

## Product Summary

The GESDS5V0D3F1 is designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, and fast response time provide best in class protection on designs that are exposed to ESD.

The combination of small size, high level of ESD protection makes them a flexible solution for applications such as HDMI, Display Port TM, and MDDI interfaces. It is designed to replace multiplayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

## Feature

- Reverse stand-off voltage: 5V
- Low leakage current
- Low reverse clamping voltage
- Fast response time

## Application

- Computers and peripherals
- Audio and video equipment
- Cellular handsets and accessories
- Portable instrumentation
- Other electronics equipments communication systems

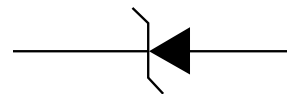
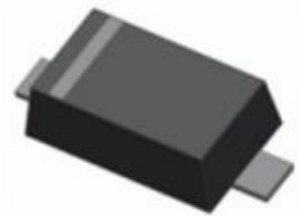
## Marking:



Front Side

ZA = Device Code

SOD-323F



## Absolute Maximum Ratings ( $T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
IEC 61000-4-2 ESD Voltage Air Model	$V_{\text{ESD}}$	$\pm 25$	KV
IEC 61000-4-2 ESD Voltage Contact Model		$\pm 25$	
ESD Voltage Per Human Body Model		$\pm 16$	
ESD Voltage Machine Model		$\pm 0.4$	
Peak Pulse Power	$P_{\text{PP}}$	240	W
Peak Pulse Current	$I_{\text{PP}}$	20	A
Lead Solder Temperature – Maximum (10 Second Duration)	$T_{\text{L}}$	260	$^{\circ}\text{C}$
Junction Temperature	$T_{\text{J}}$	150	$^{\circ}\text{C}$
Storage Temperature	$T_{\text{stg}}$	-55~ +150	$^{\circ}\text{C}$

## ESD Standards Compliance

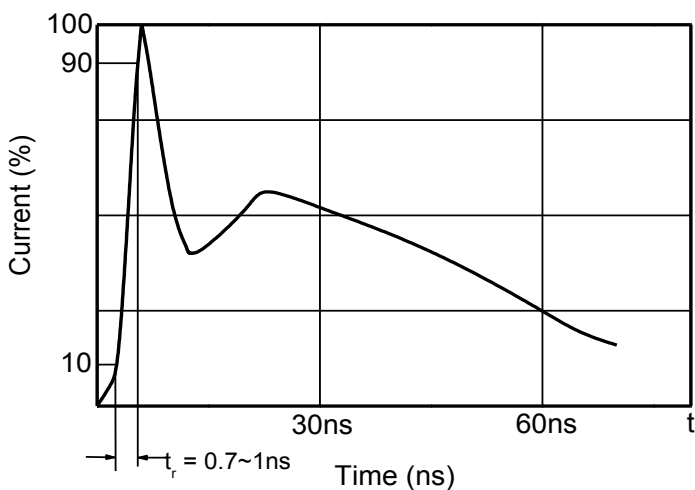
### IEC61000-4-2 Standard

Contact Discharge		Air Discharge	
Level	Test Voltage kV	Level	Test Voltage kV
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15

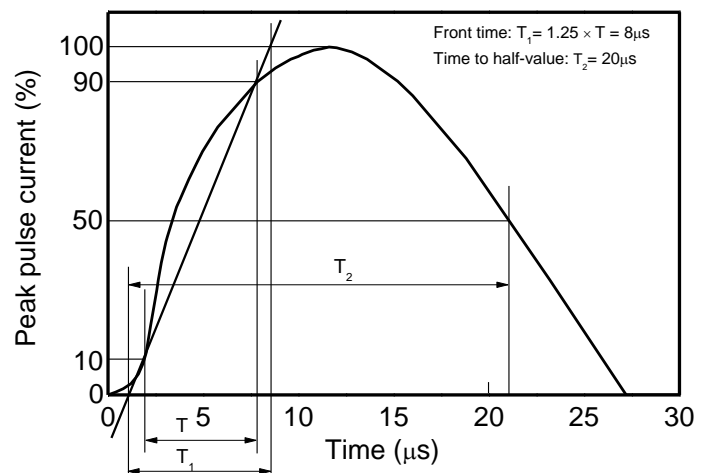
### JESD22-A114-B Standard

ESD Class	Human Body Discharge V
0	0~249
1A	250~499
1B	500~999
1C	1000~1999
2	2000~3999
3A	4000~7999
3B	8000~15999

### Contact discharge current waveform per IEC61000-4-2

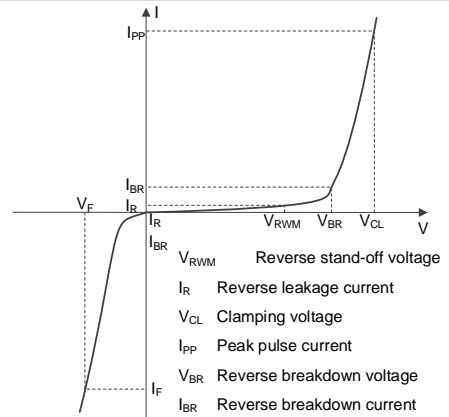


### 8/20 $\mu\text{s}$ waveform per IEC61000-4-5



## Electrical Parameter

Symbol	Parameter
V <sub>C</sub>	Clamping Voltage @ I <sub>PP</sub>
I <sub>PP</sub>	Peak Pulse Current
V <sub>BR</sub>	Breakdown Voltage @ I <sub>T</sub>
I <sub>T</sub>	Test Current
I <sub>R</sub>	Reverse Leakage Current @ V <sub>RWM</sub>
V <sub>RWM</sub>	Reverse Standoff Voltage



V-I characteristics for a Uni-directional TVS

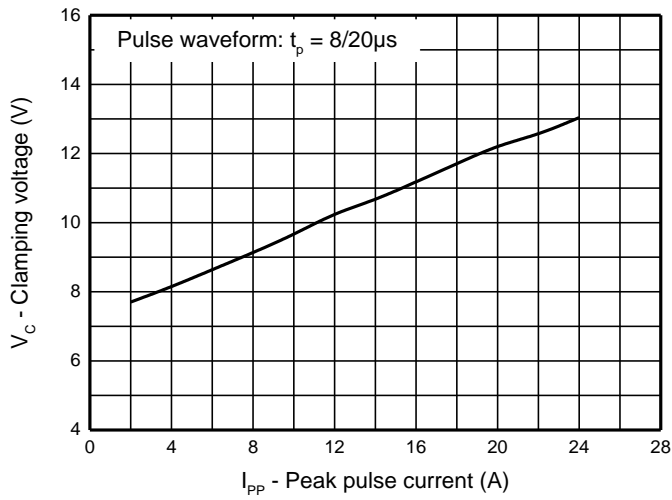
## Electrical Characteristics (T<sub>a</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand-off voltage	V <sub>RWM</sub>				5	V
Reverse leakage current	I <sub>R</sub>	V <sub>RWM</sub> =5V			1	μA
Breakdown voltage	V <sub>BR</sub> <sup>1)</sup>	I <sub>T</sub> =1mA	6	6.8	8	V
Clamping voltage	V <sub>C1</sub>	I <sub>PP</sub> =20A(8/20μS)		12	20	V
Junction capacitance	C <sub>J</sub>	V <sub>R</sub> =0V, f=1MHz		140		pF

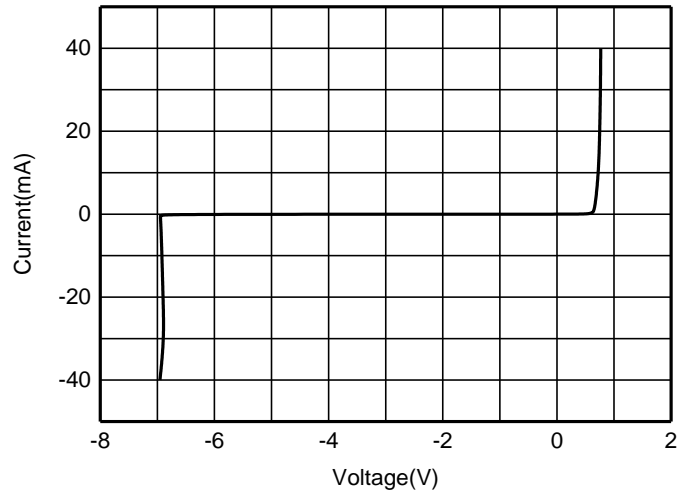
1) V<sub>BR</sub> is measured with a pulse test current I<sub>T</sub> at an ambient temperature of 25°C

**Typical Characteristics**

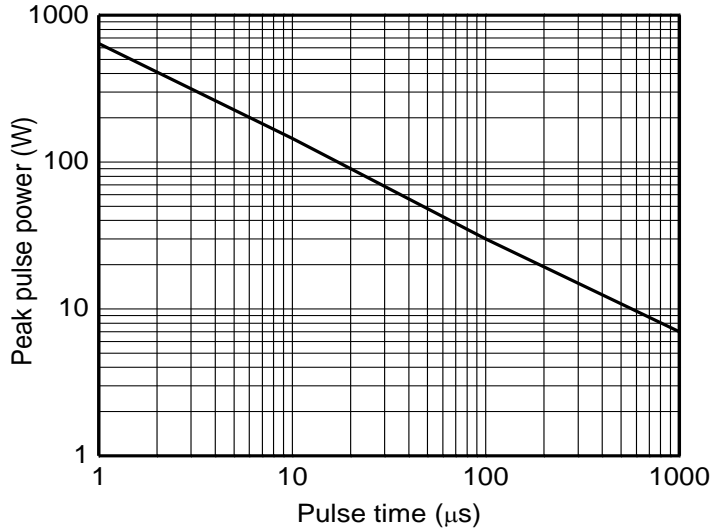
**$V_C$  vs.  $I_{PP}$**



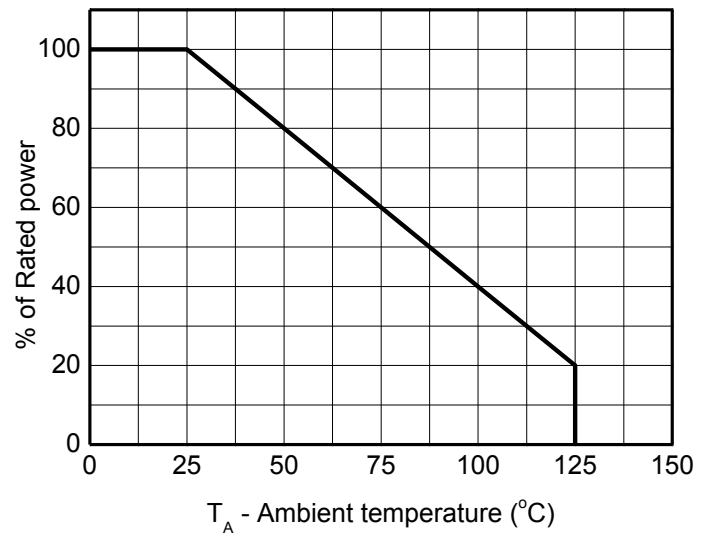
**I-V Curve**



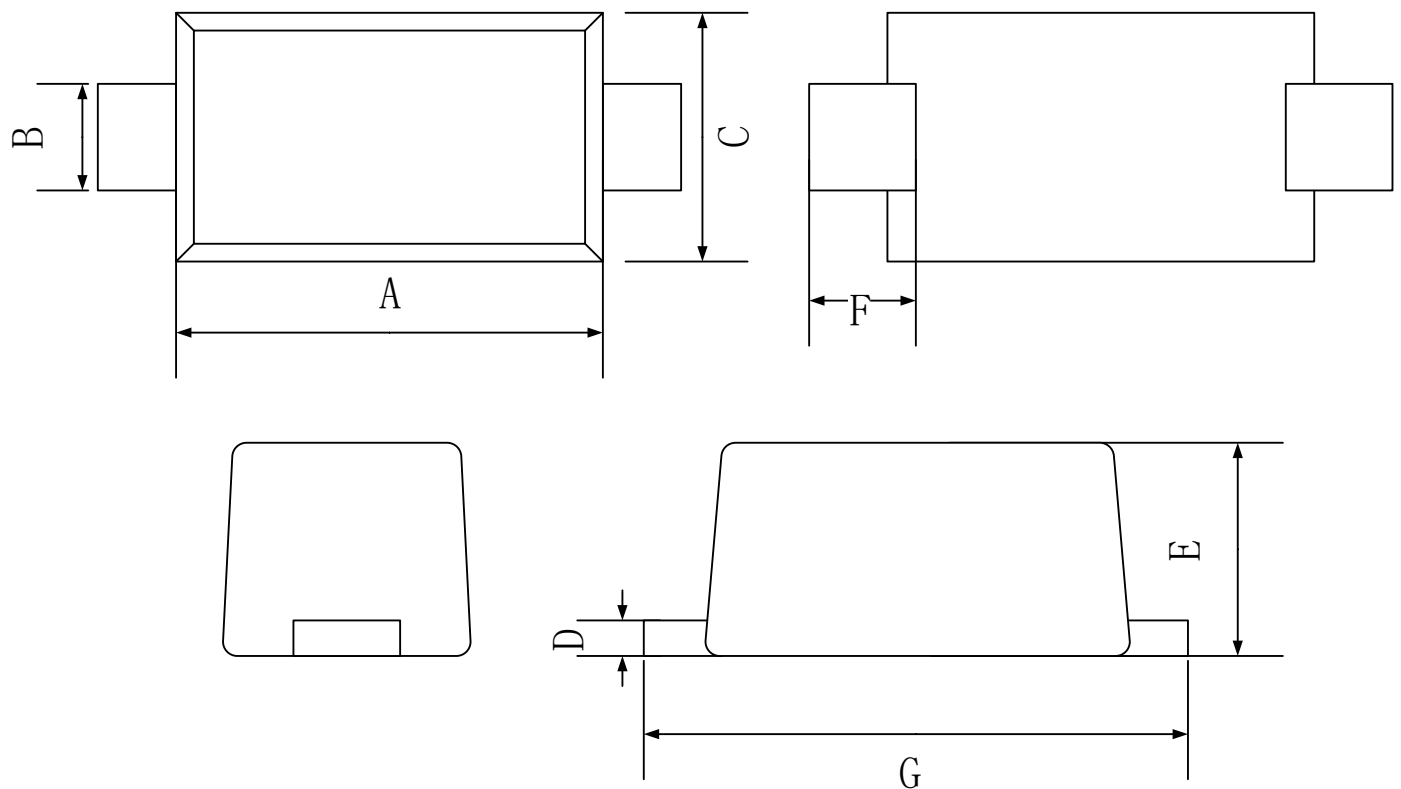
**Peak pulse power vs. Pulse time**



**Power derating vs. Ambient temperature**

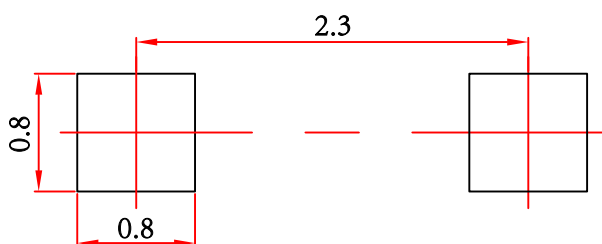


## SOD-323F Package Outline Dimensions



Symbol	Dimensions In Millimeters	
	Min.	Max.
A	1.60	1.80
B	0.25	0.40
C	1.15	1.35
D	0.06	0.21
E	0.60	0.75
F	0.30	0.50
G	2.30	2.70

## SOD-323F Package Outline Dimensions



**Note:**

1. Controlling dimension: in millimeters.
2. General tolerance:  $\pm 0.05\text{mm}$ .
3. The pad layout is for reference purposes only.