

### Product Summary

The GESDBU24VAE1P is designed to protect voltage sensitive electronic components from ESD and other transients. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

The combination of small size, low capacitance, and 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 equipment applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

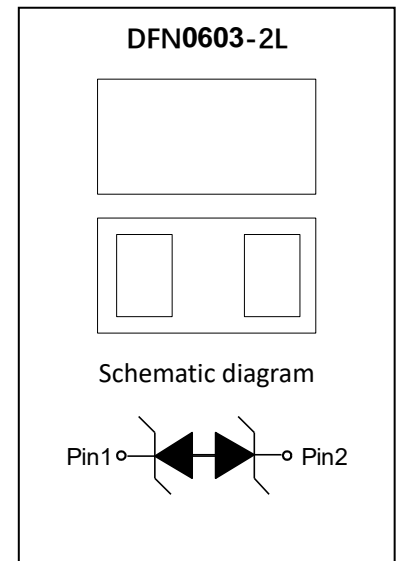
### Feature

- Low reverse stand-off voltage: 24V Max.
- Low reverse clamping voltage
- Low leakage current
- Fast response time
- IEC 61000-4-2 Level 4 ESD protection

### Application

- Digital cameras
- Portable applications
- Audio and video equipment
- MP3 players
- Mobile phone

### Marking: CR



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

Parameter	Symbol	Value	Unit
IEC 61000-4-2 ESD Voltage	$V_{\text{ESD}}$	$\pm 15$	kV
IEC 61000-4-2 ESD Voltage		$\pm 15$	
Peak Pulse Power ( $t_p = 8/20\mu\text{s}$ )	$P_{\text{pk}}$	20	W
Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ )	$I_{\text{PP}}$	4	A
Lead Solder Temperature – Maximum (10 Second Duration)	$T_L$	260	$^{\circ}\text{C}$
Junction Temperature	$T_j$	-55~ +150	$^{\circ}\text{C}$
Storage Temperature	$T_{\text{stg}}$	-55~ +150	$^{\circ}\text{C}$

## ESD standards compliance

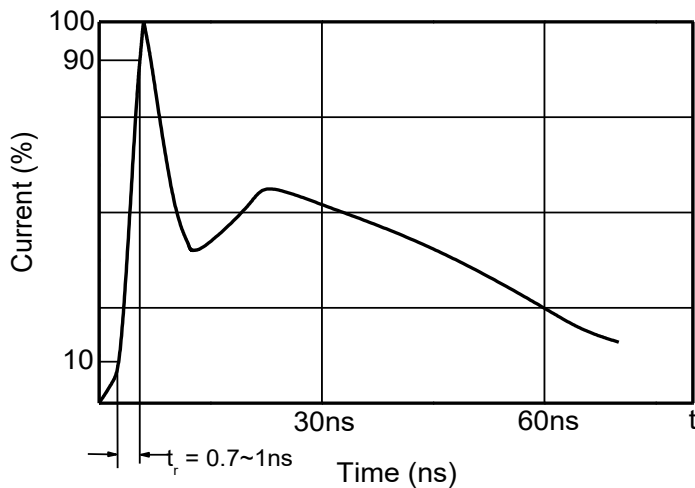
### IEC61000-4-2 Standard

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

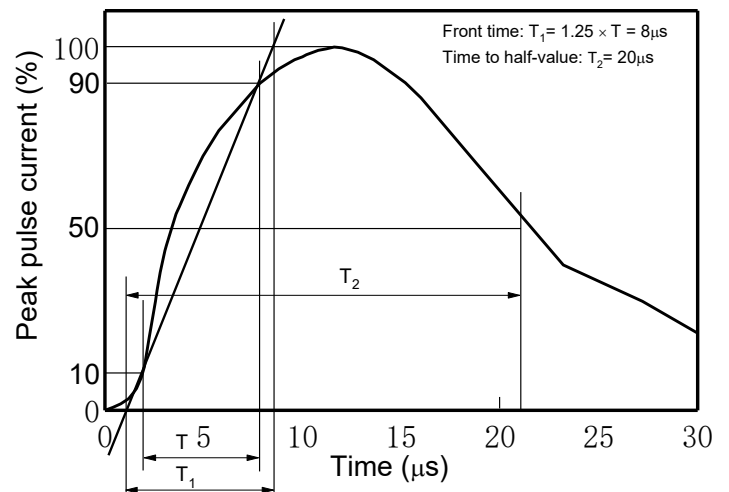
### JESD22-A114-B Standard

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

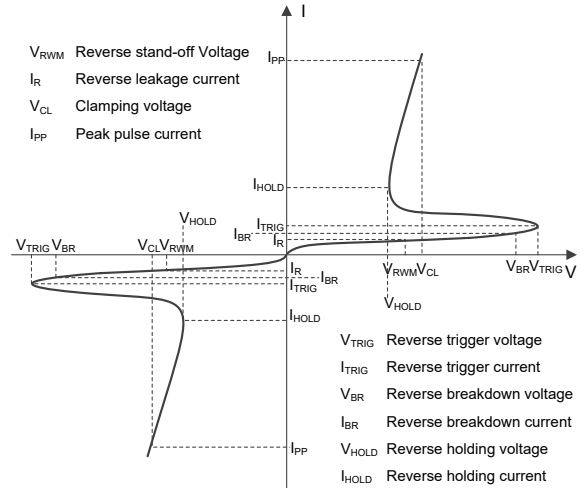


### 8/20 $\mu\text{s}$ waveform per IEC61000-4-5



## Electrical Parameter

Symbol	Parameter
V <sub>CL</sub>	Clamping Voltage @ IPP
I <sub>PP</sub>	Peak Pulse Current
V <sub>TRIG</sub>	Reverse trigger voltage
I <sub>TRIG</sub>	Reverse trigger current
V <sub>BR</sub>	Reverse breakdown Voltage
I <sub>BR</sub>	Reverse breakdown current
V <sub>RWM</sub>	Reverse Standoff Voltage
I <sub>R</sub>	Reverse Leakage Current @ VRWM
V <sub>HOLD</sub>	Reverse Holding Voltage
I <sub>HOLD</sub>	Reverse Holding Current



V-I characteristics for a Bi-direction TVS

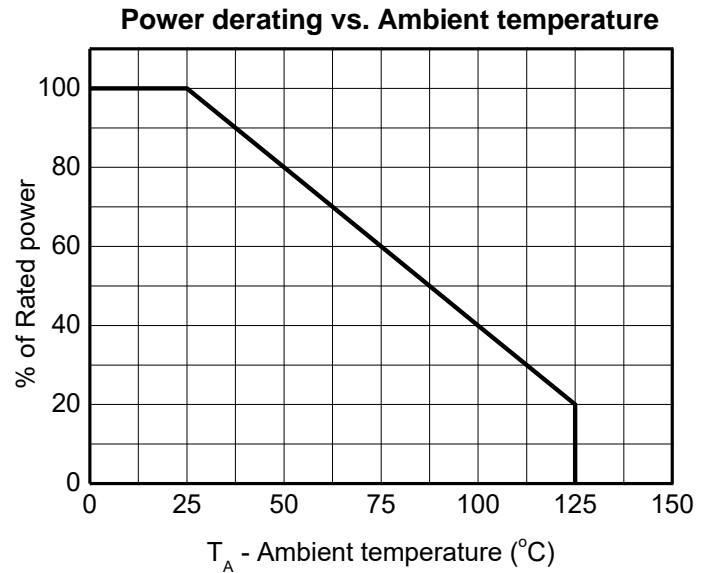
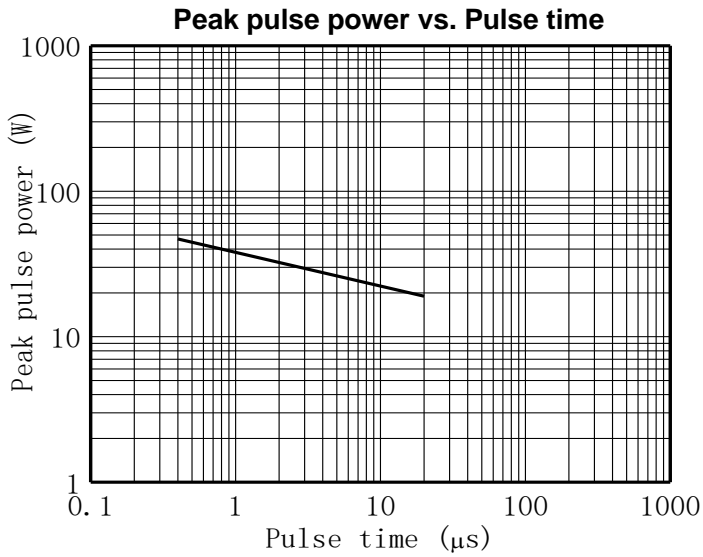
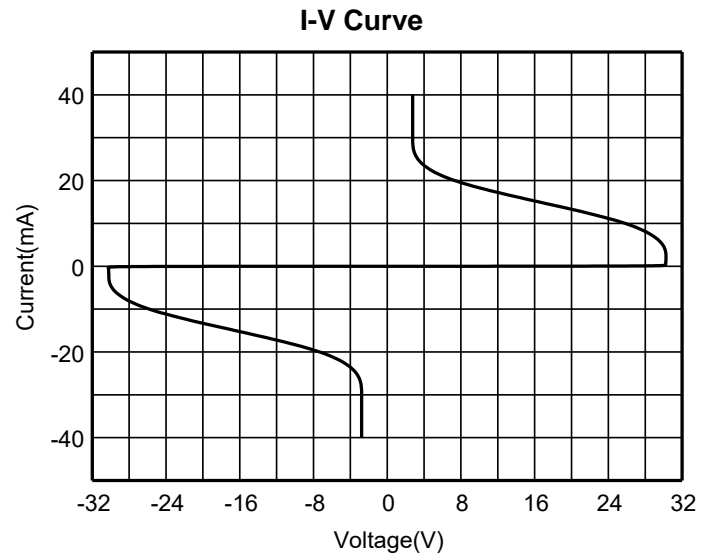
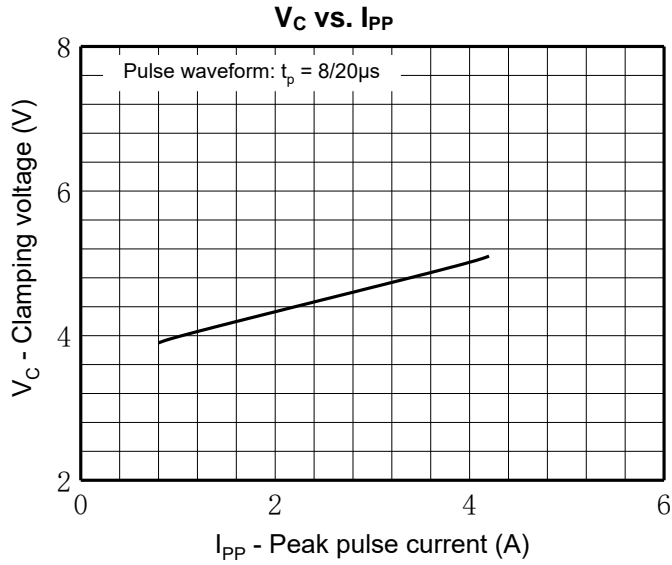
## Electrical Characteristics (T<sub>a</sub>=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse standoff voltage	V <sub>RWM</sub> <sup>1)</sup>				24	V
Reverse leakage current	I <sub>R</sub>	V <sub>RWM</sub> =24V			1	μA
Breakdown voltage	V <sub>BR</sub>	I <sub>T</sub> =1mA	25			V
Clamping voltage	V <sub>C1</sub> <sup>2)</sup>	IPP=1A		4	5	V
		IPP=4A		5	6	
		TLP=16A		5.6		
Junction capacitance	C <sub>J</sub>	V <sub>R</sub> =0V, f=1MHz		0.4	0.6	pF

1) Other voltages available upon request.

2) Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5

## Typical Characteristics



## Transmission Line Pulsing(TLP) Measurement

