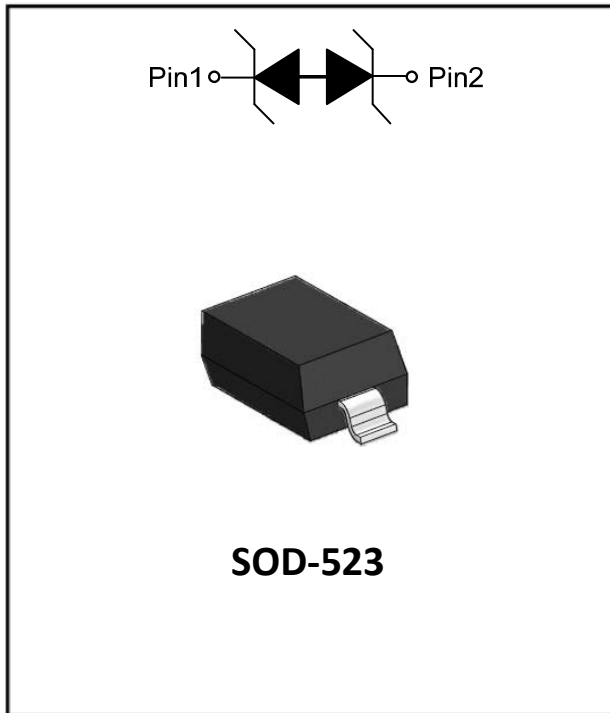


1- Line, Bi-directional, Transient Voltage Suppressor



Features

- Transient protection for each line according to IEC61000-4-2(ESD): $\pm 30\text{kV}$ contact, $\pm 30\text{kV}$ air IEC61000-4-5:24A($t_p=8/20\mu\text{s}$, ESD5V0D5BQ)
- Low leakage current
- Ultra low clamping voltage
- RoHS Compliant
- Part no. with suffix "Q" means AEC-Q101 qualified

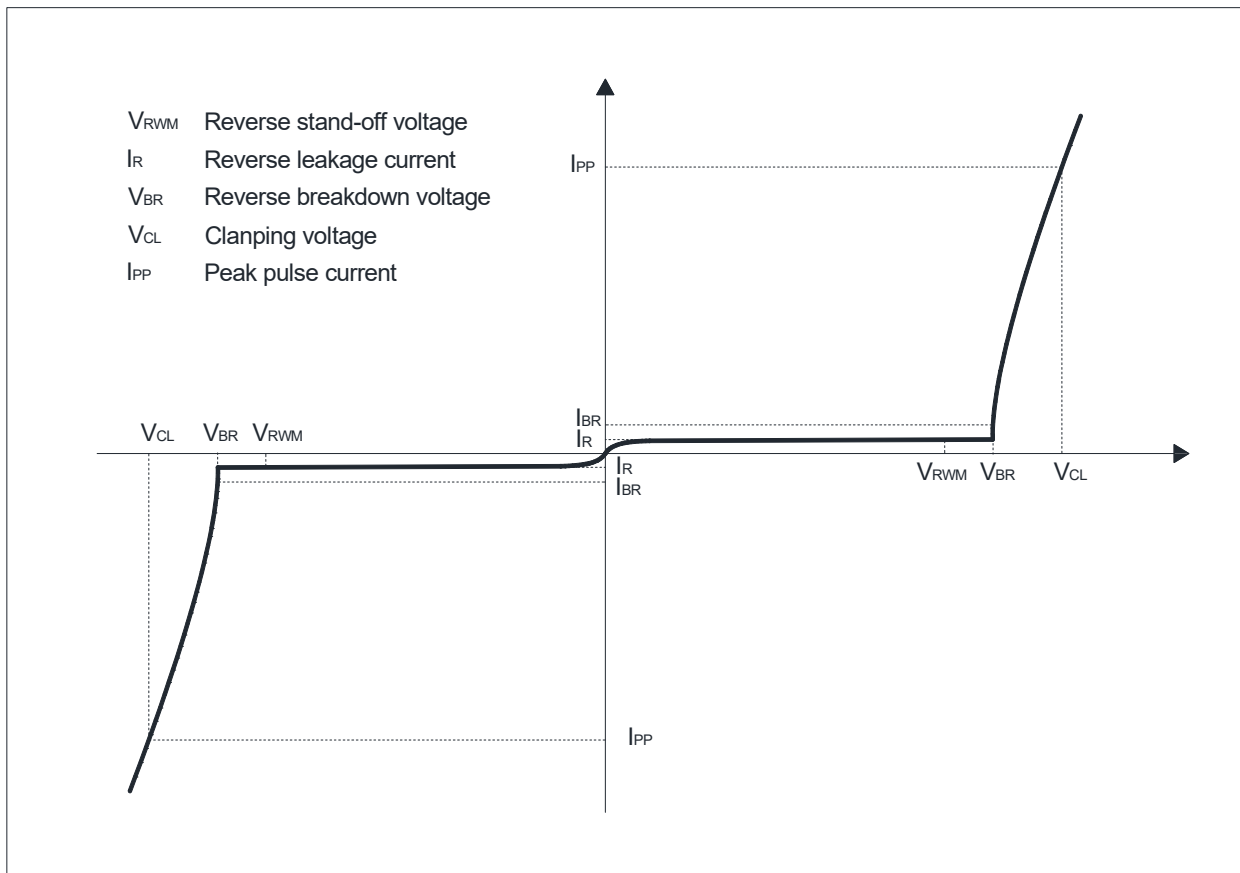
Applications

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

Mechanical Data

- Package: SOD-523
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Moisture Sensitivity: Level 1 per J-STD-020

■Definitions of electrical characteristics





ESD5V0D5BQ

■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	400	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	$^{\circ}C$
Operating temperature	T_{OP}	-55~150	$^{\circ}C$
Storage temperature	T_{STG}	-55~150	$^{\circ}C$

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.

■ESD5V0D5BQ Electrical Characteristics ($T_J=25^{\circ}C$)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse Standoff Voltage	V_{RWM}	V	$I_R \leq 1\mu A$			5.0
Reverse breakdown voltage	V_{BR}	V	$I_{BR} = 1mA$	6.0		7.8
Reverse leakage current	I_R	μA	$V_{RWM} = 5V$			1.0
Clamping voltage ¹⁾	V_{CL}	V	$I_{PP} = 1A, t_p = 8/20\mu s$			10
		V	$I_{PP} = 10A, t_p = 8/20\mu s$			14.5
		V	$I_{PP} = 24A, t_p = 8/20\mu s$			17
Dynamic resistance ²⁾	R_{DYN}	Ω	TLP, $t_p=100ns$, I/O to Ground		0.11	
Peak Pulse Current	I_{PP}	A	$t_p = 8/20\mu s$			24
Junction capacitance	C_J	pF	$V_R = 0V, f = 1MHz$		50	100

■Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD5V0D5BQ	F2	Approximate 2	8000	80000	320000	7 reel



■ Characteristics (Typical)

Fig.1: Non-Repetitive Peak Pulse Power vs. Pulse Time

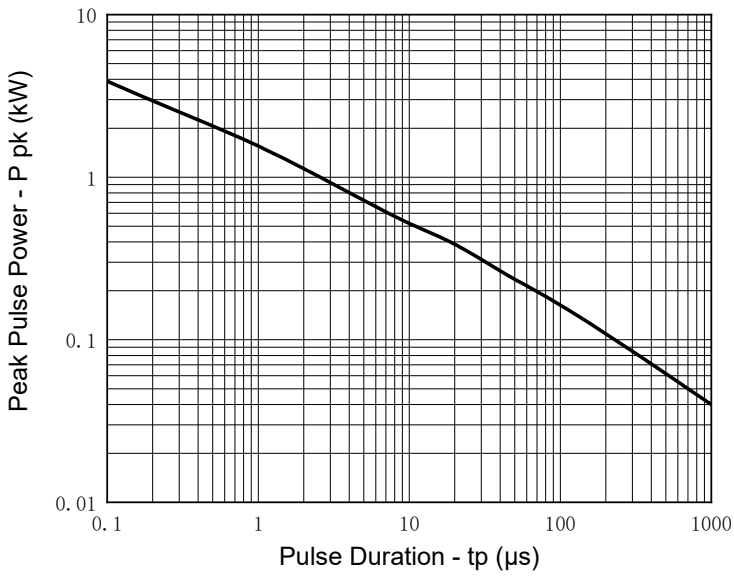


Fig.2: Capacitance vs. Bias

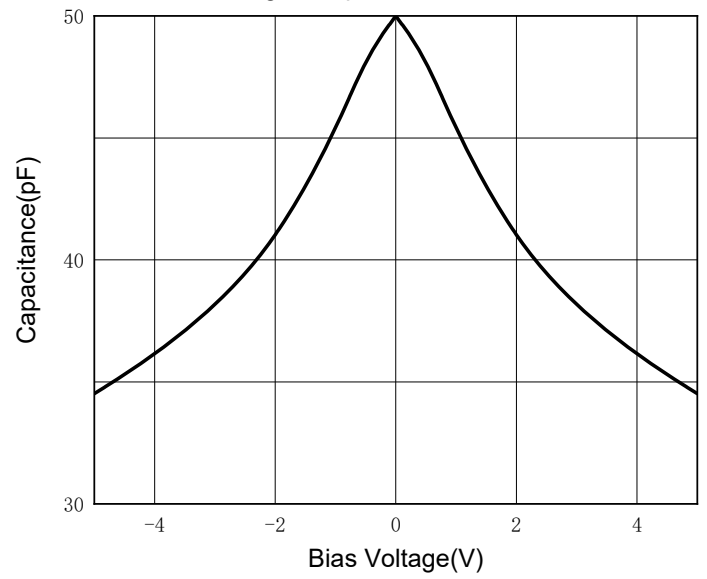


Fig.3: Power Derating Curve

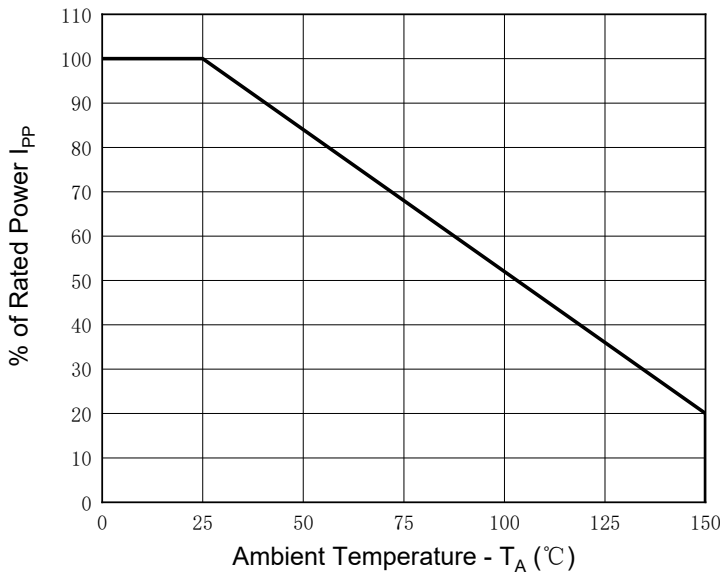


Fig.4: 8/20μs Pulse Waveform

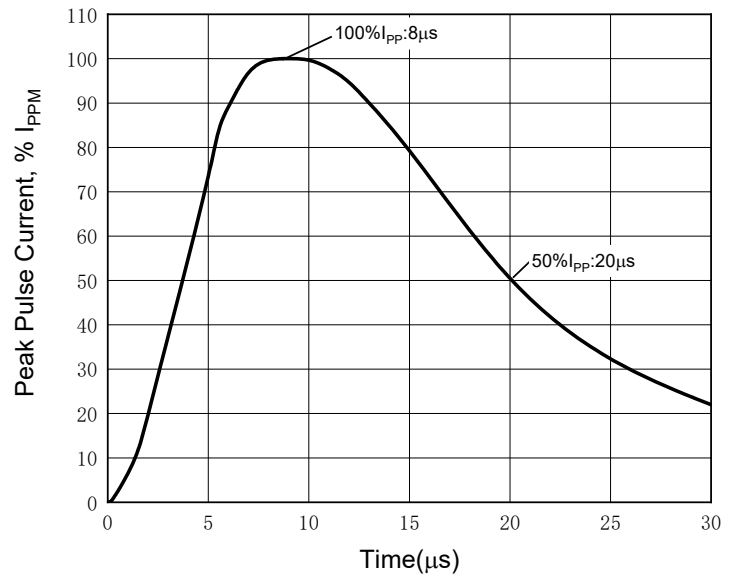
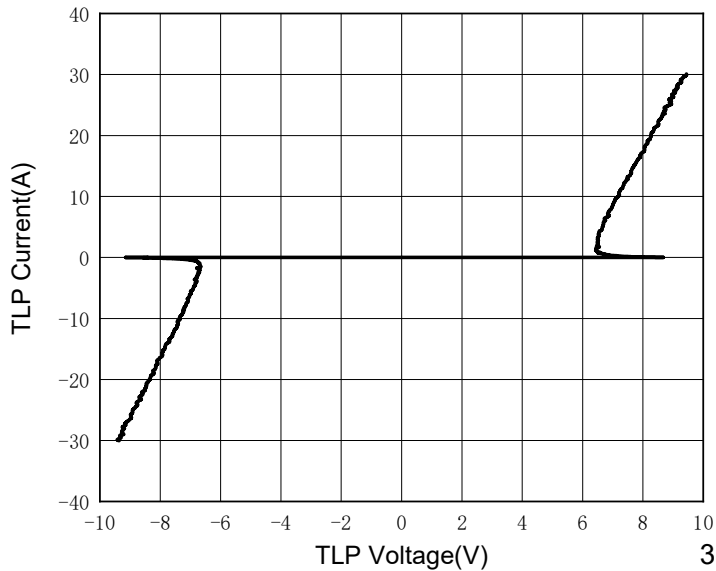


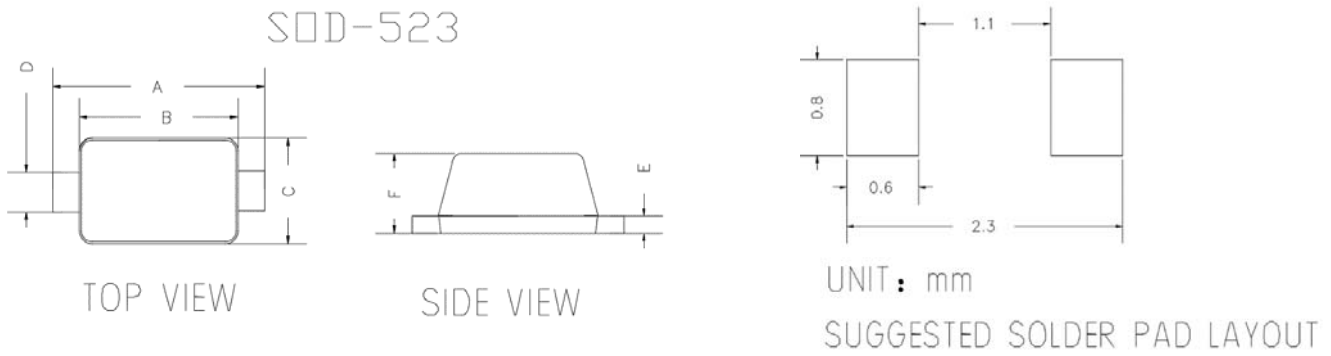
Fig.5: ESD5V0D3BQ Transmission Line Pulsing (TLP) Plot





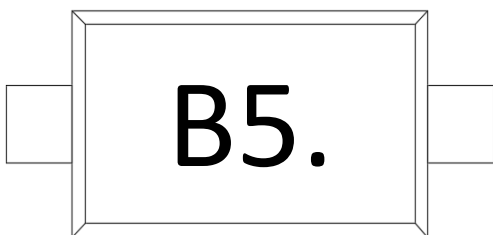
ESD5V0D5BQ

■ Outline Dimensions



DIMENSIONS				
DIM	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.059	0.067	1.500	1.700
B	0.043	0.051	1.100	1.300
C	0.028	0.035	0.700	0.900
D	0.010	0.014	0.250	0.350
E	0.002	0.008	0.050	0.200
F	0.020	0.028	0.500	0.700

■ Marking Information



Note:

1. All marking is at middle of the product body
2. All marking is in laser marking
3. B5 is Marking Code
4. Body color: Black



ESD5V0D5BQ

Disclaimer

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