

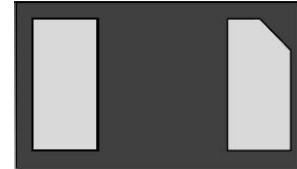
Transient Voltage Suppressors Array for ESD Protection

SE24N9W11GK

Features

- ◆ Working voltage: 24V
- ◆ Low clamping voltage
- ◆ Low leakage current
- ◆ RoHS compliant
- ◆ Protects one I/O or power line

DFN1610-2L



Applications

- ◆ Cellular phones
- ◆ Personal digital assistants (PDA' s)
- ◆ Laptop computers
- ◆ Digital cameras

PIN Configuration



Mechanical Characteristics

- ◆ DFN1610-2L package
- ◆ Molding compound flammability rating: UL 94V-0
- ◆ Quantity per reel: 3,000pcs
- ◆ Lead finish: lead free

Protection Solution To Meet

- ◆ IEC61000-4-2 (ESD)±30kV (air), ±30kV (contact)
- ◆ IEC61000-4-4 (EFT) 40A (5/50ns)
- ◆ IEC61000-4-5 (Lightning) 30A (8/20µs)

Absolute Maximum Rating (T_A=25°C, RH=45%-75%, unless otherwise noted)

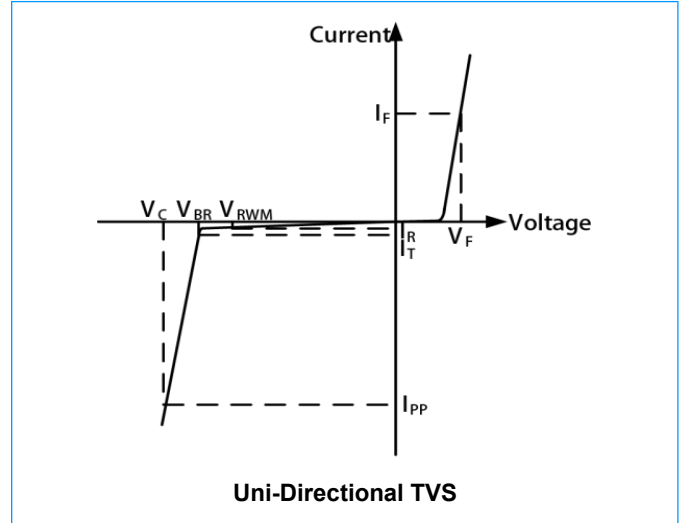
Symbol	Parameter	Value	Units
T _{STG}	Storage Temperature Range	-55 to +150	°C
T _J	Operating Temperature Range	-40 to +85	°C
T _L	Lead soldering temperature	260 (10 sec.)	°C
V _{ESD}	ESD per IEC 61000-4-2(Air)	±30	KV
	ESD per IEC 61000-4-2 (Contact)	±30	

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I-V Curve Characteristics

Symbol	Parameter
V_{RWM}	Nominal Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Reverse Breakdown Voltage @ I_T
I_T	Test Current for Reverse Breakdown
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Maximum Peak Pulse Current
C_{ESD}	Parasitic Capacitance
V_R	Reverse Voltage
f	Small Signal Frequency
I_F	Forward Current
V_F	Forward Voltage @ I_F



Electrical Characteristics (@ $T_A=25^\circ\text{C}$ Unless Otherwise Specified)

Parameter	Symbol	Test Condition	Minimum	Typical	Maximum	Units
Reverse Working Voltage	V_{RWM}	--	--	--	24	V
Reverse Breakdown Voltage	V_{BR}	$I_T = 1\text{mA}$	26	--	29	V
Reverse Leakage Current	I_R	$V_{RWM}=24\text{V}$	--	--	0.1	μA
Peak Pulse Current	I_{PP}	$t_p=8/20\mu\text{s}$	--	--	30	A
Clamping Voltage	V_C	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$	--	29	--	V
		$I_{PP}=30\text{A}, t_p=8/20\mu\text{s}$	--	39	--	
Junction Capacitance	C_J	$V_{RWM}=0\text{V}, f=1\text{MHz}$	--	200	--	pF

Characteristic Curves

Fig 1. 8/20 μs Waveform per IEC61000-4-5

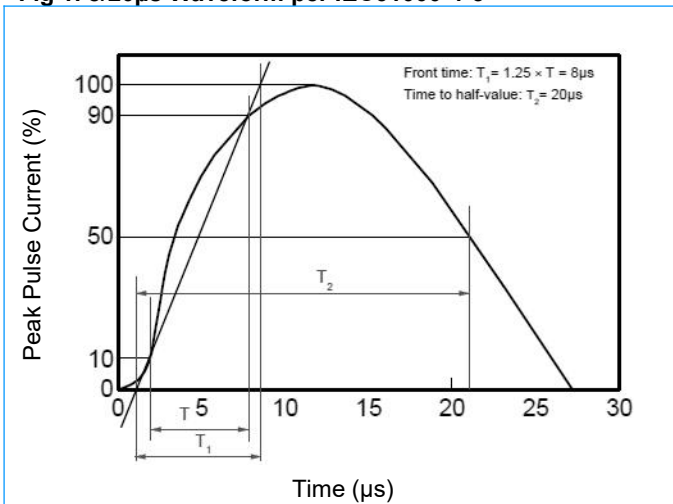
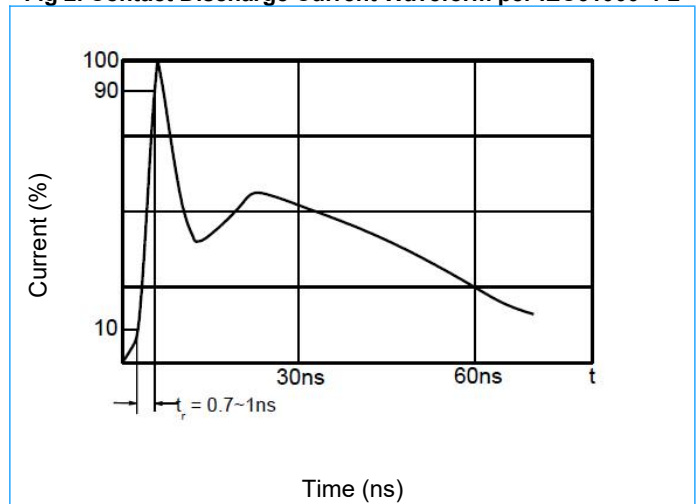


Fig 2. Contact Discharge Current Waveform per IEC61000-4-2



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Characteristic Curves (Continue)

Fig 3. ESD Clamping Voltage Screenshot
Positive 8 kV Contact per IEC61000-4-2

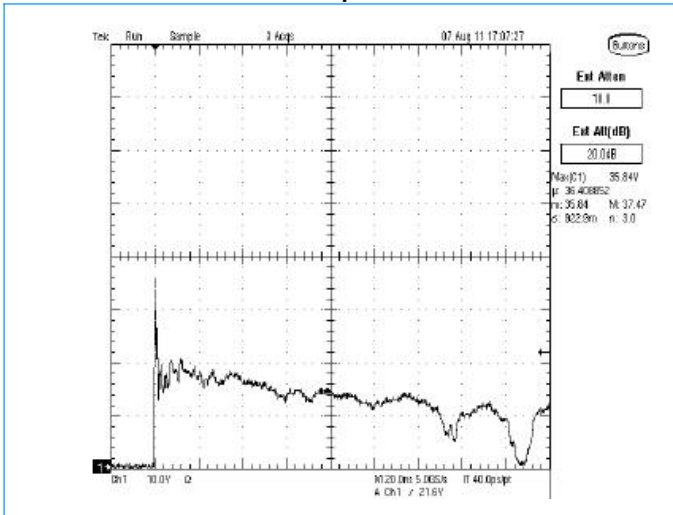
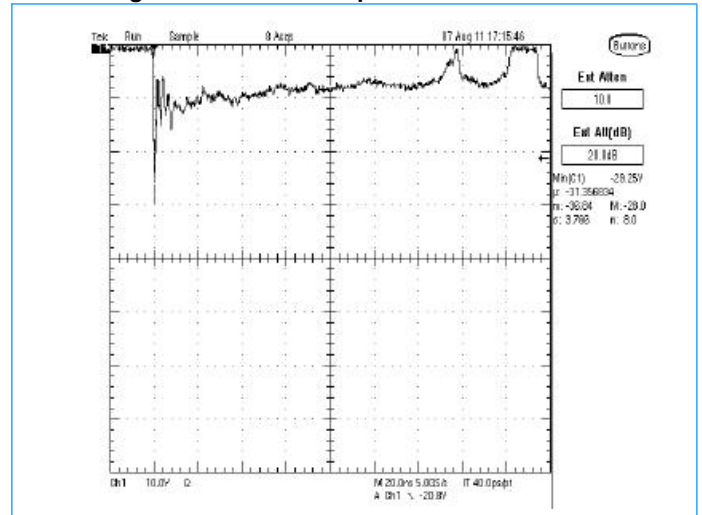
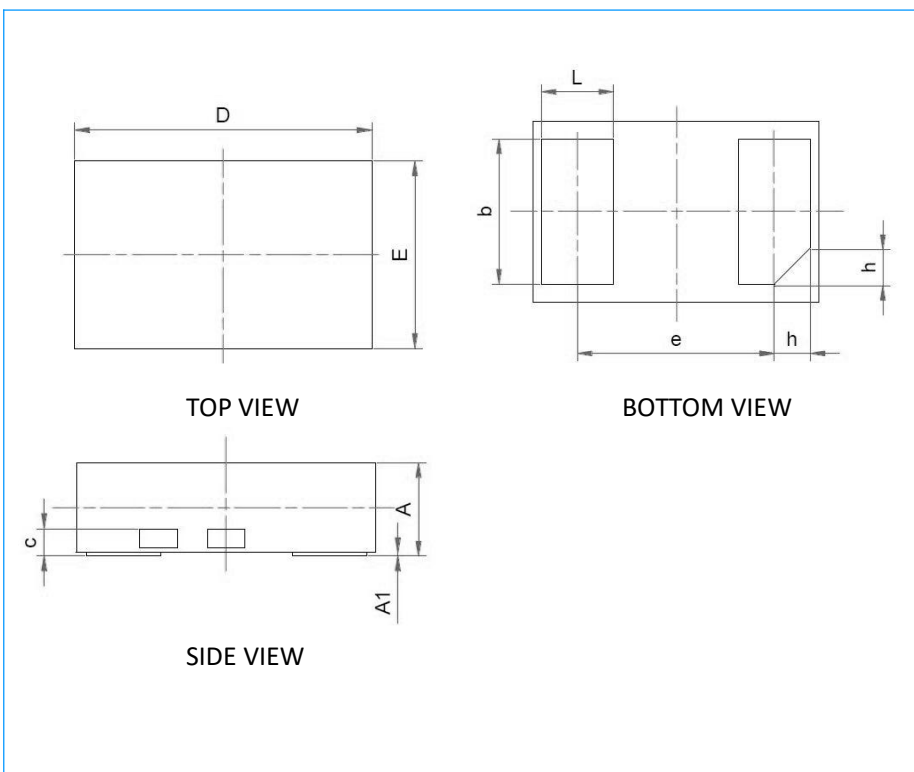


Fig 4. ESD Clamping Voltage Screenshot
Negative 8 kV Contact per IEC61000-4-2



DFN1610-2L Package Outline & Dimensions



Symbol	Dimensions in millimeter		
	Min.	Typ.	Max.
A	0.50	0.55	0.60
A1	0.00	0.02	0.05
c	0.203 Ref.		
b	0.75	0.80	0.85
L	0.35	0.40	0.45
D	1.55	1.60	1.65
E	0.95	1.00	1.05
e	1.10 BSC		
h	0.20 Ref.		

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