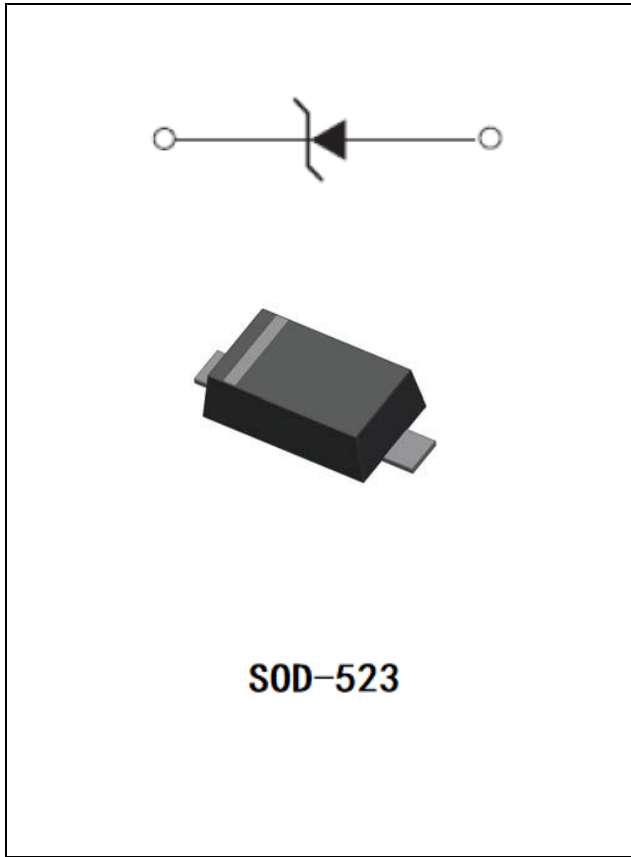


## 1- Line, Bi-directional, Transient Voltage Suppressor



### Features

- Ultra small package
- Stand-off voltage: 5V Max
- Transient protection for each line according to IEC61000-4-2(ESD):  $\pm 30\text{kV}$  (contact)  
IEC61000-4-5(surge): 18A (8/20 $\mu\text{s}$ )
- Ultra-low capacitance:  $C_J = 150\text{ pF}$  typ
- Low leakage current
- Low clamping voltage
- RoHS Compliant

### Applications

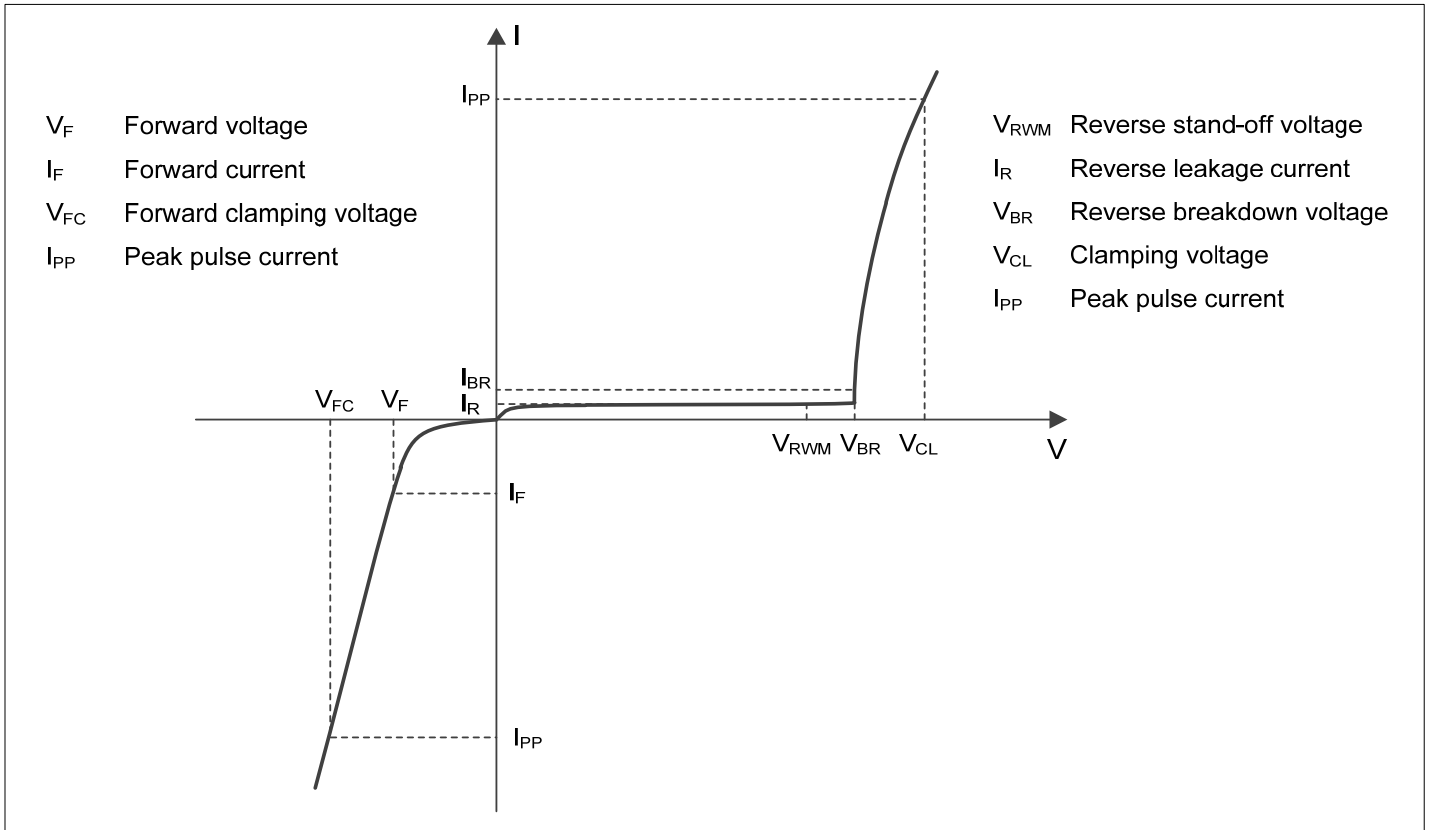
- Cellular handsets
- Tablets
- Laptops
- Network communication devices
- Other portable devices

### Mechanical Characteristics

- Package: SOD-523-2L
- Case Material: "Green" Molding Compound.
- Marking Information: See Below



### ■Definitions of electrical characteristics





## ESD5V0D5A

### ■Absolute Maximum Ratings (Ta=25°C unless otherwise specified)

| PARAMETER                                       | SYMBOL    | Rating   | UNIT |
|-------------------------------------------------|-----------|----------|------|
| Peak pulse power ( $t_p = 8/20\mu s$ )          | $P_{pk}$  | 240      | W    |
| Peak pulse current ( $t_p = 8/20\mu s$ )        | $I_{PP}$  | 20       | A    |
| ESD according to IEC61000-4-2 air discharge     | $V_{ESD}$ | $\pm 30$ | KV   |
| ESD according to IEC61000-4-2 contact discharge |           | $\pm 30$ | KV   |
| Junction temperature                            | $T_J$     | 125      | °C   |
| Storage temperature                             | $T_{STG}$ | -55~150  | °C   |

### ■Electrical Characteristics (Ta=25°C Unless otherwise specified)

| PARAMETER                       | Symbol    | UNIT | Conditions                      | Min | Typ | Max |
|---------------------------------|-----------|------|---------------------------------|-----|-----|-----|
| Reverse maximum working voltage | $V_{RWM}$ | V    |                                 |     |     | 5   |
| Reverse breakdown voltage       | $V_{BR}$  | V    | $I_{BR} = 1mA$                  | 6   |     |     |
| Reverse leakage current         | $I_R$     | nA   | $V_{RWM} = 5V$                  |     |     | 500 |
| Clamping voltage <sup>3)</sup>  | $V_{CL}$  | V    | $I_{PP} = 5A, t_p = 8/20\mu s$  |     |     | 9   |
|                                 |           | V    | $I_{PP} = 20A, t_p = 8/20\mu s$ |     |     | 12  |
| Junction capacitance            | $C_J$     | pF   | $V_R = 0V, f = 1MHz$            |     | 150 |     |

(1). 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.

(2). Contact discharge mode, according to IEC61000-4-2.

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

### ■Ordering Information (Example)

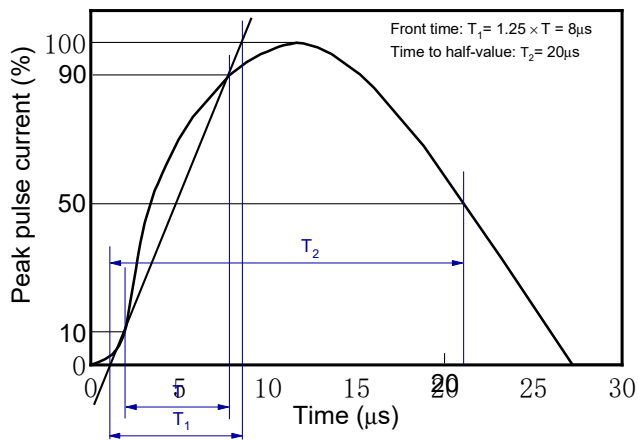
| PREFERRED P/N | UNIT WEIGHT(mg) | MINIMUM PACKAGE(pcs) | INNER BOX QUANTITY(pcs) | OUTER CARTON QUANTITY(pcs) | DELIVERY MODE |
|---------------|-----------------|----------------------|-------------------------|----------------------------|---------------|
| ESD5V0D5A     | Approximate 2   | 8000                 | 80000                   | 320000                     | Tape & reel   |



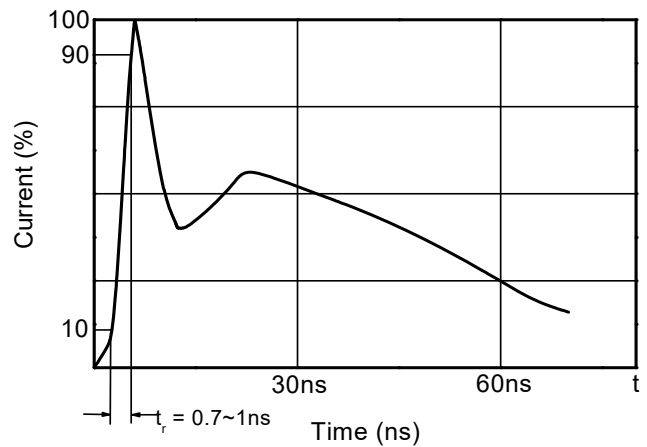
## ESD5V0D5A

### ■ Typical Performance Characteristics (Ta=25°C unless otherwise Specified)

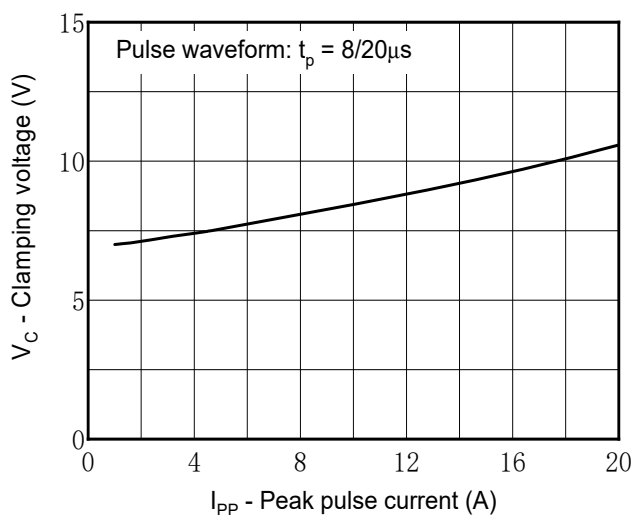
8/20μs waveform per IEC61000-4-5



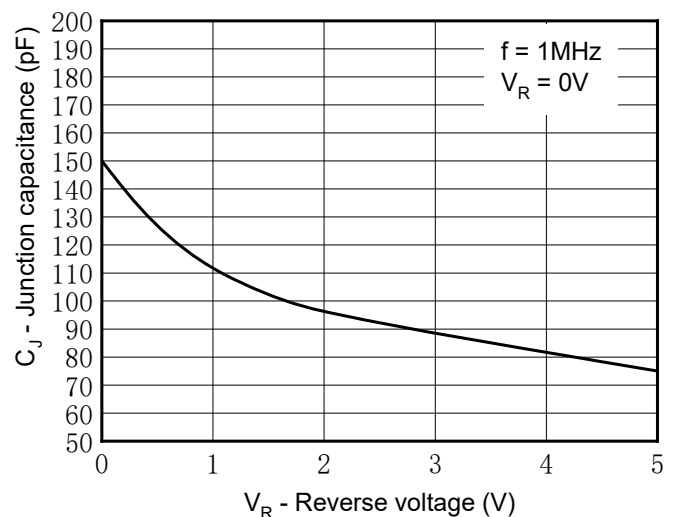
Contact discharge current waveform per IEC61000-4-2



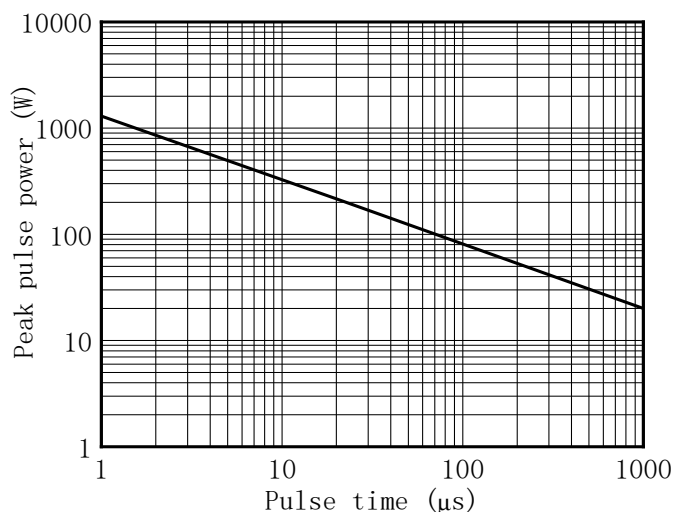
Clamping voltage vs. Peak pulse current



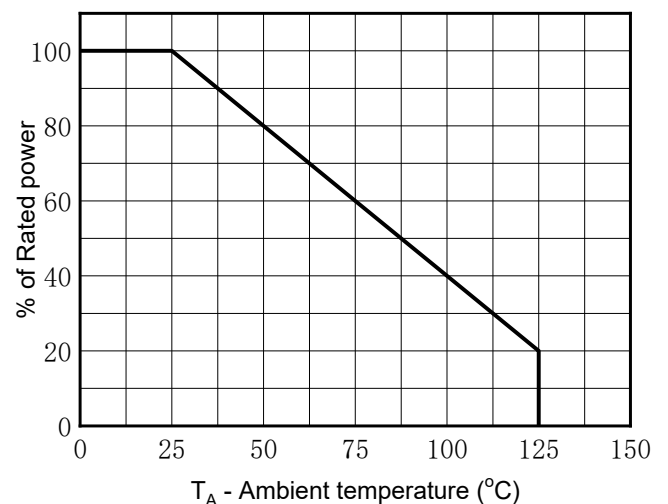
Capacitance vs. Reverse voltage

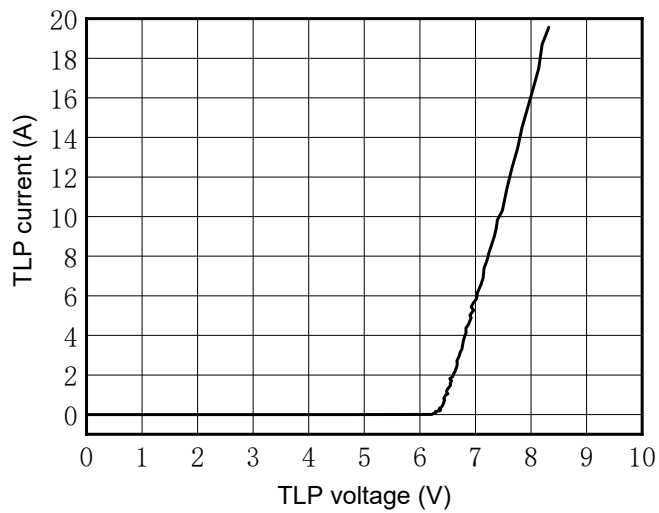


Non-repetitive peak pulse power vs. Pulse time

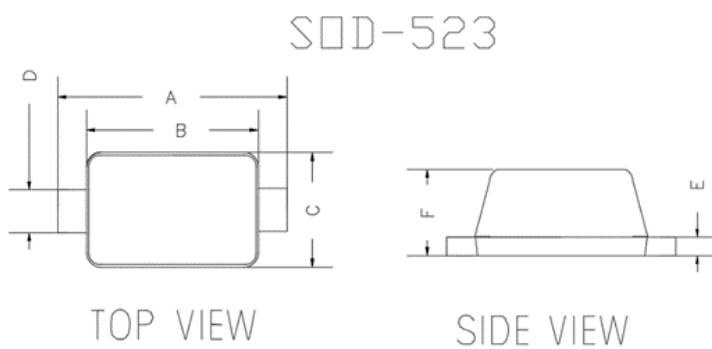


Power derating vs. Ambient temperature



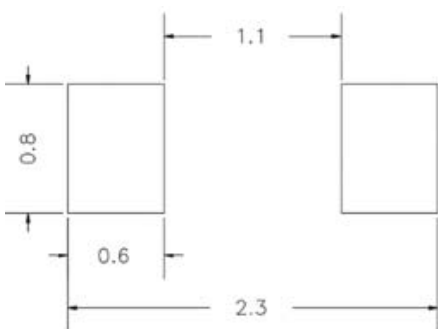


## ■ Outline Dimensions



| 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 |

## ■ Recommend land pattern (Unit:mm)



### Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met



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