



Micro Commercial Components

Micro Commercial Components  
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# ESD3V3D5 Thru ESD12VD5

## Features

- Halogen free available upon request by adding suffix "-HF"
- For sensitive ESD protection
- Excellent clamping capability
- Low leakage
- ESD rating of class 3(>16KV)per Human Body Mode
- For space saving application
- Fast response ,response time less than 1ns.
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

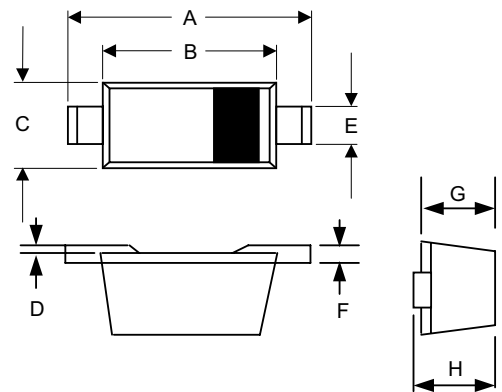
## Maximum Ratings

- Operating Junction &StorageTemperature: -55°C to +150°C
- Maximum Thermal Resistance: 625°C/W Junction To Ambient

| Parameter   | Symbol | Limits     | unit    |
|---|--------|------------|---------|
| IEC61000-4-2(ESD)<br>Air Contact                    |        | ±30<br>±30 | KV      |
| ESD Voltage per human body mode<br>per machine mode |        | 16<br>400  | KV<br>V |
| Power Dissipation                                   | Pd     | 200        | mw      |

## 3.3V~12Volts ESD Protection Devices

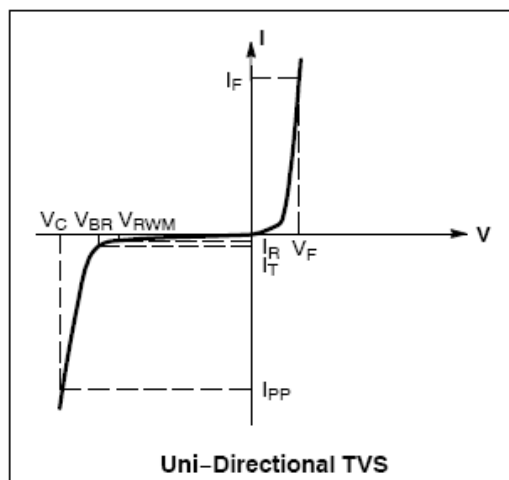
### SOD523



| DIM | INCHES |      | MM   |      | NOTE |
|-----|--------|------|------|------|------|
|     | MIN    | MAX  | MIN  | MAX  |      |
| A   | .059   | .067 | 1.50 | 1.70 |      |
| B   | .043   | .051 | 1.10 | 1.30 |      |
| C   | .030   | .033 | 0.75 | 0.85 |      |
| D   | .001   | .003 | 0.01 | 0.07 |      |
| E   | .010   | .014 | 0.25 | 0.35 |      |
| F   | .003   | .006 | 0.08 | 0.15 |      |
| G   | .020   | .028 | 0.50 | 0.70 |      |
| H   | .020   | .031 | 0.51 | 0.77 |      |

**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

| Symbol    | Parameter                                      |
|-----------|--|
| $I_{PP}$  | Maximum Reverse Peak Pulse Current             |
| $V_C$     | Clamping Voltage @ $I_{PP}$                    |
| $V_{RWM}$ | Working Peak Reverse Voltage                   |
| $I_R$     | Maximum Reverse Leakage Current @ $V_{RWM}$    |
| $V_{BR}$  | Breakdown Voltage @ $I_T$                      |
| $I_T$     | Test Current                                   |
| $I_F$     | Forward Current                                |
| $V_F$     | Forward Voltage @ $I_F$                        |
| $P_{pk}$  | Peak Power Dissipation                         |
| C         | Max. Capacitance @ $V_R=0$ and $f=1\text{MHz}$ |



**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted,  $V_F = 0.9\text{ V Max.}$  @  $I_F = 10\text{mA}$  for all types)

| Device*  | Device Marking | $V_{RWM}$ (V) | $I_R$ ( $\mu\text{A}$ ) @ $V_{RWM}$ | $V_{BR}$ (V) @ $I_T$ (Note 2) | $I_T$ | $V_C$ @ $I_{PP}^* = 5\text{ A}$ | $I_{PP}^*$ (A) | $V_C$ (V) @ Max $I_{PP}^*$ | $P_{pk}^*$ (W) | C (pF) |
|----------|----------------|---------------|-------------------------------------|-------------------------------|-------|---------------------------------|----------------|----------------------------|----------------|--------|
|          |                | Max           | Max                                 | Min                           |       | mA                              |                | V                          |                |        |
| ESD3V3D5 | ZE             | 3.3           | 0.08                                | 5.0                           | 1.0   | 9.4                             | 11.2           | 14.1                       | 158            | 105    |
| ESD5V0D5 | ZF             | 5.0           | 0.08                                | 6.2                           | 1.0   | 11.6                            | 9.4            | 18.6                       | 174            | 80     |
| ESD7V0D5 | ZH             | 7.0           | 0.03                                | 7.5                           | 1.0   | 13.5                            | 8.8            | 22.7                       | 200            | 65     |
| ESD12VD5 | ZM             | 12            | 0.02                                | 14.1                          | 1.0   | 23                              | 9.6            | 29                         | 240            | 55     |

+Surge current waveform per Figure 1.

2.  $V_{BR}$  is measured with a pulse test current  $I_T$  at an ambient temperature of  $25^\circ\text{C}$ .

**TYPICAL CHARACTERISTICS**

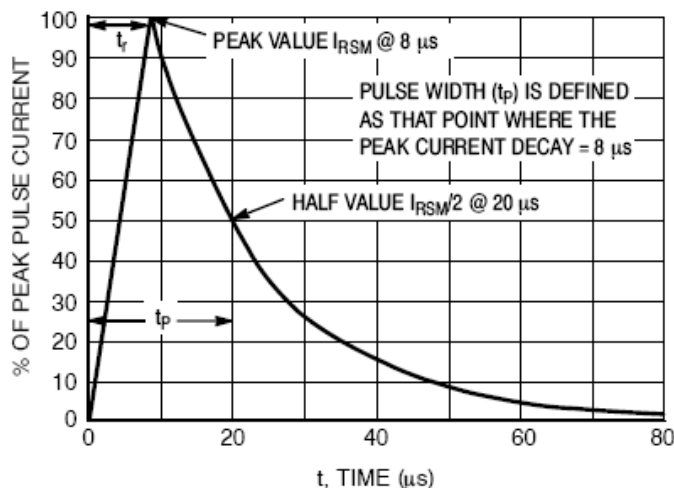


Figure 1. 8 x 20  $\mu\text{s}$  Pulse Waveform



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### Ordering Information :

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 8Kpcs/Reel |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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2013/01/01