

# ESD0301BU

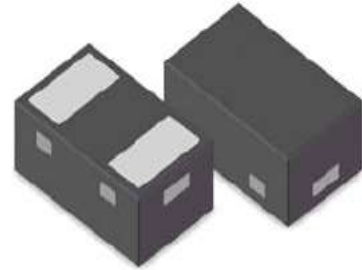
## ESD0301BU Ultra Low Capacitance ESD Protection Diode

### General description

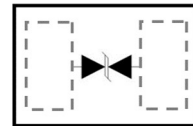
Silicon Protection Diode in a DFN1006 Package.

### FEATURES

- 100 Watt peak pulse power (t/p=8/20)
- Capacitance typ. 0.25 pF
- Bidirectional configurations
- Low Leakage Current
- Low clamping voltage
- IEC 61000-4-2 ±20Kv Contact ±20Kv air.
- RoHS Compliant
- Green EMC



DFN1006 Package



### Absolute Maximum Ratings (T<sub>A</sub> = 25°C unless otherwise noted)

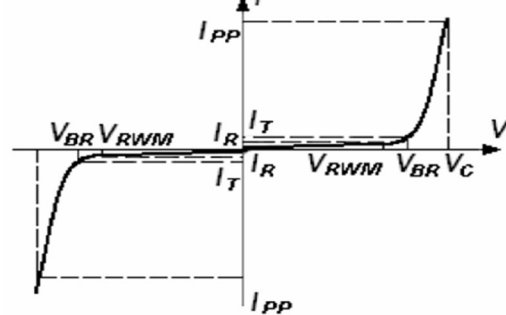
| Symbol           | Parameter                                       | Value       | Units |
|------------------|---|-------------|-------|
| P <sub>pp</sub>  | Peak pulse power                                | 100         | W     |
| T <sub>stg</sub> | Storage Temperature Range                       | -55 to +150 | °C    |
| T <sub>J</sub>   | Junction Temperature                            | -55 to +125 | °C    |
| ESD              | IEC61000-4-2 Air Discharge<br>Contact Discharge | ±20<br>±20  | KV    |

### Device Marking:

| Device Type | Marking | Shipping    |
|-------------|---------|-------------|
| ESD0301BU   | 3BU     | 10,000/Reel |

### Electrical Parameter

| Symbol           | Parameter  |
|------------------|--|
| I <sub>pp</sub>  | Maximum Reverse Peak Pulse Current                 |
| V <sub>C</sub>   | Clamping Voltage @ I <sub>pp</sub>                 |
| V <sub>RWM</sub> | Working Peak Reverse Voltage                       |
| I <sub>R</sub>   | Maximum Reverse Leakage Current @ V <sub>RWM</sub> |
| I <sub>T</sub>   | Test Current                                       |
| V <sub>BR</sub>  | Breakdown Voltage @ I <sub>T</sub>                 |



### Electrical Characteristics (T<sub>A</sub> = 25°C unless otherwise noted)

| Symbol           | Parameter                 | Test Condition               | Min | Typ  | Max | Unit  |
|------------------|---------------------------|------------------------------|-----|------|-----|-------|
| V <sub>BR</sub>  | Reverse Breakdown Voltage | I <sub>T</sub> =1mA          | 4.2 |      | --  | Volts |
| V <sub>RWM</sub> | Reverse Stand-off Voltage |                              | --  | --   | 3.3 | Volts |
| I <sub>R</sub>   | Reverse Leakage Current   | V <sub>R</sub> =3.3V         | --  | --   | 100 | nA    |
| V <sub>C</sub>   | Clamping Voltage          | I <sub>pp</sub> =1A (8/20uS) | --  | --   | 12  | Volts |
|                  |                           | I <sub>pp</sub> =4A (8/20uS) | --  | --   | 25  | Volts |
| C <sub>J</sub>   | Junction Capacitance      | V <sub>R</sub> =0V, f= 1MHz  | --  | 0.25 | 0.4 | pF    |

## ELECTRICAL CHARACTERISTICS CURVE

Fig 1 Power Derating Curve

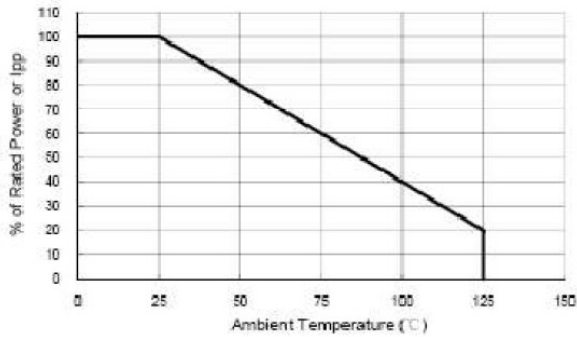


Fig 2 Clamping Voltage vs Peak Pulse Current

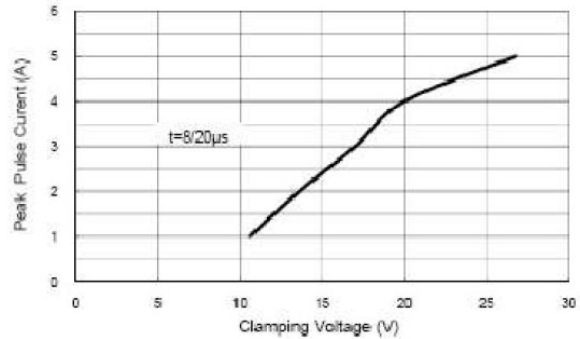


Fig 3 Voltage Sweeping

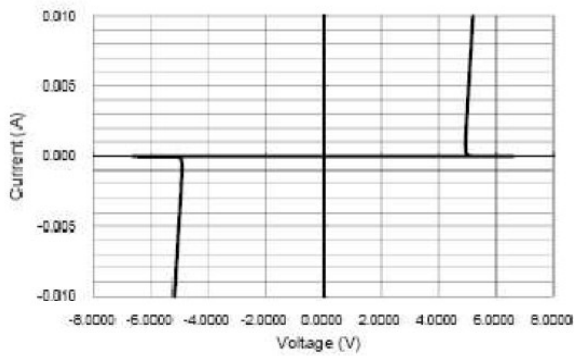


Fig 4 Voltage vs Capacitance

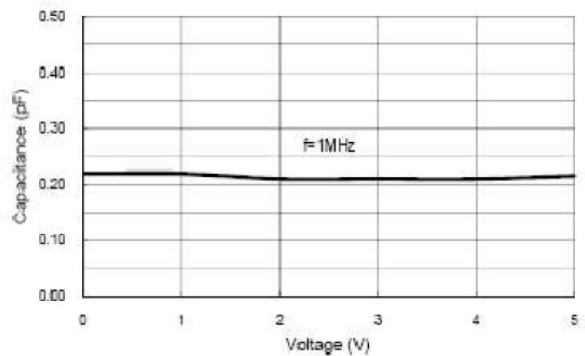


Fig 5 ESD Clamping  
(+8kV Contact per IEC 61000-4-2)

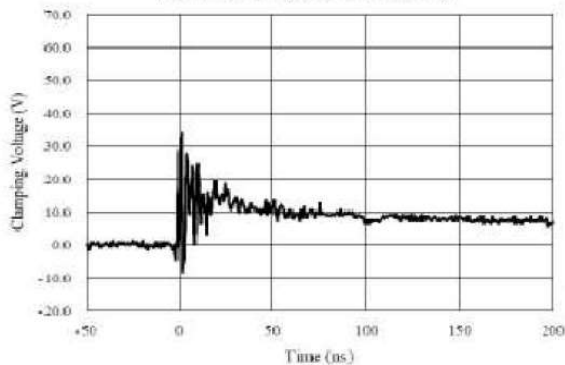
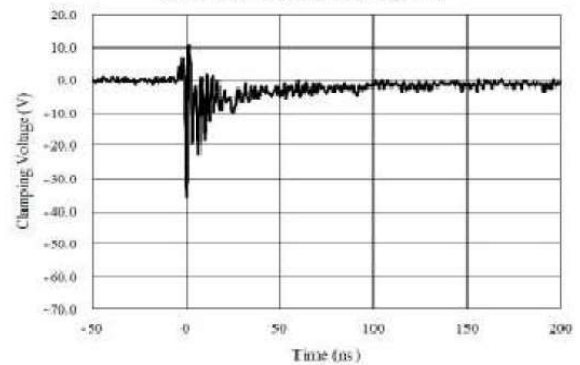
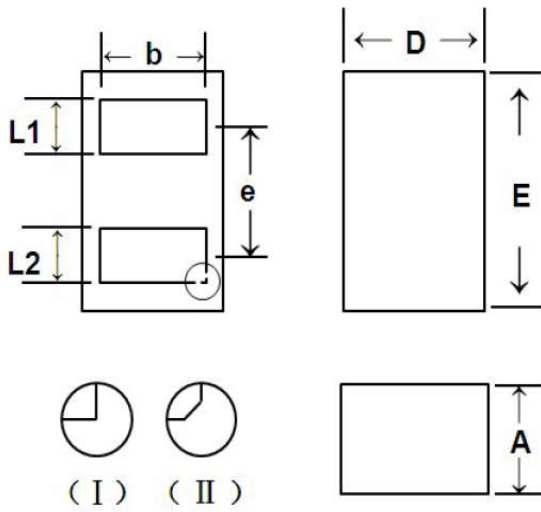


Fig 6 ESD Clamping  
(-8kV Contact per IEC 61000-4-2)

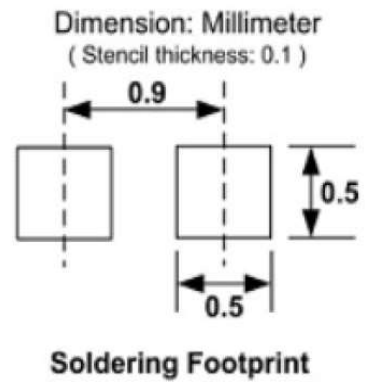


## DFN1006 PACKAGE OUTLINE DIMENSIONS



**NOTE: ALL DIMENSIONS IN MM**

|    | MIN  | NOM     | MAX  |
|----|------|---------|------|
| D  | 0.55 | 0.60    | 0.65 |
| E  | 0.95 | 1.00    | 1.05 |
| L1 | 0.20 | 0.25    | 0.30 |
| L2 | 0.20 | 0.25    | 0.30 |
| A  | 0.45 | 0.50    | 0.55 |
| b  | 0.45 | 0.50    | 0.55 |
| e  |      | 0.64BSC |      |



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