ESD9X5VA

1-Line Uni-directional Transient Voltage Suppressors

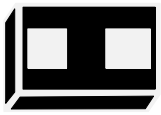
Http//:www.sh-willsemi.com

Descriptions

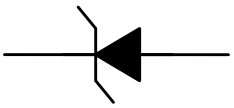
The ESD9X5VA is a transient voltage suppressors (TVS) which provide a very high level protection for sensitive electronic components that may be subjected to electrostatic discharge (ESD). It is designed to replace multilayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

The ESD9X5VA was past ESD transient voltage up to ±15kV (contact) according to IEC61000-4-2 and withstand peak current up to 3A for 8/20us pulse according to IEC61000-4-5.

The ESD9X5VA is available in FBP-02C package. Standard products are Pb-free and Halogen-free.



FBP-02C



Pin configuration (Top view)

FBP-02C

*** = Month (A~Z)**
M = Device code
Marking

Features

- Working voltage : 5V
- Peak power (tp=8/20us) : 39W
- ESD protection
  IEC61000-4-2 (Contact) : ±15kV
  IEC61000-4-2 (Air) : ±15kV
- Low leakage current
- Small package

Applications

- Mobile phone
- PAD
- Notebook
- STB
- LCD TV
- Digital camera
- Other electronics equipments

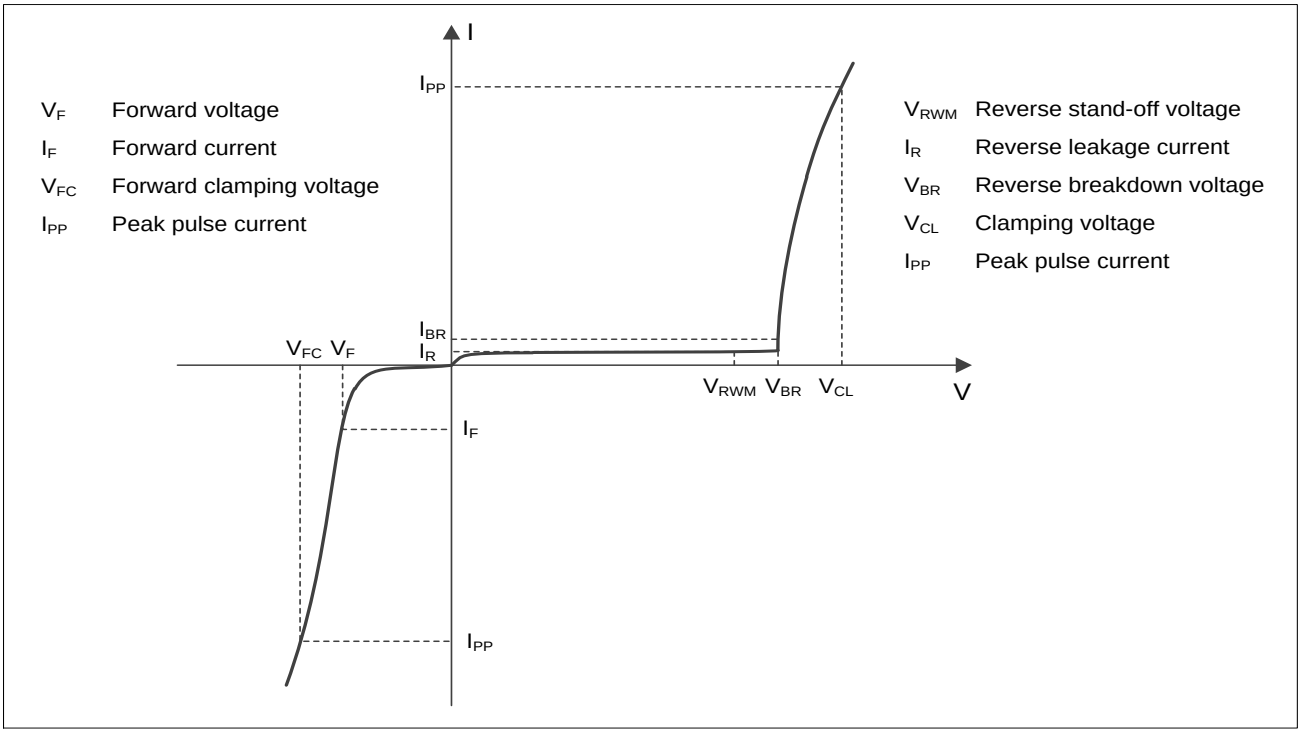
Order information

Device	Package	Shipping
ESD9X5VA-2/TR	FBP-02C	10000/Tape&Reel

Absolute maximum ratings

Parameter	Symbol	Rating	Unit
Peak pulse power (tp=8/20us)	Ppk	39	W
Peak pulse current (tp=8/20us)	Ipp	3	A
ESD voltage IEC61000-4-2 (Contact)	V_{ESD}	±15	kV
ESD voltage IEC61000-4-2 (Air)		±15	
Junction temperature	T_J	125	°C
Operating temperature	T_{OP}	-40~85	°C
Lead temperature	T_L	260	°C
Storage temperature	T_{STG}	-55~150	°C

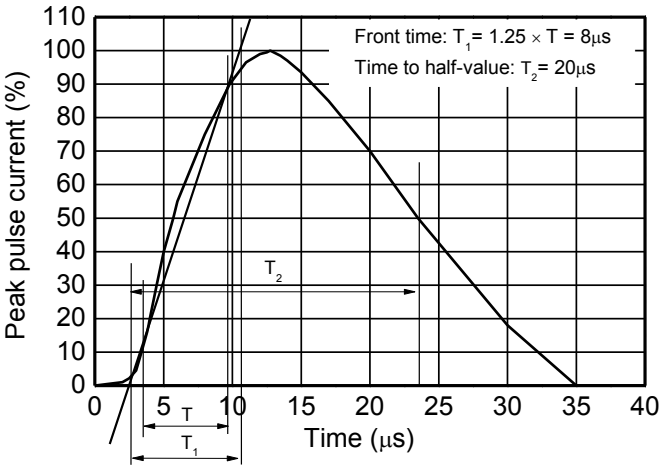
Electronics characteristics (Ta=25°C, unless otherwise noted)



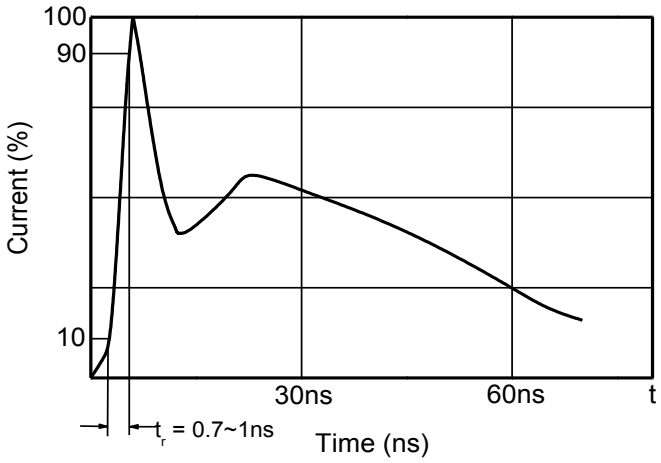
Electronics characteristics (Ta=25°C, unless otherwise noted)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse maximum working voltage	V_{RWM}				5	V
Reverse leakage current	I_R	V_{RWM}=5V			50	nA
Reverse breakdown voltage	V_{BR}	I_T=1mA	6.2	6.8	7.6	V
Forward voltage	V_F	I_F=10mA	0.55	0.9	1.25	V
Clamping voltage	V_{CL}	Ipp=1A tp=8/20us			9.5	V
		Ipp=3A tp=8/20us			13	V
Junction capacitance	C_J	f=1MHz, V_R=0V		12	16	pF

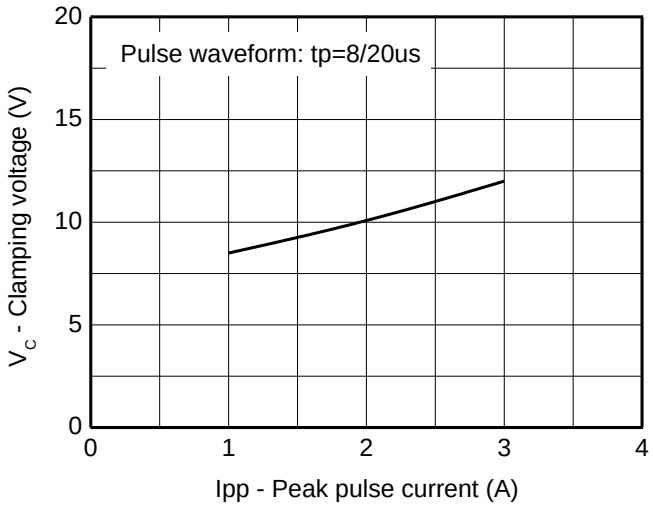
Typical characteristics (T_A=25°C, unless otherwise noted)



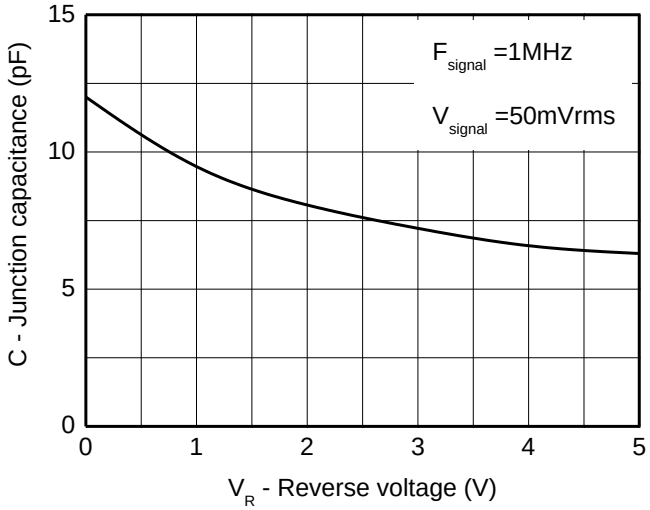
8/20μs waveform per IEC61000-4-5



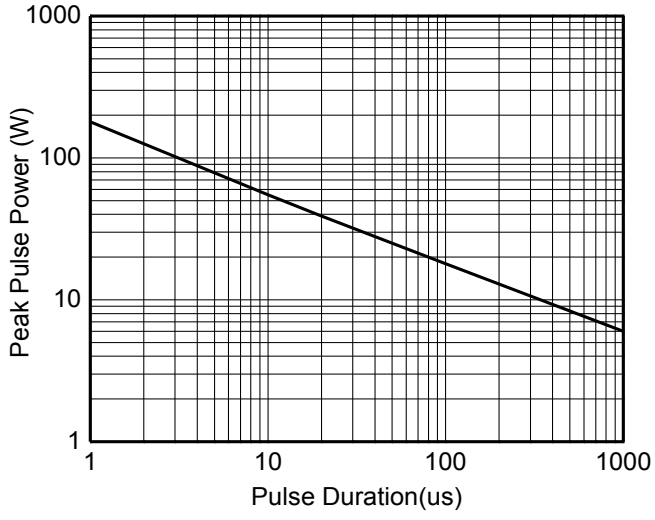
Contact discharge current waveform per IEC61000-4-2



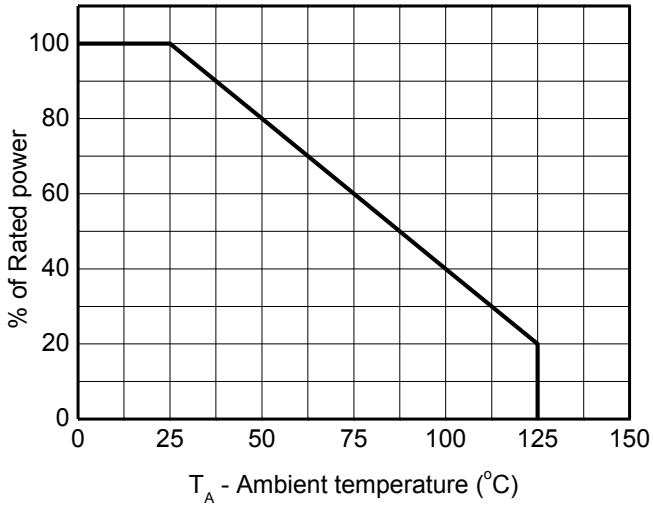
Clamping voltage vs. Peak pulse current



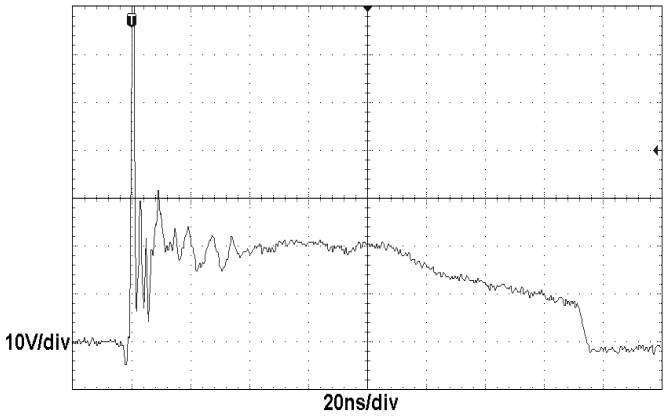
Capacitance vs. Reveres voltage



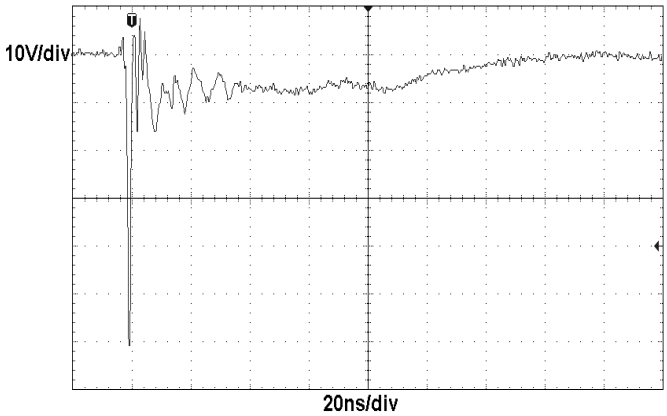
Non-repetitive peak pulse power vs. Pulse time



Power derating vs. Ambient temperature



ESD clamping
(+8kV contact discharge per IEC61000-4-2)



ESD clamping
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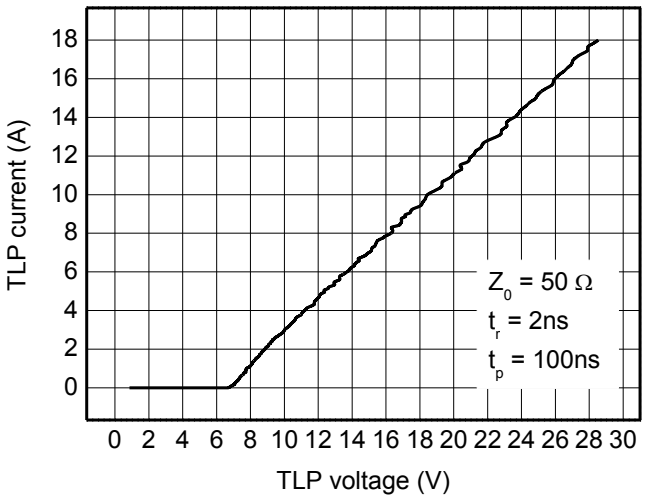
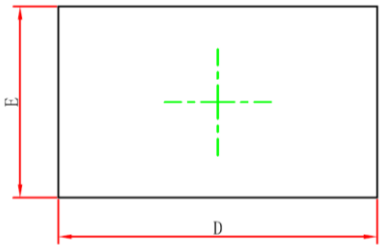


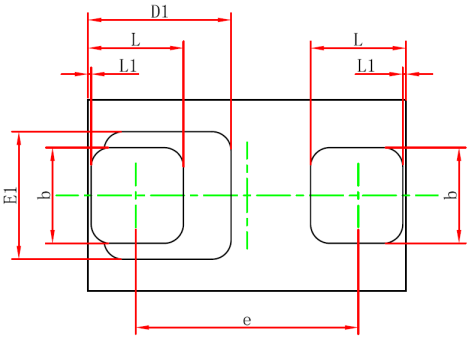
TLP Measurement

Package outline dimensions

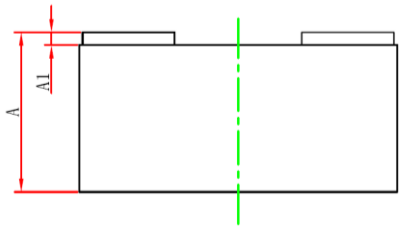
FBP-02C



TOP VIEW



BOTTOM VIEW



SIDE VIEW

Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	0.450	0.500	0.550
A1	0.010	-	0.090
D	0.950	1.000	1.050
E	0.550	0.600	0.650
D1	0.450 Ref.		
E1	0.400 Ref.		
b	0.250	0.300	0.350
e	0.600	0.675	0.750
L	0.320	0.385	0.450
L1	0.250	0.300	0.350
L2	0.010 Ref.		

Recommend PCB Layout (Unit: mm)