

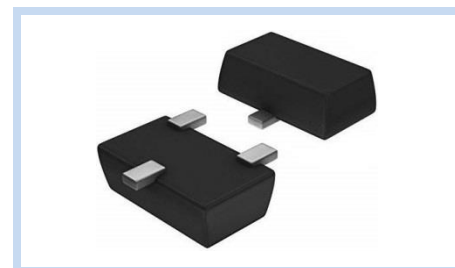
# ESD Suppressor AEC-Q101 5V 2-Unidirectional SOT-523F

ME52U15S523FTA

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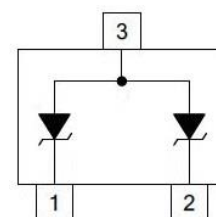
## FEATURE

- IEC 61000-4-2 ESD:  $\pm 18\text{KV}$  (Air)  $\pm 12\text{KV}$  (Contact)
- IEC 61000-4-4 EFT: 40A (5/50ns)
- IEC 61000-4-5 Lightning: 4A (8/20 $\mu\text{s}$ )
- ESD Protection for two Unidirectional Channels
- Low Leakage Current, Maximum 1 $\mu\text{A}$  at Rated Voltage
- AEC-Q101 Qualified



## APPLICATION

- High Definition Multi-Media Interface Protection
- Monitors, Flat Panel Displays, and Notebook computers
- Video Line Protection & Base Stations
- Usb 3.0 Data Line Protection
- Control Signal Lines Protection



## MAXIMUM RATINGS AND CHARACTERISTICS

| Parameter                             | Symbol         | Value    | Unit               |
|---------------------------------------|----------------|----------|--------------------|
| ESD Voltage (Contact discharge)       | $V_{ESD}$      | 12       | KV                 |
| ESD Voltage (Air discharge)           |                | 18       |                    |
| Operating & Storage Temperature Range | $T_J, T_{STG}$ | -55~+150 | $^{\circ}\text{C}$ |

## ELECTRICAL CHARACTERISTICS

| Parameter                      | Condition   | Symbol    | Min. | Typ. | Max. | Unit          |
|--------------------------------|---|-----------|------|------|------|---------------|
| Reverse Stand-Off Voltage      | --  | $V_{RWM}$ | --   | --   | 5    | V             |
| Reverse Breakdown Voltage      | $V_{BR}=1\text{mA}$ , Between any I/O pins to GND               | $V_{BR}$  | 5.8  | --   | 10.2 | V             |
| Reverse Leakage Current        | $V_R=5\text{V}$ , Any I/O pin to GND                            | $I_R$     | --   | --   | 1    | $\mu\text{A}$ |
| Dynamic Resistance             | $t_p=100\text{ns}$  | $R_{DYN}$ | --   | 0.25 | --   | $\Omega$      |
| Clamping Voltage               | $I_{PP}=1\text{A}$ , $t_p=8/20\mu\text{s}$ , Any I/O pin to GND | $V_C$     | --   | 9    | 12   | V             |
|                                | $I_{PP}=4\text{A}$ , $t_p=8/20\mu\text{s}$ , Any I/O pin to GND |           | --   | --   | 15   |               |
| Clamping Voltage TLP           | $I_{PP}=4\text{A}$ , $t_p=100\text{ns}$ , Any I/O pin to GND    | $V_C$     | --   | 9.6  | --   | V             |
|                                | $I_{PP}=8\text{A}$ , $t_p=100\text{ns}$ , Any I/O pin to GND    |           | --   | 10.6 | --   |               |
| Off State Junction Capacitance | $V_{DC}=0$ , Bias, $f=1\text{MHz}$ , Between Any I/O pin to GND | $C_J$     | --   | 0.6  | 0.8  | pF            |

Note:

1. Testing using Transmission Line Pulse (TLP) conditions:  $Z_0=50\Omega$ ,  $t_p=100\text{ns}$
2.  $T_A=25^{\circ}\text{C}$  unless otherwise specified

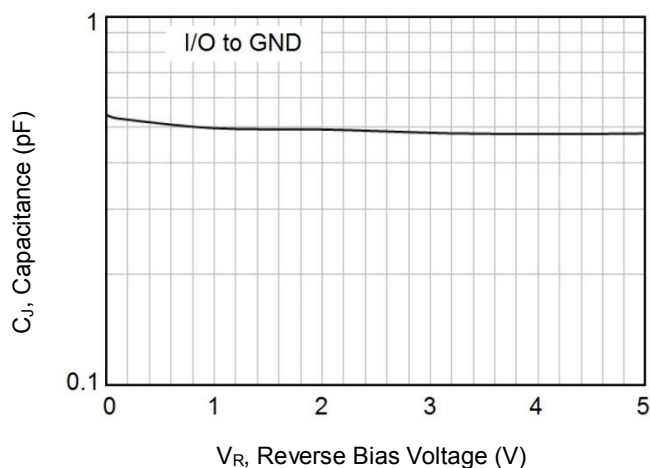
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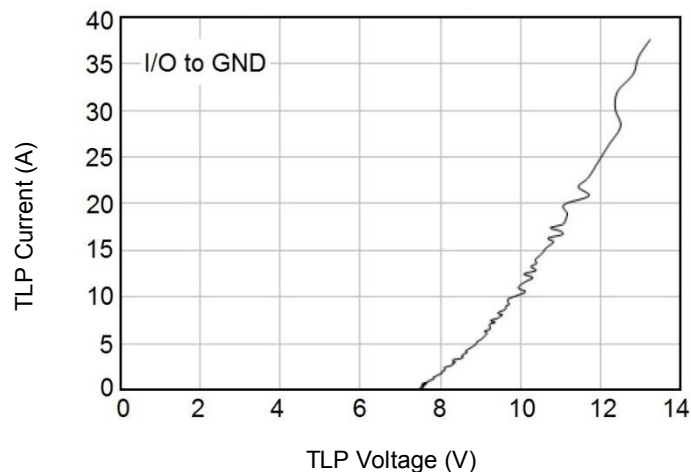
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## CHARACTERISTIC CURVES

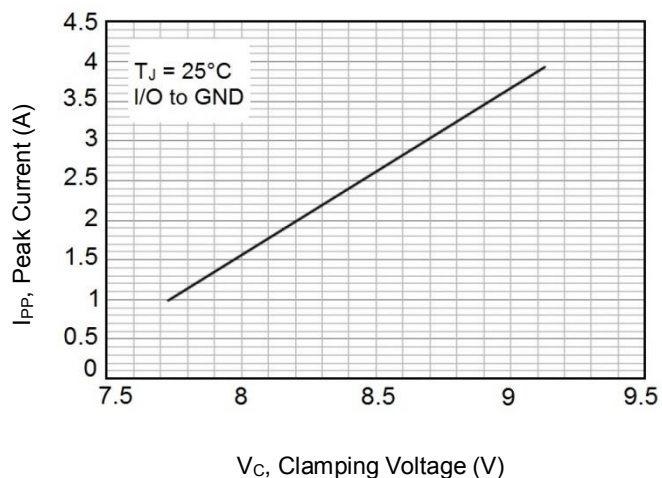
### Typical Junction Capacitance



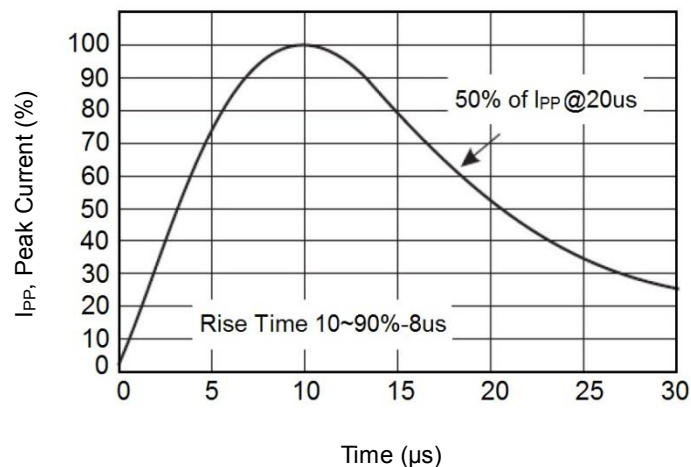
### Transmission Line Pulsing



### Typical Peak Clamping Voltage



### Pulse Waveform



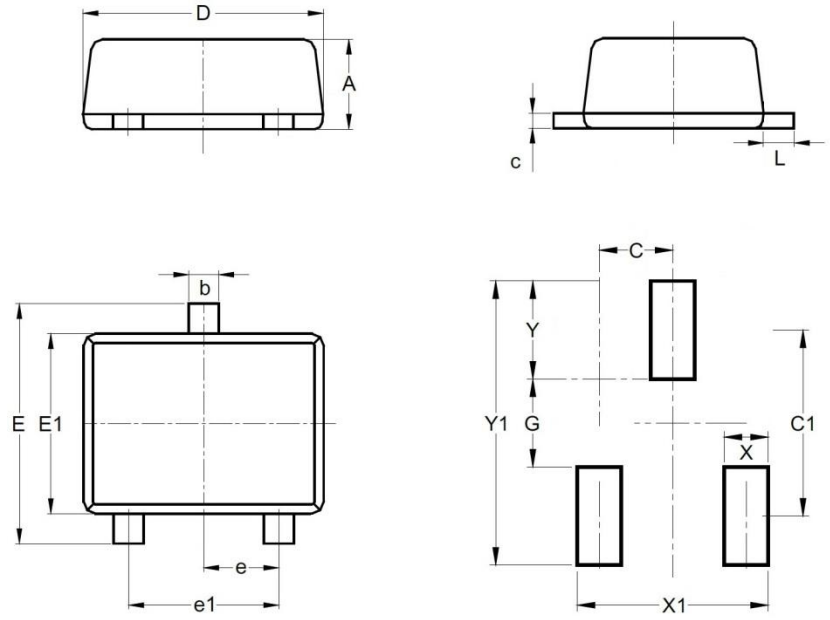
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## DIMENSIONS AND RECOMMENDED LAND PATTERN

| Item | Min (mm) | Max (mm) |
|------|----------|----------|
| A    | 0.50     | 0.60     |
| b    | 0.23     | 0.33     |
| c    | 0.07     | 0.17     |
| D    | 1.50     | 1.70     |
| e    | 0.45     | 0.55     |
| e1   | 0.90     | 1.10     |
| E    | 1.50     | 1.70     |
| E1   | 1.10     | 1.30     |
| L    | 0.20     | 0.20     |
| C    | 0.50     | 0.50     |
| C1   | 1.45     | 1.45     |
| G    | 0.90     | 0.90     |
| X    | 0.40     | 0.40     |
| X1   | 1.05     | 1.05     |
| Y    | 0.55     | 0.55     |
| Y1   | 2.00     | 2.00     |



\*Specifications subject to change without notice.