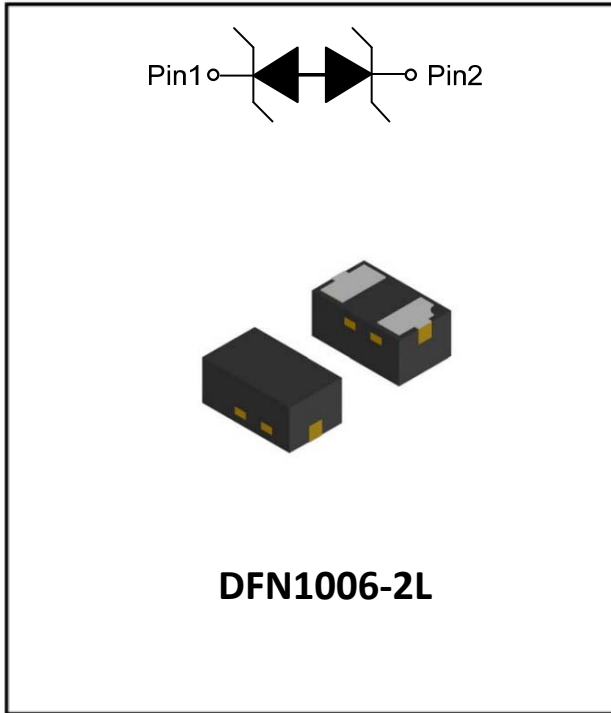


## 1- Line, Bi-directional, ESD protection diode



### Features

- Transient protection for each line according to IEC61000-4-2(ESD):  $\pm 30\text{kV}$  contact,  $\pm 30\text{kV}$  air IEC61000-4-5:11A( $t_p=8/20\mu\text{s}$ )
- Low leakage current
- Ultra low clamping voltage
- RoHS Compliant
- Part no. with suffix "Q" means AEC-Q101 qualified

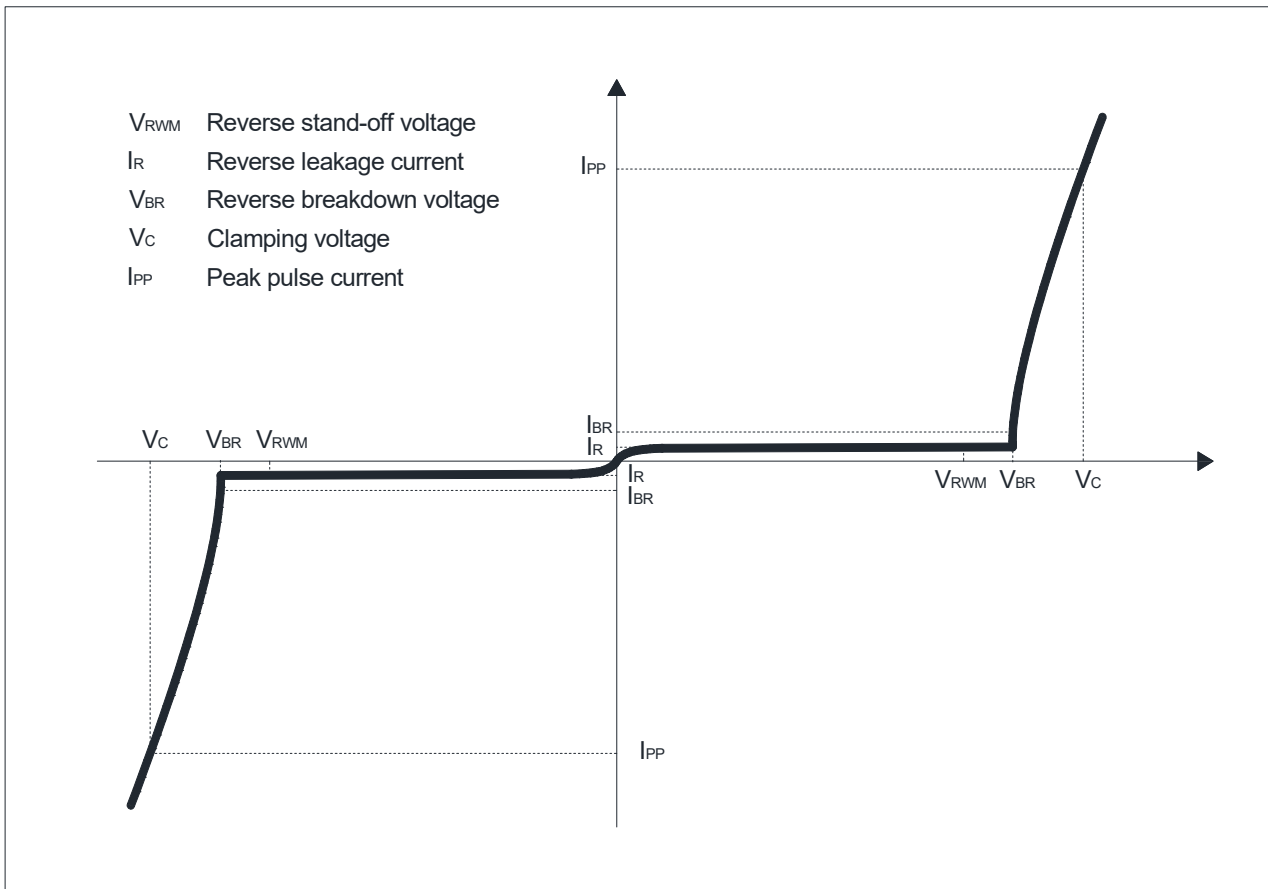
### Applications

- Automotive applications

### Mechanical Data

- Package: DFN1006-2L
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Moisture Sensitivity: Level 1 per J-STD-020

### ■ Definitions of electrical characteristics





# ESD5V0LBAQ

## ■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ( $t_p = 8/20\mu s$ )	$P_{pk}$	121	W
ESD according to IEC61000-4-2 air discharge	$V_{ESD}$	$\pm 30$	KV
ESD according to IEC61000-4-2 contact discharge		$\pm 30$	
Junction temperature	$T_J$	-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.

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

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse Standoff Voltage	$V_{RWM}$	V				5
Reverse breakdown voltage	$V_{BR}$	V	$I_{BR} = 1mA$	5.7		8
Reverse leakage current	$I_R$	$\mu A$	$V_{RWM} = 5V$			1
Clamping voltage <sup>1)</sup>	$V_C$	V	$I_{PP} = 11A, t_p = 8/20\mu s$		9	11
Dynamic resistance <sup>2)</sup>	$R_{DYN}$	$\Omega$	TLP, $t_p=100ns, I/O$ to Ground		0.24	
Peak Pulse Current	$I_{PP}$	A	$t_p = 8/20\mu s$			11
Junction capacitance	$C_J$	pF	$V_R = 0V, f = 1MHz$		28	40

Notes:

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

(2). TLP parameter:  $Z_0 = 50\Omega, t_p = 100ns, t_r = 2ns$ , averaging window from 60ns to 80ns.  $R_{DYN}$  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
ESD5V0LBAQ	F1	Approximate 0.9	10K	100K	400K	Tape&Reel



## ■ Characteristics (Typical)

Fig.1: Non-repetitive peak pulse power vs. Pulse time

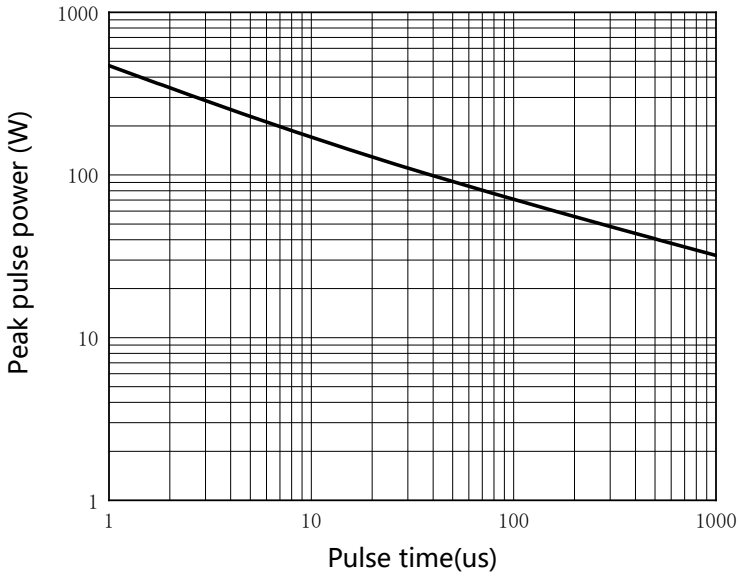


Fig.2: Capacitance vs. Bias

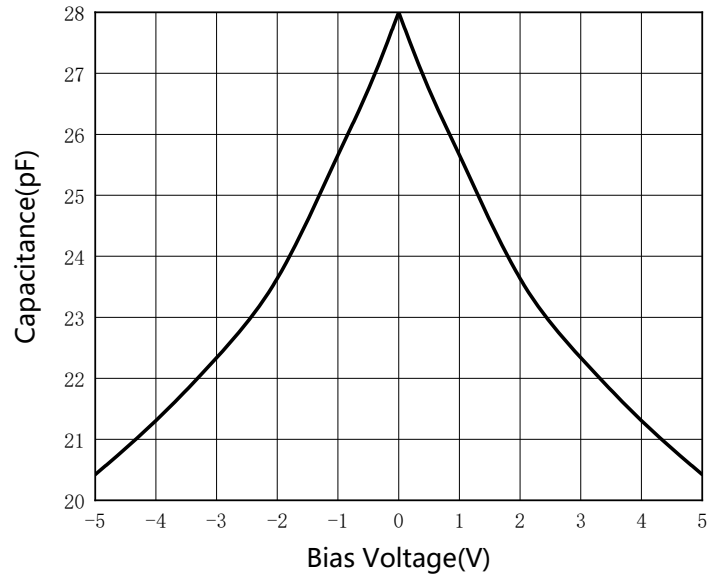


Fig.3: Power Derating Curve

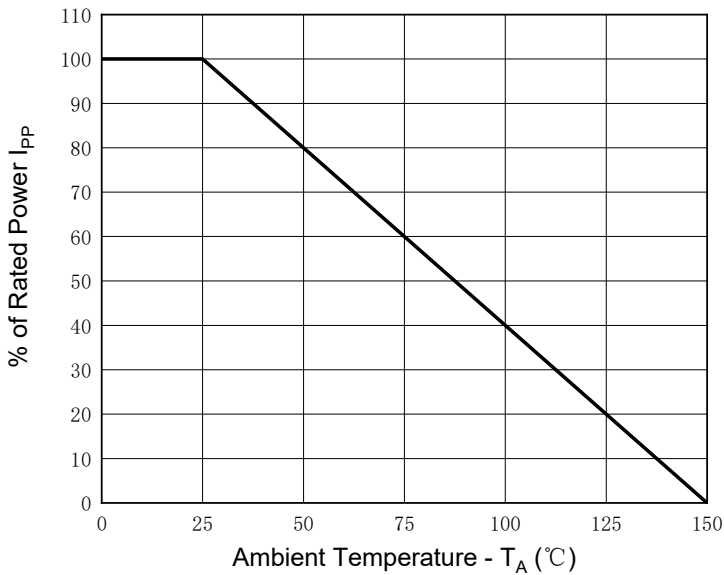


Fig.4: 8/20 $\mu$ s Pulse Waveform

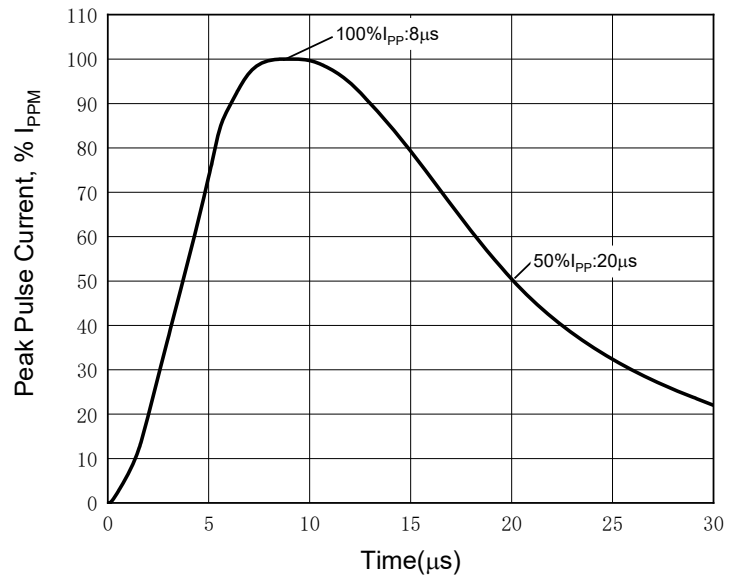


Fig.5: Peak Pulse Current vs Clamping Voltage

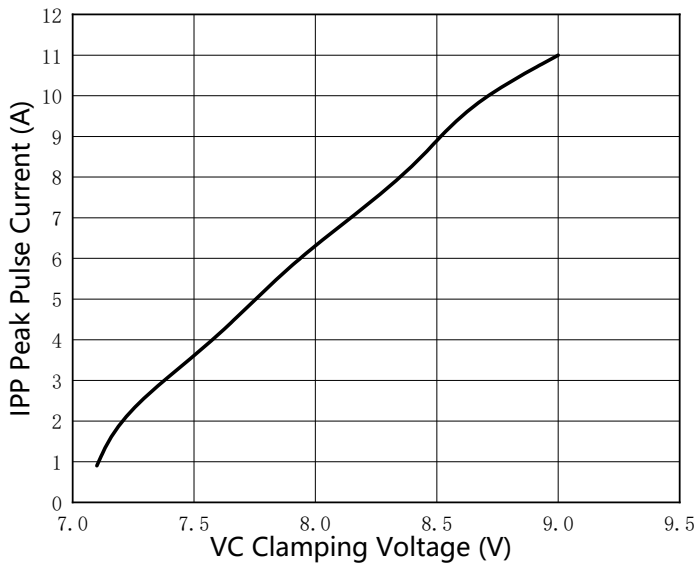
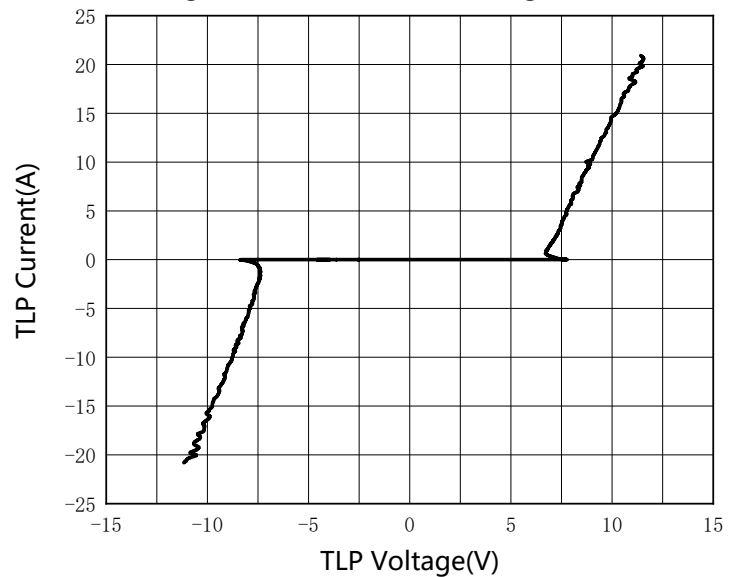


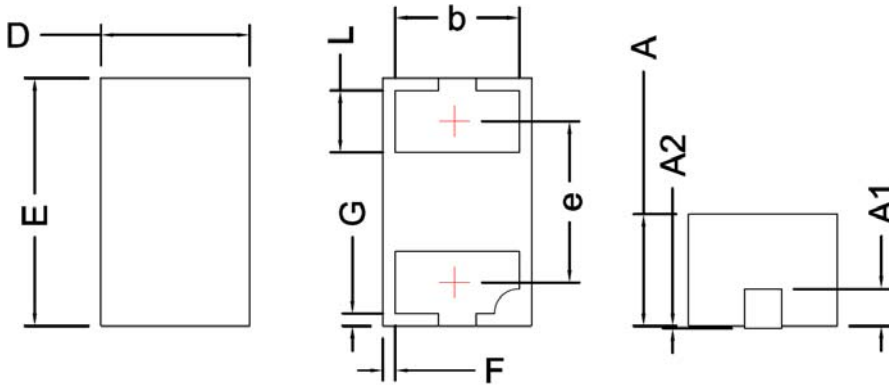
Fig.6: Transmission Line Pulsing (TLP) Plot



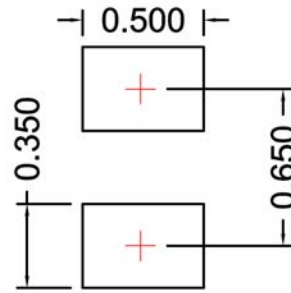


# ESD5V0LBAQ

## ■ Outline Dimensions

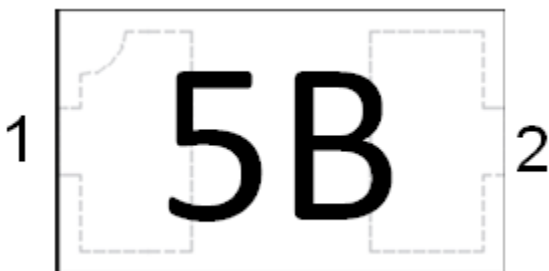


SYMBOL	MILLIMETER		
	MIN	NOM	MAX
D	0.50	0.60	0.70
E	0.90	1.00	1.10
A	0.35	0.45	0.55
A1	0.15 BSC		
A2			0.10
F	0.005		
G	0.005		
L	0.15	0.25	0.35
b	0.41	0.50	0.59
e	0.65 BSC		



Unit: mm

## ■ Marking Information



Note:

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



## ESD5V0LBAQ

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