

# Transient Voltage Suppressors for ESD Protection

## SE12N6R01GK

### Features

- ◆ Working voltage : 12V
- ◆ Low capacitance: 6.0 pF (Typical)
- ◆ Low leakage current: 1.0 $\mu$ A @  $V_{RWM}$
- ◆ Low clamping voltage
- ◆ Response Time is < 1 ns

### DFN1006



### Applications

- ◆ Cellular phones audio
- ◆ MP3 players
- ◆ Digital cameras
- ◆ Portable applications

### Pin Configuration



### Mechanical Characteristics

- ◆ DFN1006 Package
- ◆ Molding Compound Flammability Rating : UL 94V-0
- ◆ Quantity Per Reel : 10,000pcs
- ◆ Reel Size : 7 inch

### Absolute Maximum Rating

Symbol	Parameter	Value	Units
$P_{PK}$	Peak Pulse Power ( $t_P=8/20\mu S$ )	88	W
$I_{PP}$	Peak Pulse Current ( $t_P=8/20\mu S$ )	3.5	A
$T_{STG}$	Storage Temperature Range	-55 to +150	$^{\circ}C$
$T_{OP}$	Operating Temperature Range	-55 to +150	$^{\circ}C$
$V_{ESD}$	ESD per IEC 61000-4-2(Air)	$\pm 30$	KV
	ESD per IEC 61000-4-2 (Contact)	$\pm 30$	

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Electrical Characteristics (@T<sub>A</sub>=25°C, unless otherwise specified)

Symbol	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V <sub>RWM</sub>	--	--	--	12	V
Reverse Breakdown Voltage	V <sub>BR</sub>	I <sub>T</sub> = 1mA	13.3	--	16.0	V
Reverse Leakage Current	I <sub>R</sub>	V <sub>RWM</sub> =12V	--	--	1.0	μA
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> =1A, t <sub>p</sub> =8/20μs	--	19.0	--	V
		I <sub>PP</sub> =3.5A, t <sub>p</sub> =8/20μs	--	22.0	--	V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> =0V, f=1MHz	--	6.0	--	pF

### Characteristic Curves

Fig1. 8/20μs Waveform per IEC61000-4-5

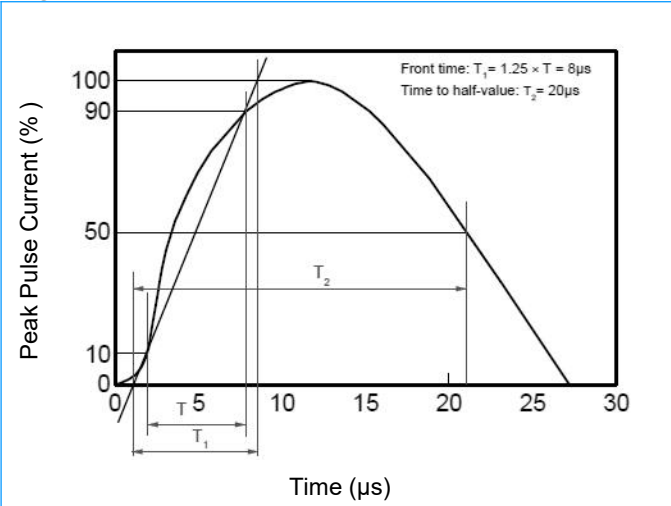


Fig2. Contact Discharge Current Waveform per IEC61000-4-2

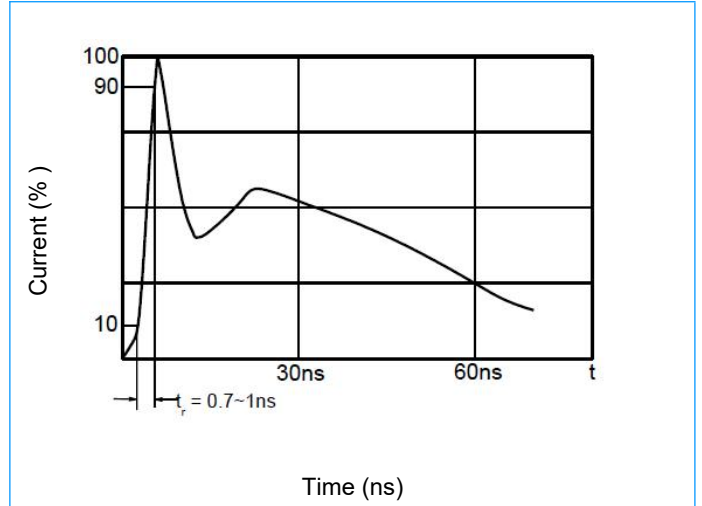


Fig3. ESD Clamping Voltage Screenshot Positive 8 kV Contact per IEC61000-4-2

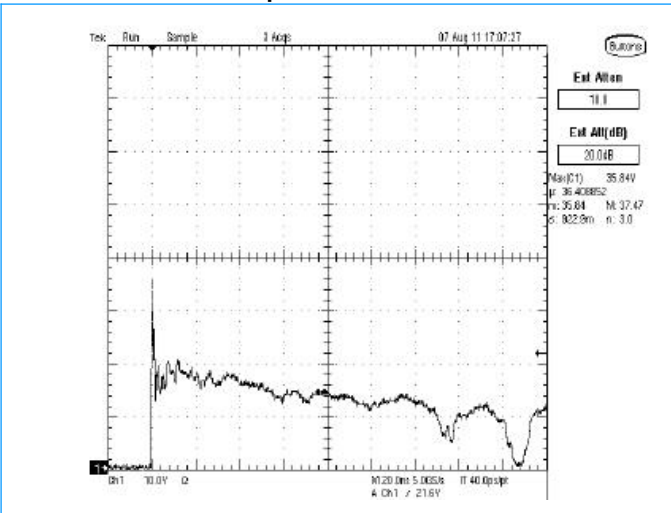
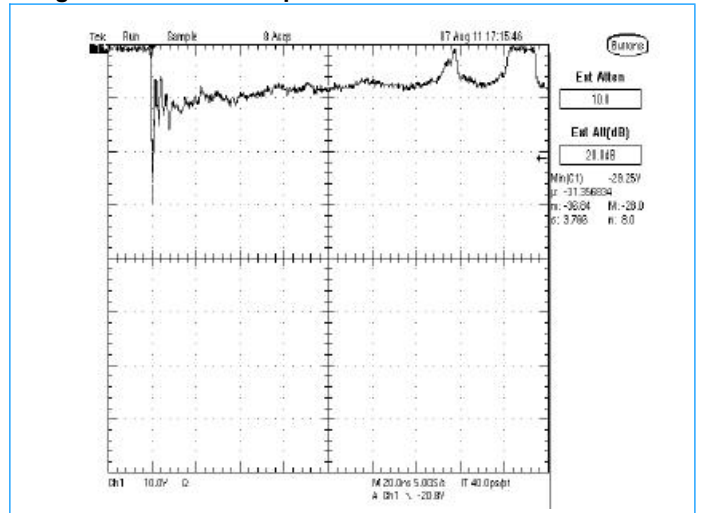


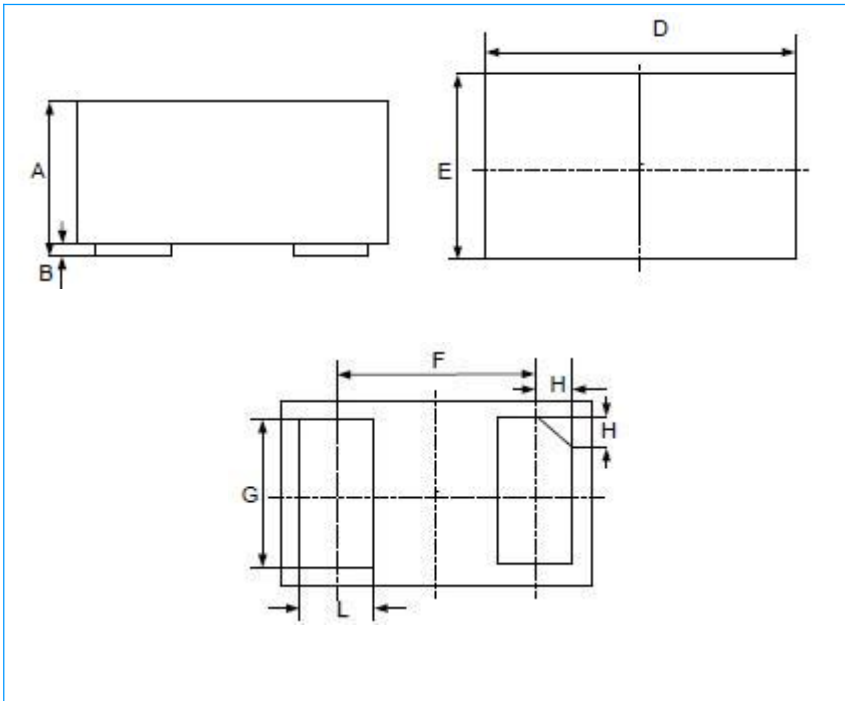
Fig4. ESD Clamping Voltage Screenshot Negative 8 kV Contact per IEC61000-4-2



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### DFN1006 Package Outline & Dimensions



Symbol	Dimensions in millimeter	
	Min.	Max.
<b>A</b>	0.34	0.55
<b>B</b>	0.00	0.05
<b>D</b>	0.95	1.08
<b>E</b>	0.55	0.68
<b>F</b>	0.65 (Typ.)	
<b>G</b>	0.40	0.60
<b>H</b>	0.07	0.17
<b>L</b>	0.20	0.30