ESD9B5VA

1-Line Bidirectional Transient Voltage Suppressors

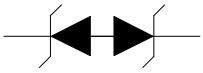
Descriptions

The ESD9B5VA 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 ESD9B5VA was past ESD transient voltage up to ±30kV (contact) according to IEC61000-4-2 and withstand peak current up to 7A for 8/20us pulse according to IEC61000-4-5.

The ESD9B5VA is available in FBP-02C package. Standard products are Pb-free and Halogen-free.

FBP-02C



Pin configuration (Top view)

FBP-02C

V = Device code

*** = Month (A~Z)**

Marking

Features

- Working voltage : 5V
- Peak power (tp=8/20us) : 126W Max.
- Peak current (tp=8/20us) : 7A Max.
- Transient protection
  IEC61000-4-2 : ±30kV air
  : ±30kV contact
- Low clamping voltage
- Low leakage current
- Small package

Order information

Device	Package	Shipping
ESD9B5VA-2/TR	FBP-02C	10000/Tape&Reel

Applications

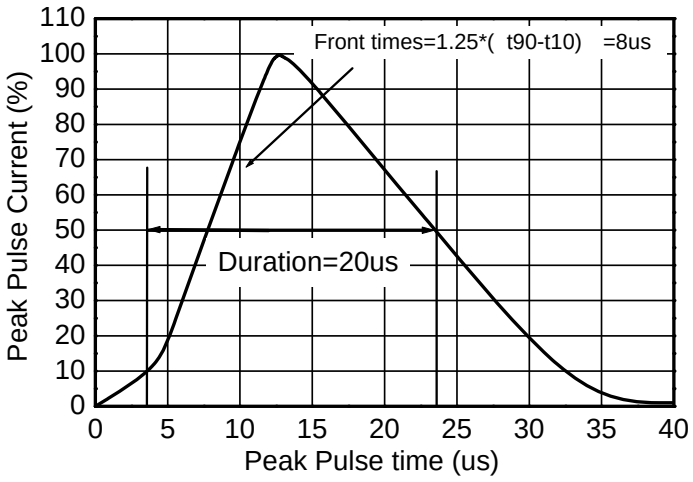
- Cell phone
- PMP
- MID
- PDA
- Digital camera
- Other electronics equipments

Absolute maximum ratings

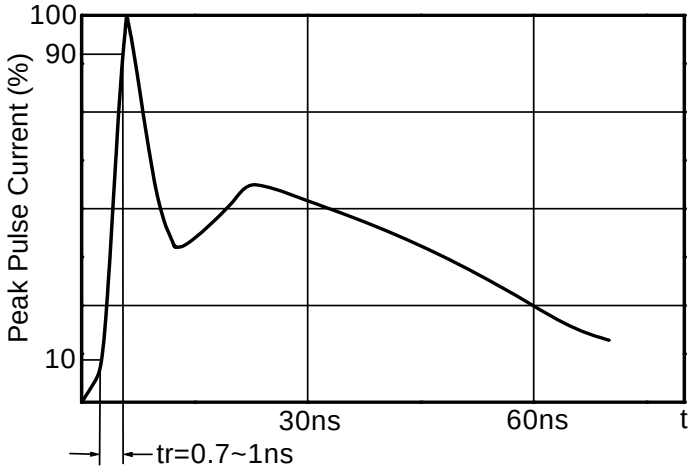
Parameter	Symbol	Rating	Unit
Peak pulse power (tp=8/20us)	Ppk	126	W
Peak pulse current (tp=8/20us)	Ipp	7	A
ESD voltage IEC61000-4-2 air	V_{ESD}	±30	kV
ESD voltage IEC61000-4-2 contact		±30	
Junction temperature	T_J	125	°C
Operating temperature	T_{OP}	-40~85	°C
Lead temperature	T_L	260	°C
Storage temperature	T_{STG}	-55~150	°C

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

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Reverse maximum working voltage	V_{RWM}				5	V
Reverse leakage current	I_R	V_{RWM}=5V			1.0	uA
Reverse breakdown voltage	V_{BR}	I_T=1mA	5.8		8.1	V
Clamping voltage	V_C	Ipp=1A tp=8/20us			10	V
		Ipp=7A tp=8/20us			18	V
Junction capacitance	C_J	F=1MHz, V_R=0V		14	18	pF

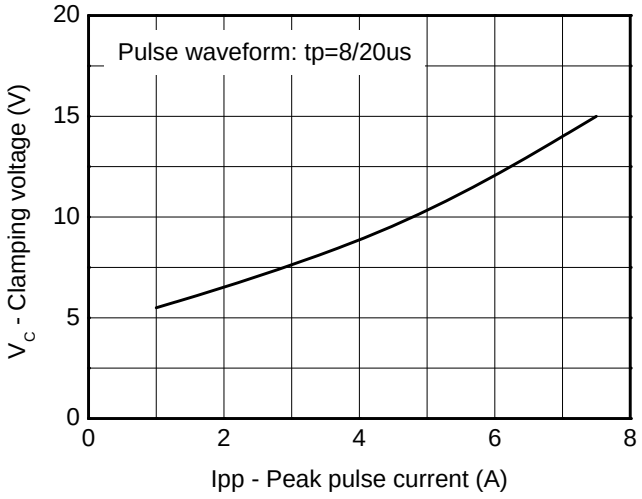


8/20us waveform

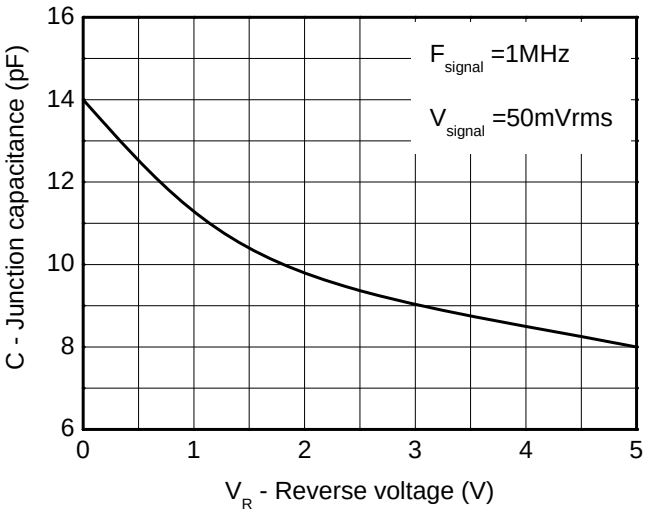


IEC61000-4-2 waveform

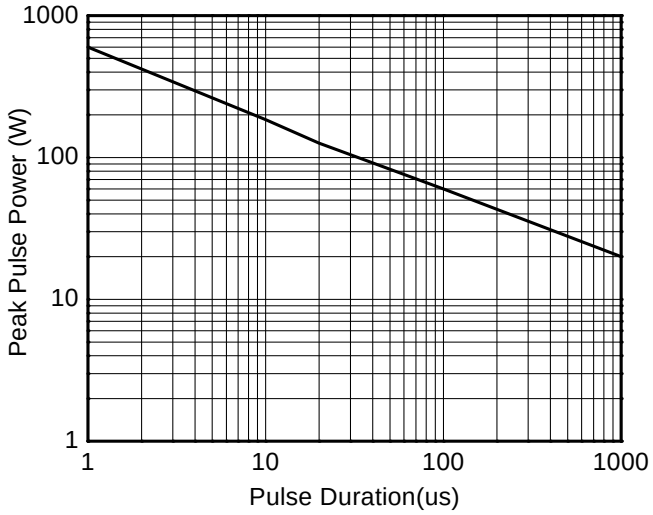
Typical characteristics (Ta=25°C, unless otherwise noted)



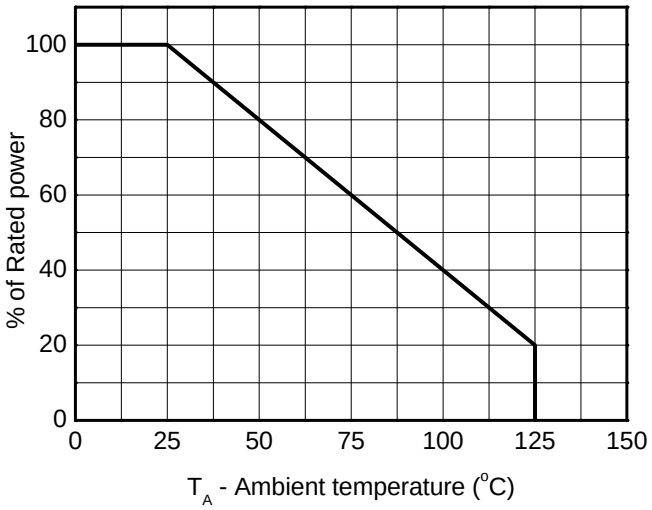
Clamping voltage vs. Peak pulse current



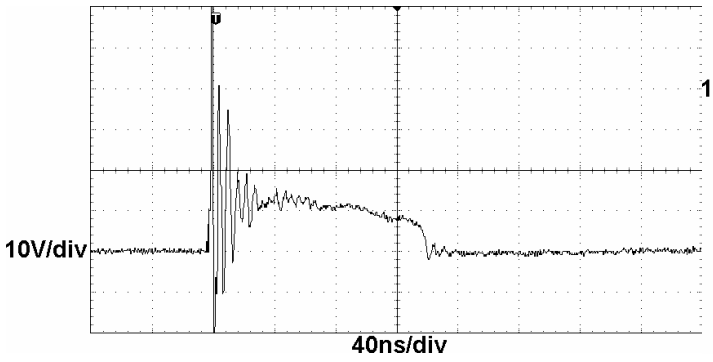
Capacitance vs. Reveres voltage



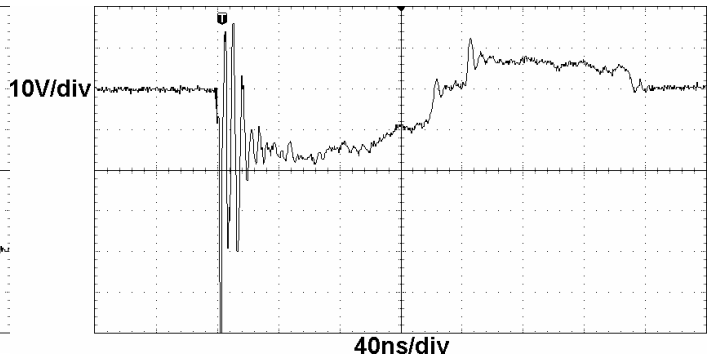
Non-Repetitive Peak Pulse Power vs. Pulse time



Power derating vs. Temperature



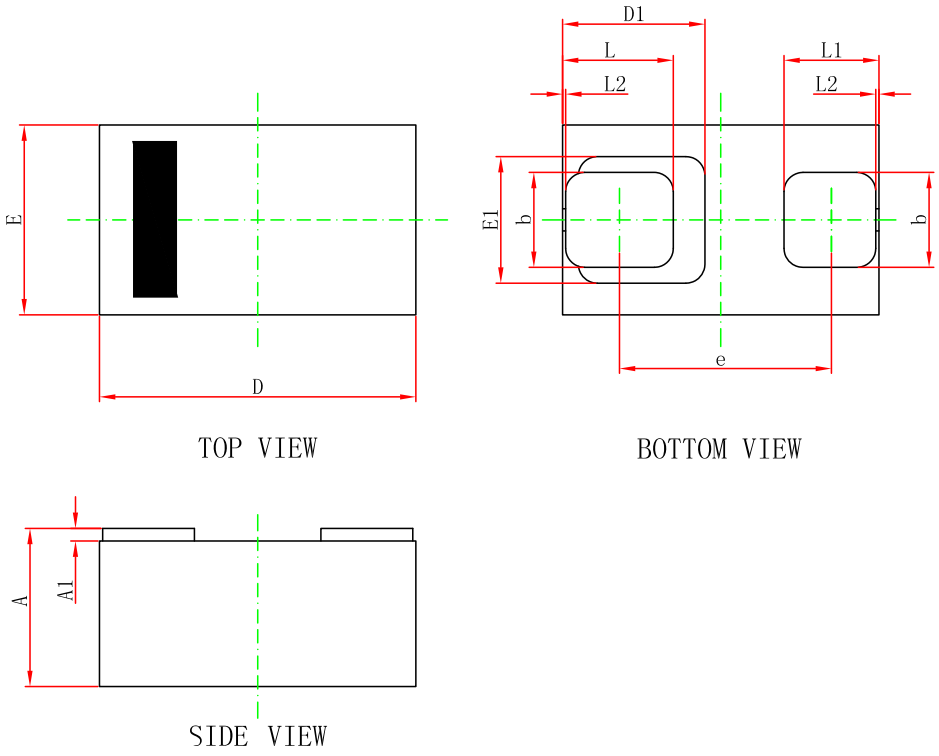
ESD clamping voltage
(IEC61000-4-2 +8kV contact)



ESD clamping voltage
(IEC61000-4-2 -8kV contact)

Package outline dimensions

FBP-02C



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)