

Product Summary

The GESDP20VY1 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 multilayer varistors (MLV) in consumer equipment applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

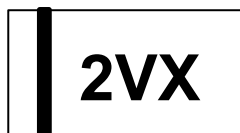
Feature

- Working voltage: 20V
- Low capacitance:
- Low reverse clamping voltage
- Low leakage current
- Excellent package: 1.0mm×0.6mm×0.47mm
- Fast response time
- JESD22-A114-B ESD Rating of class 3B per human body model
- IEC 61000-4-2 Level 4 ESD protection

Application

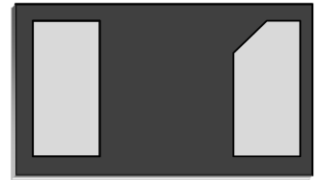
- Cellular Handsets & Accessories
- Personal Digital Assistants (PDAs)
- Notebooks & Handhelds
- Portable Instrumentation
- Digital Cameras
- MP3 Players

Marking:

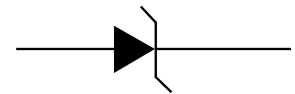


Front Side
 2VX=Device Code

DFN1006-2L



Schematic diagram



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

Parameter	Symbol	Value	Unit
IEC 61000-4-2 ESD Voltage	Air Model	± 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	$P_{PP}^{2)}$	870	W
Peak Pulse Current	$I_{PP}^{2)}$	30	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

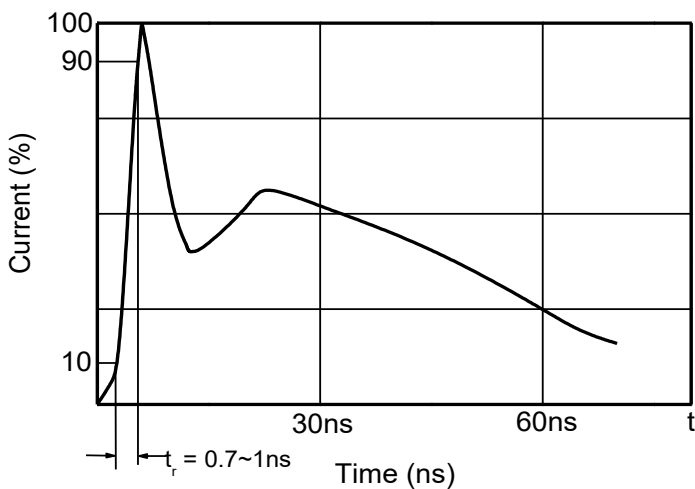
IEC61000-4-2 Standard

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

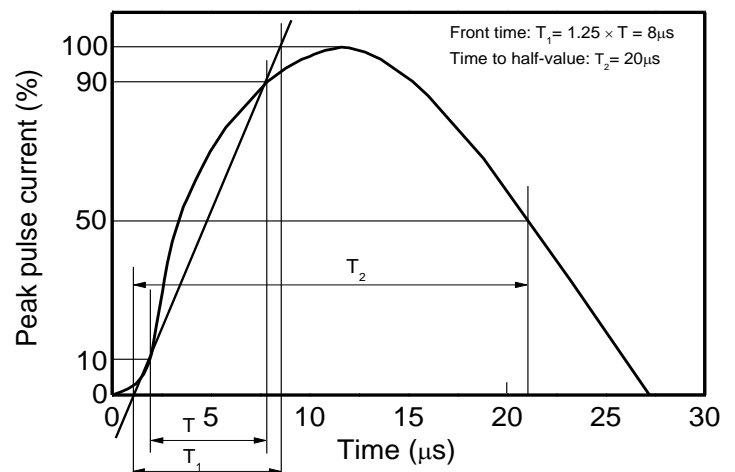
JESD22-A114-B Standard

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

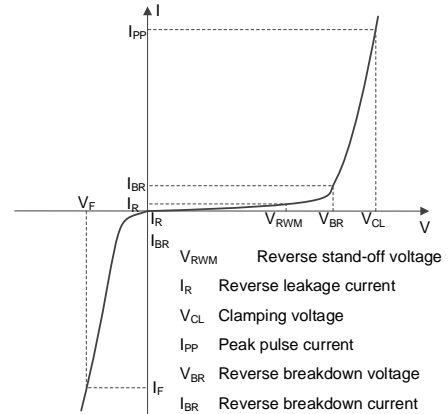


8/20 μs waveform per IEC61000-4-5



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

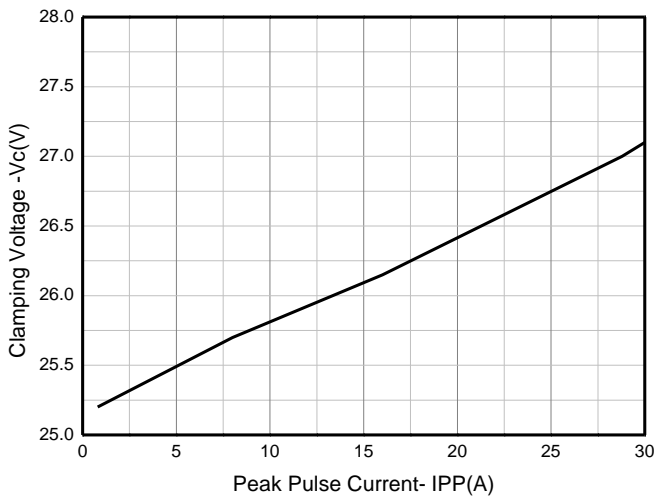
Electrical Characteristics (T_a=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse stand-off voltage	V _{RWM} ¹⁾				20	V
Reverse leakage current	I _R	V _{RWM} =20V			0.5	uA
Breakdown voltage	V _{BR}	I _T =1mA	22		26	V
Forward voltage	V _F	I _F =10mA	0.5		1.2	V
Clamping voltage	V _C ²⁾	I _{PP} =10A		25,8	28	V
		I _{PP} =30A		27	29	V
Junction capacitance	C _J	V _R =0V, f=1MHz		90	110	pF

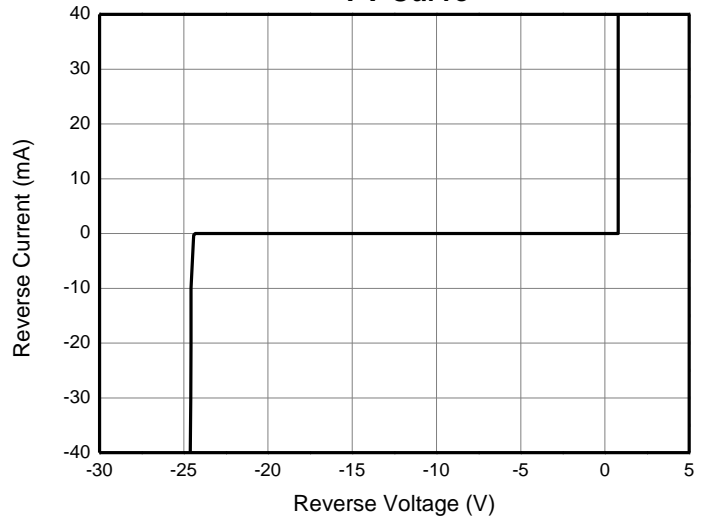
- 1) Other voltages available upon request.
- 2) Non-repetitive current pulse 8/20μs exponential decay waveform according to IEC61000-4-5

Typical Characteristics

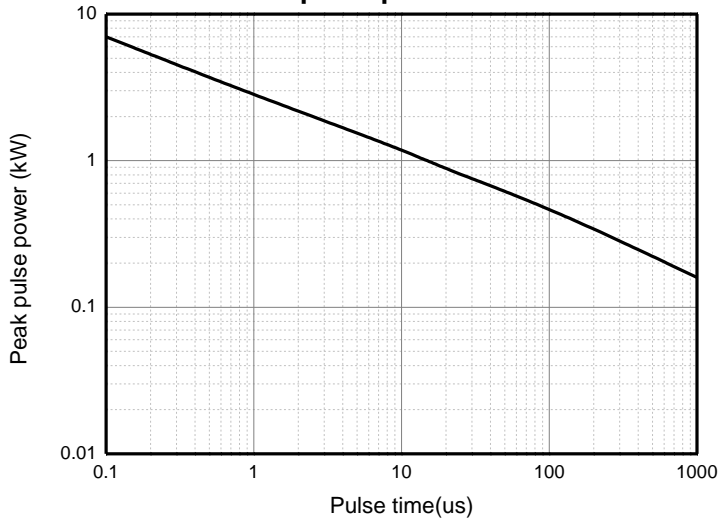
V_C vs. I_{PP}



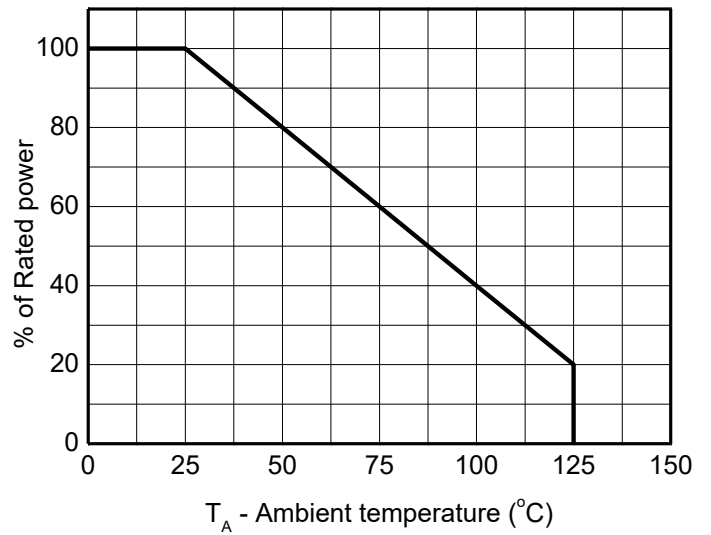
I-V Curve

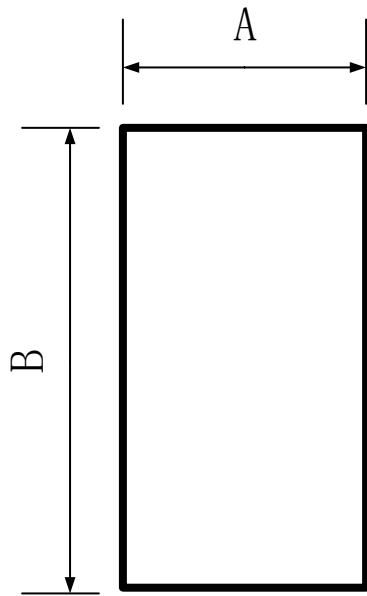


Peak pulse power vs. Pulse time

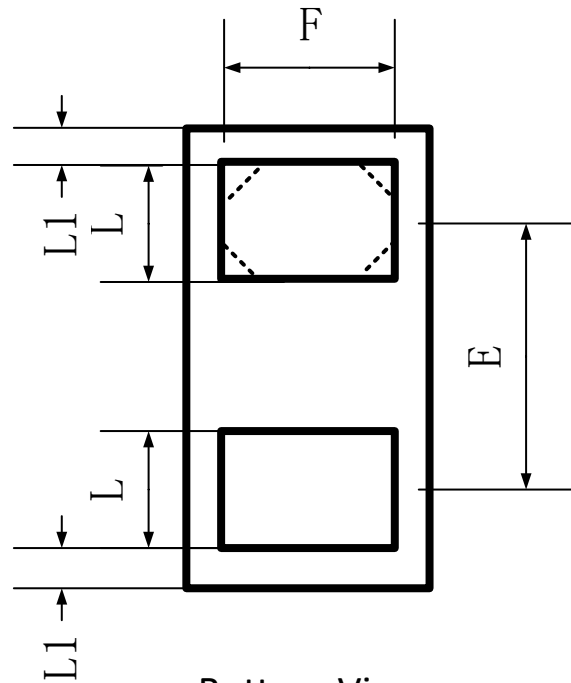


Power derating vs. Ambient temperature

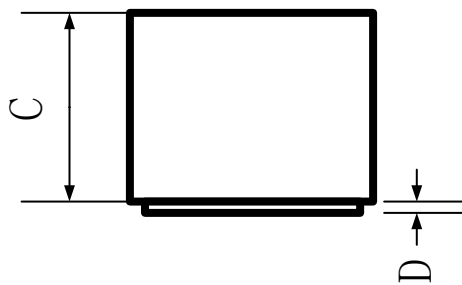


DFN1006-2L Package Outline Dimensions


Top View



Bottom View



Side View

	Dimensions In Millimeters		
	Min.	Typ.	Max.
A	0.59	0.60	0.65
B	0.99	1.00	1.05
C	0.40	0.47	0.50
D	0.00	0.03	0.05
E	-	0.65	-
F	0.43	0.50	0.53
L	0.17	0.25	0.27
L1	0.05REF		