

ESD9NS5V

2-Lines Bidirectional Transient Voltage Suppressors

Descriptions

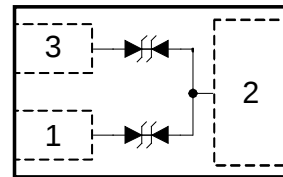
The ESD9NS5V is a transient voltage suppressors (TVS) which provide a very high level protection for sensitive electronic components that may be subjected to electrostatic discharge (ESD). It is designed to replace multilayer varistors (MLV) in consumer equipments applications such as mobile phone, notebook, PAD, STB, LCD TV etc.

The ESD9NS5V was past ESD transient voltage up to $\pm 30\text{kV}$ (contact) according to IEC61000-4-2 and withstand peak current up to 9A for 8/20us pulse according to IEC61000-4-5.

The ESD9NS5V is available in DFN1006-3L package.
Standard products are Pb-free and Halogen-free.



DFN1006-3L



Pin configuration (Top view)



DFN1006-3L

Features

- Working voltage : 5V
- Peak power (tp=8/20us) : 99W Max.
- Peak current (tp=8/20us) : 9A Max.
- Transient protection
IEC61000-4-2, Level 4 : ±30kV air
: ±30kV contact
- Low clamping voltage
- Low leakage current
- Small package

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

Applications

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

Order information

Device	Package	Shipping
ESD9NS5V-3/TR	DFN1006-3L	10000/Tape&Reel

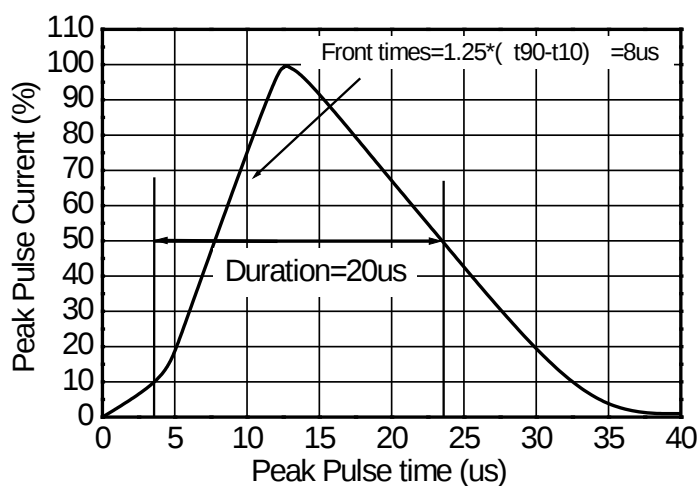
ESD9NS5V

Absolute maximum ratings

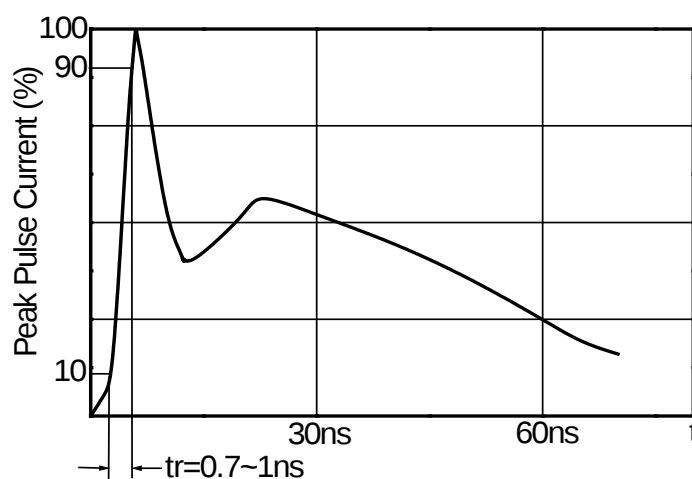
Parameter	Symbol	Rating	Unit
Peak pulse power (tp=8/20us)	Ppk	99	W
Peak pulse current (tp=8/20us)	Ipp	9	A
ESD voltage IEC61000-4-2 air	V _{ESD}	±30	kV
ESD voltage IEC61000-4-2 contact		±30	
Junction temperature	T _J	125	°C
Operating temperature	T _{OP}	-40~85	°C
Lead temperature	T _L	260	°C
Storage temperature	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}				5.0	V
Reverse leakage current	I _R	V _{RWM} =5V			1	uA
Reverse breakdown voltage	V _{BR}	I _T =1mA	5.8	6.8	8.1	V
Clamping voltage	V _C	Ipp=1A tp=8/20us			6	V
		Ipp=9A tp=8/20us			11	V
Junction capacitance	C _J	F=1MHz, V _R =0V		24	30	pF



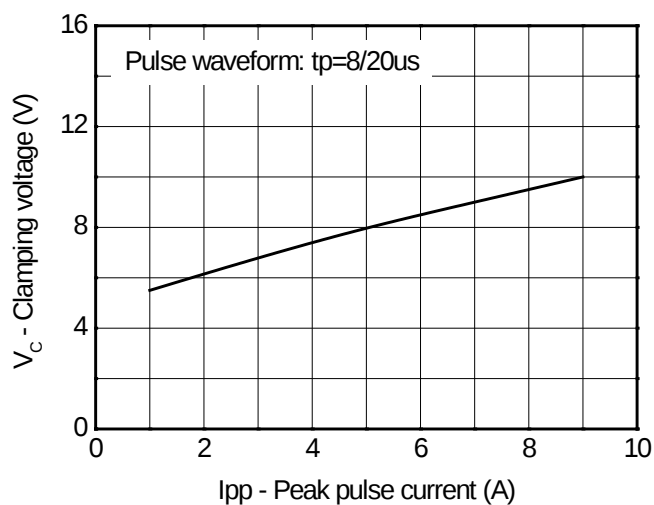
8/20us waveform



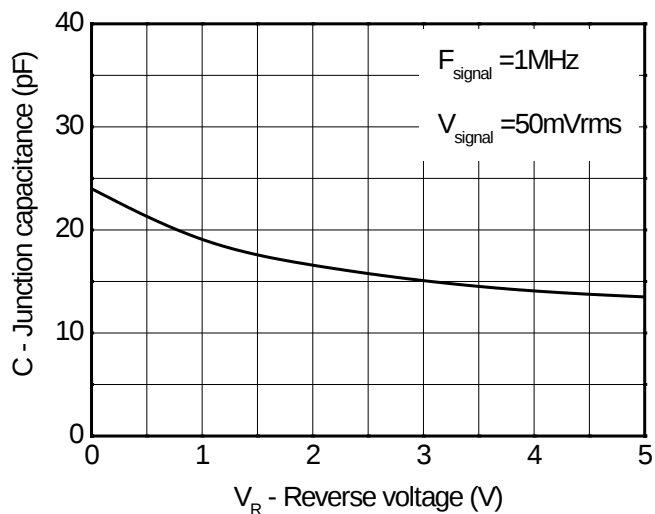
IEC61000-4-2 waveform

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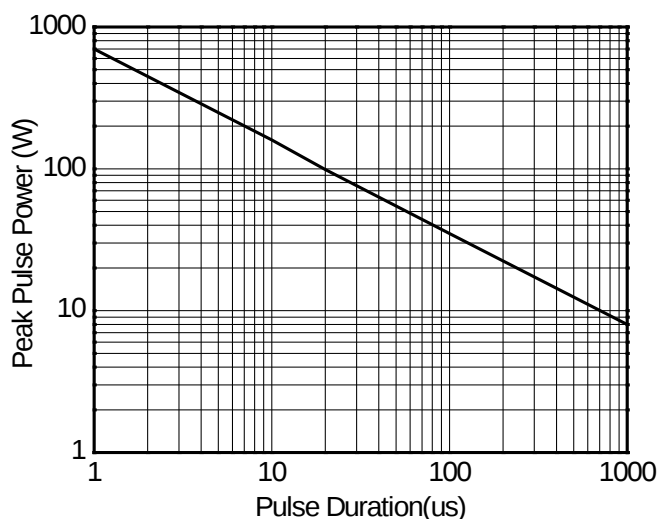
Typical characteristics (Ta=25°C, unless otherwise noted)



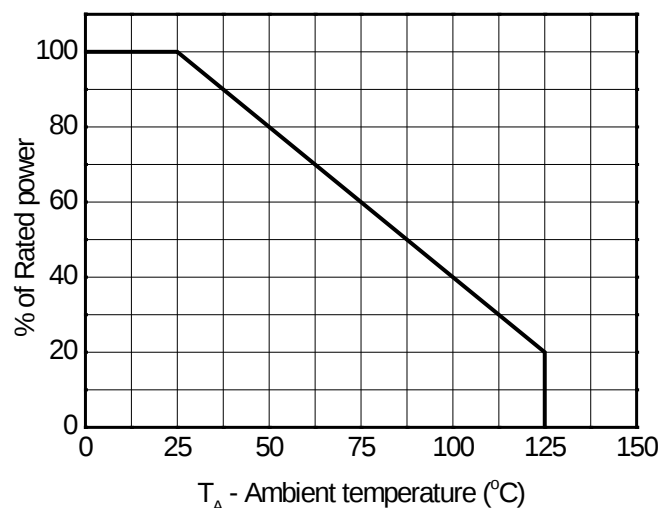
Clamping voltage vs. Peak pulse current



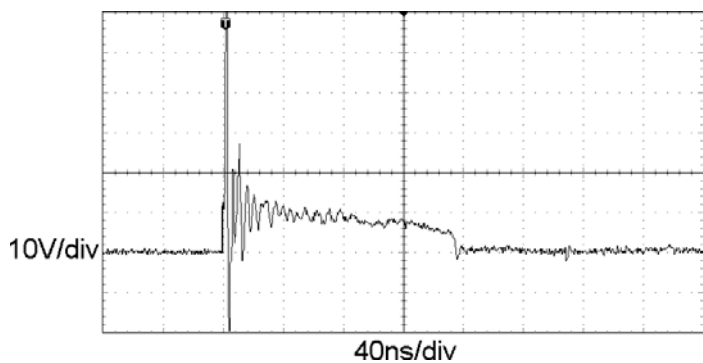
Capacitance vs. Reverse voltage



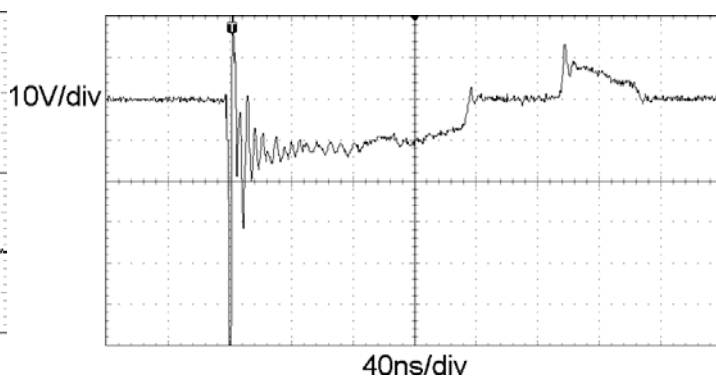
Non-Repetitive Peak Pulse Power vs. Pulse time



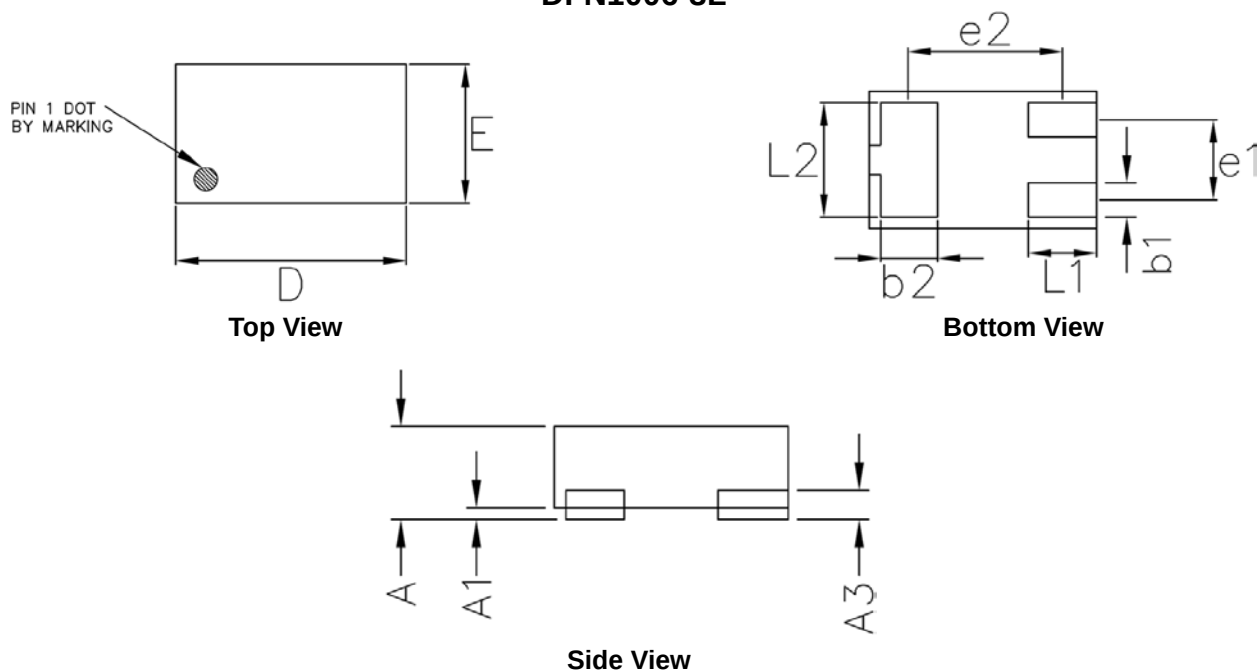
Power derating vs. Temperature



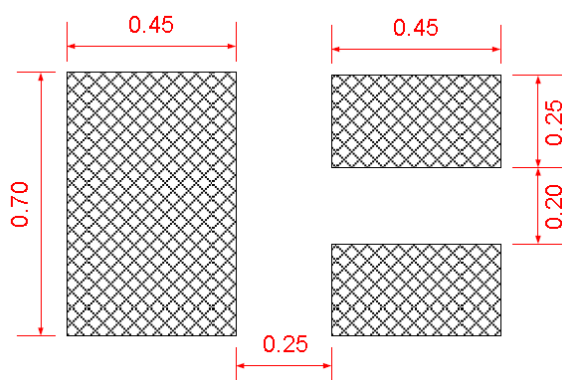
ESD clamping voltage
(IEC61000-4-2 +8kV contact)



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

ESD9NS5V
Package outline dimensions
DFN1006-3L


Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	>0.40	-	0.40
A1	0.00	-	0.05
A3	0.125REF		
D	0.95	1.00	1.05
E	0.55	0.60	0.65
b1	0.10	0.15	0.20
b2	0.20	0.25	0.30
L1	0.20	0.30	0.40
L2	0.40	0.50	0.60
e1	0.35BSC		
e2	0.675BSC		

Recommend PCB Layout (Unit: mm)

Notes:

This recommended land pattern is for reference purposes only. Please consult your manufacturing group to ensure your PCB design guidelines are met.