

Product Summary

The GESDS4V8FA1 is a uni-directional TVS diode, utilizing leading monolithic silicon technology to provide fast response time and low ESD clamping voltage, making this device an ideal solution for protecting voltage sensitive data and power line.

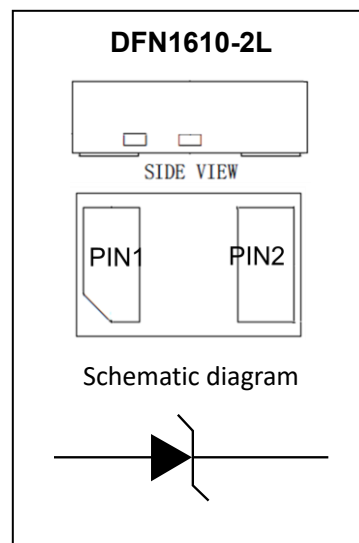
Feature

- Low reverse stand-off voltage: 4.85V
- Low reverse clamping voltage
- Low leakage current
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection

Application

- Computers and peripherals
- Portable electronics
- Power lines
- Audio and video equipment
- Cellular handsets and accessories
- Other electronic equipment communication systems

Marking:



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

Parameter	Symbol	Value	Unit
IEC 61000-4-2 ESD Voltage Air Model	$V_{\text{ESD}}^{1)}$	± 30	kV
IEC 61000-4-2 ESD Voltage Contact Model		± 30	
JESD22-A114-B ESD Voltage Per Human Body Model		± 16	
ESD Voltage Machine Model		± 0.4	
Peak Pulse Power	$P_{\text{PP}}^{2)}$	3135	W
Peak Pulse Current	$I_{\text{PP}}^{2)}$	165	A
Lead Solder Temperature – Maximum (10 Second Duration)	T_L	260	$^{\circ}\text{C}$
Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-55~ +150	$^{\circ}\text{C}$

- 1) Device stressed with ten non-repetitive ESD pulses.
- 2) Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

ESD standards compliance

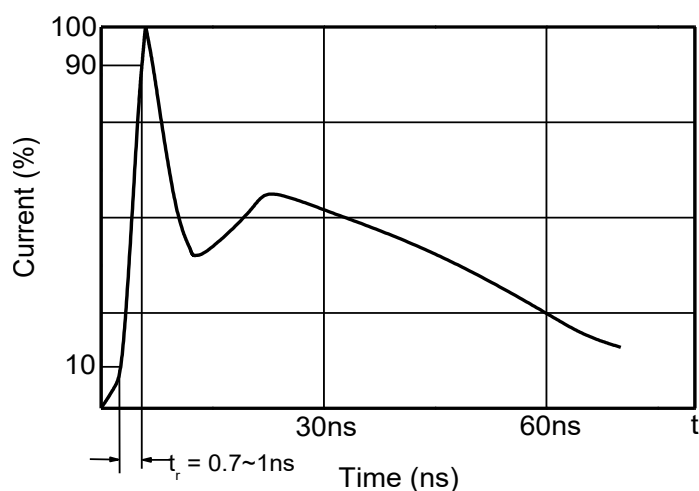
IEC61000-4-2 Standard

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

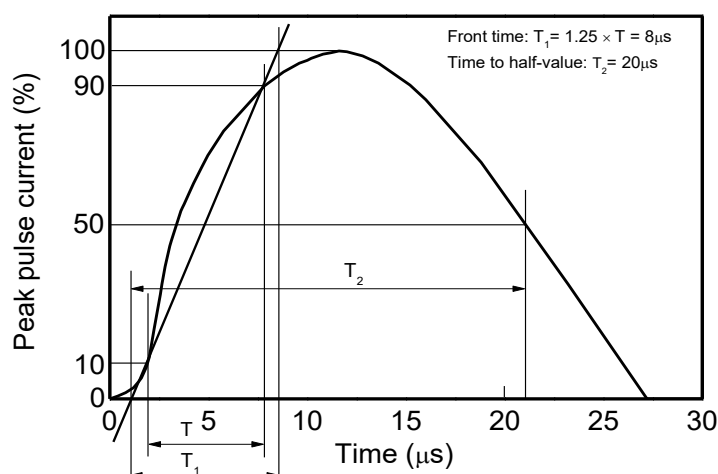
JESD22-A114-B Standard

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

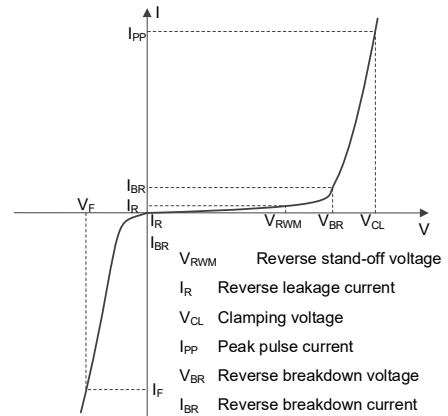


8/20 μs waveform per IEC61000-4-5



Electrical Parameter

Symbol	Parameter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage



V-I characteristics for a Uni-directional TVS

Electrical Characteristics (Ta=25°C unless otherwise specified)

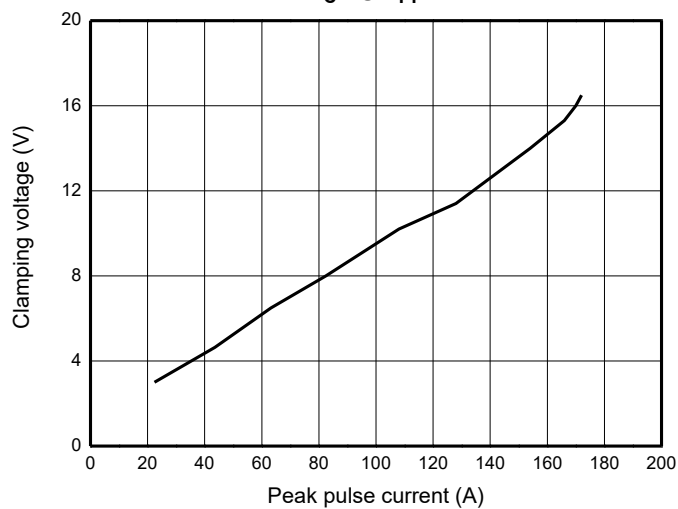
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand-off voltage	$V_{RWM}^{1)}$				4.85	V
Reverse leakage current	I_R	$V_{RWM}=4.85V$			0.1	uA
Breakdown voltage	V_{BR}	$I_T=1mA$	4.9	5.3		V
Forward voltage	V_F	$I_F=10mA$			1	V
Clamping voltage	$V_C^{2)}$	$I_{PP}=100A$		12		V
		$I_{PP}=170A$		17	19	V
Junction capacitance	C_J	$V_R=0V, f=1MHz$		350	400	pF

1) Other voltages available upon request.

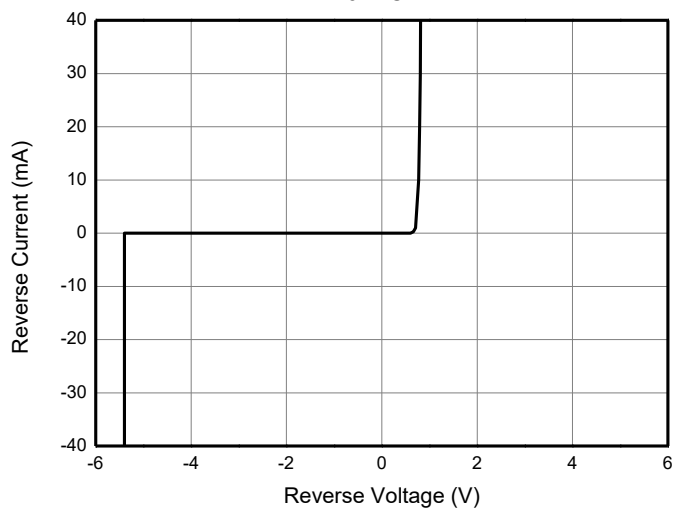
2) Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5

Typical Characteristics

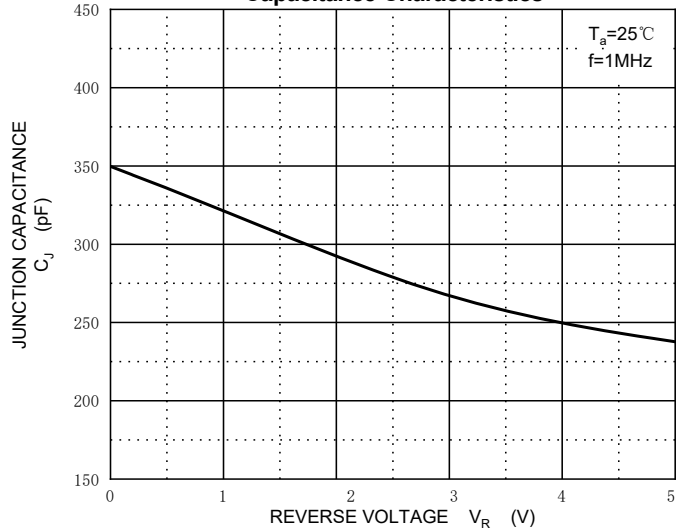
V_C vs. I_{PP}



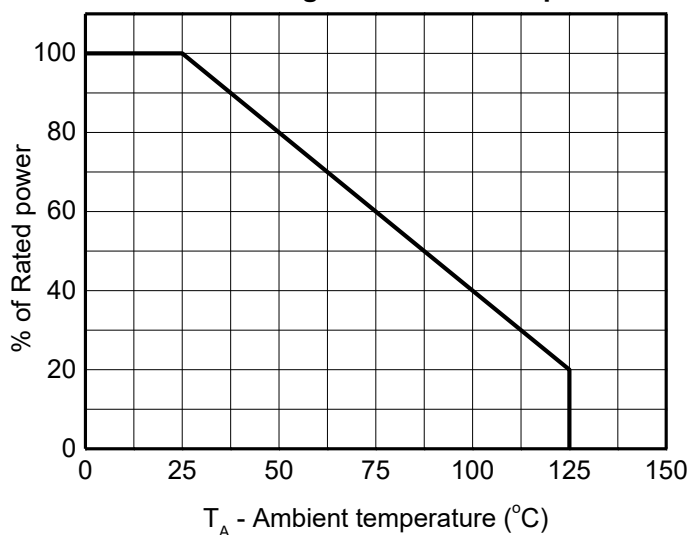
I-V Curve



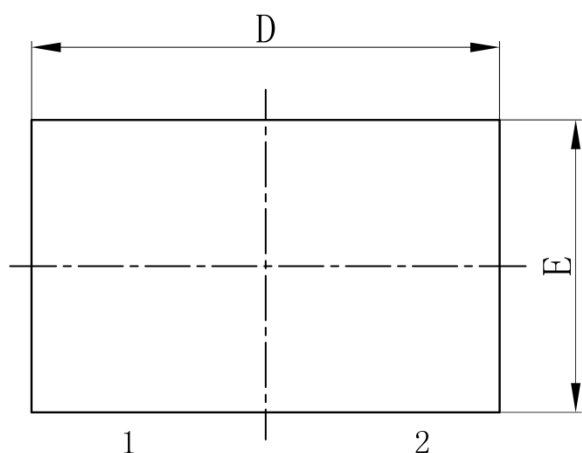
Capacitance Characteristics



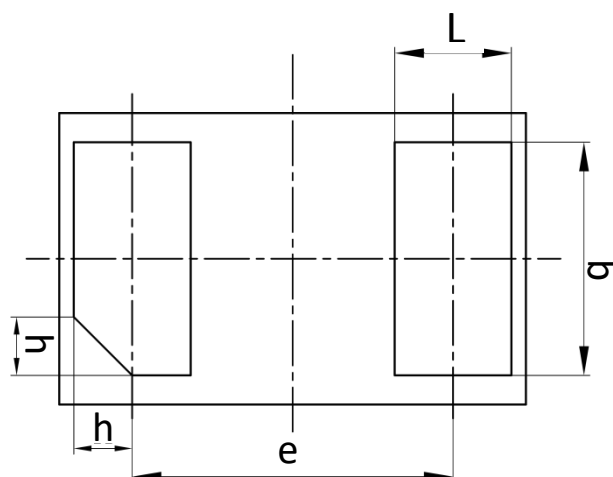
Power derating vs. Ambient temperature



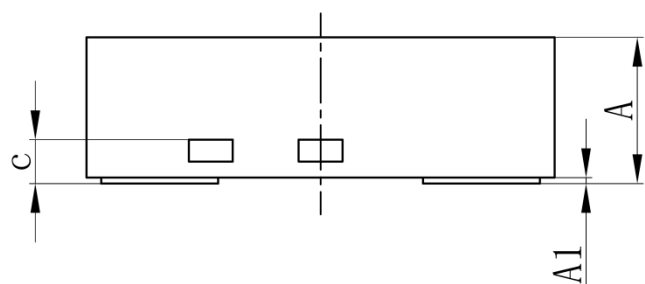
DFN1610-2L Package Outline Dimensions



TOP VIEW



BOTTOM VIEW



SIDE VIEW

	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	0.45	0.47	0.50
A1	-	0.03	0.05
b	0.75	0.78	0.80
c	0.10	0.12	0.15
D	1.55	1.60	1.65
e	-	1.10	-
E	0.95	1.00	1.05
L	0.35	0.40	0.45
h	0.15	0.20	0.25