voltage <sup>2)</sup>	V <sub>t1</sub>	V		100	140	
Junction capacitance	C <sub>J</sub>	pF	V <sub>R</sub> = 0V, f = 1MHz		2	3.8

Notes:

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

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

## ■Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESDELC24V02EBQ	F2	Approximate 10	3000	30000	120000	7 reel



## ■ Characteristics (Typical)

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

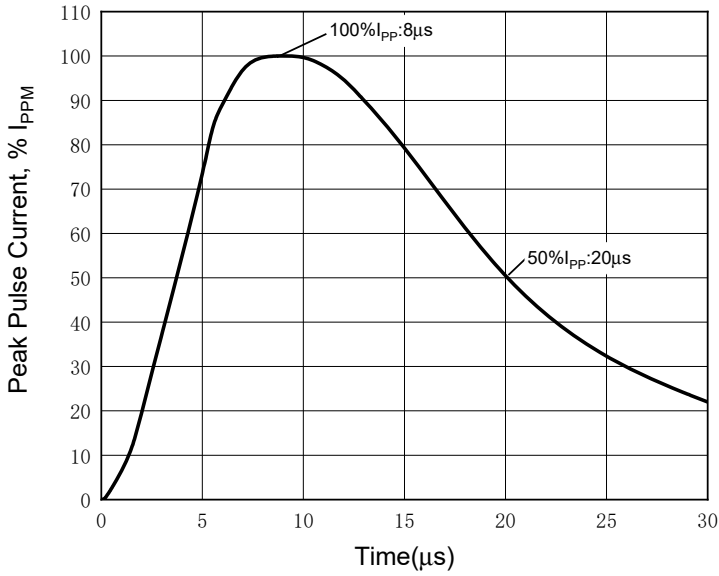


Fig.2: Capacitance vs. Bias

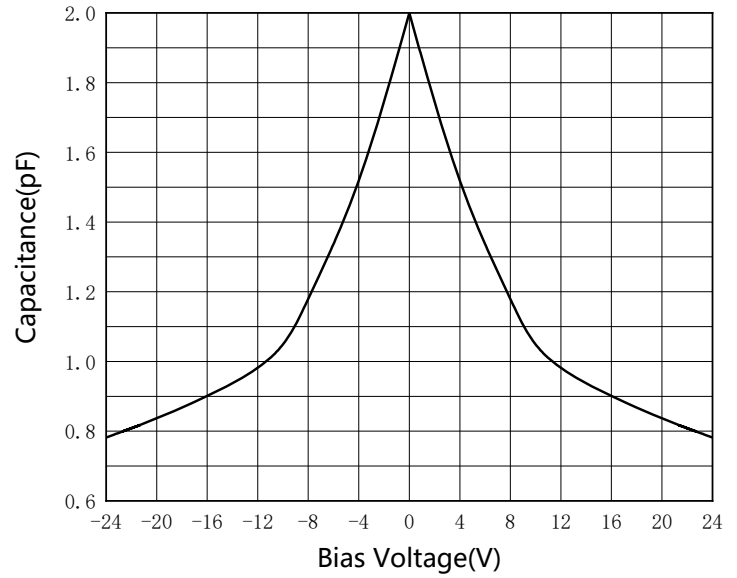


Fig.3: Power Derating Curve

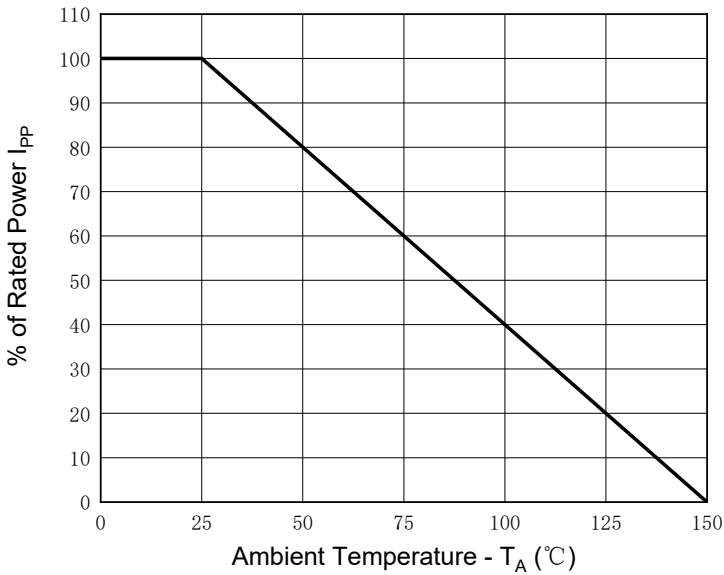
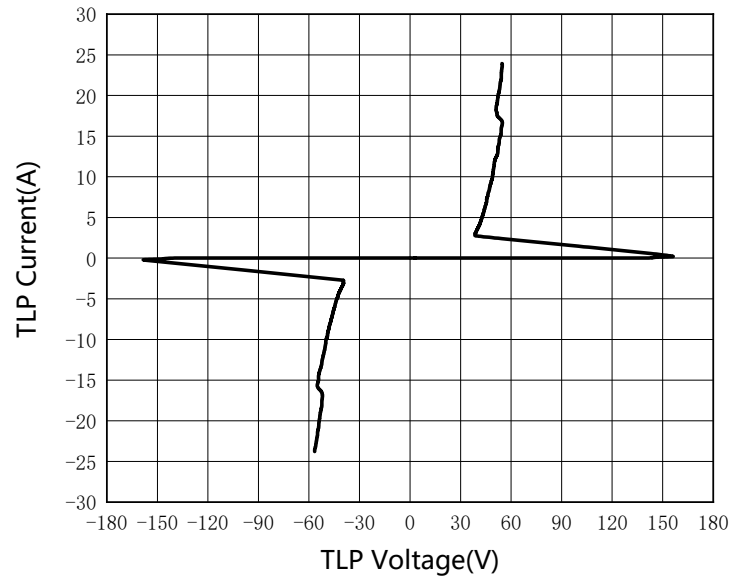


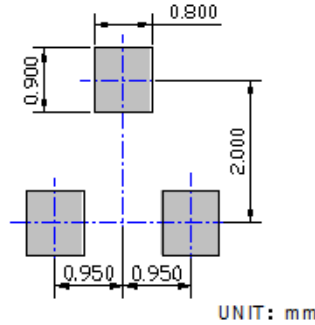
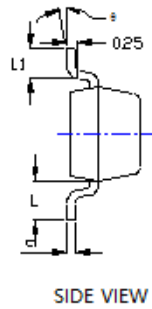
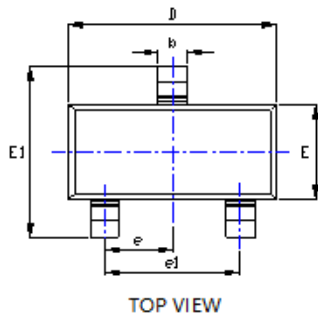
Fig.4: Transmission Line Pulsing (TLP) Plot





# ESDEL C24V02EBQ

## ■ Outline Dimensions

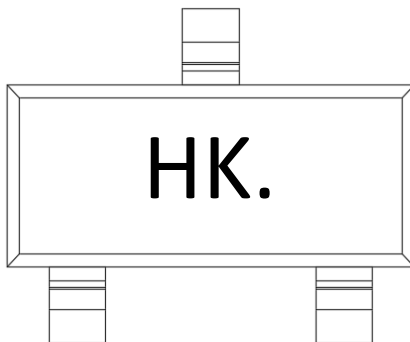


UNIT: mm

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



## Disclaimer

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