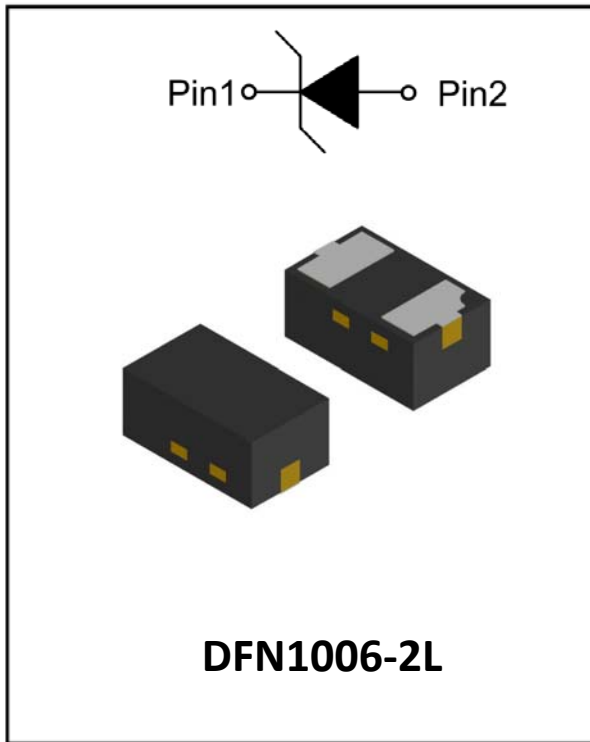


## 1-Line, Uni-directional, Transient Voltage Suppressor



### Features

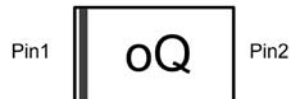
- Ultra small package
- Stand-off voltage: 24V Max
- Transient protection for each line according to  
IEC61000-4-2(ESD):  $\pm 30\text{kV}$  (contact)  
IEC61000-4-4 (EFT): 80A (5/50ns)  
IEC61000-4-5(surge): 12A (8/20 $\mu\text{s}$ )
- Low leakage current
- Low clamping voltage
- RoHS Compliant

### Applications

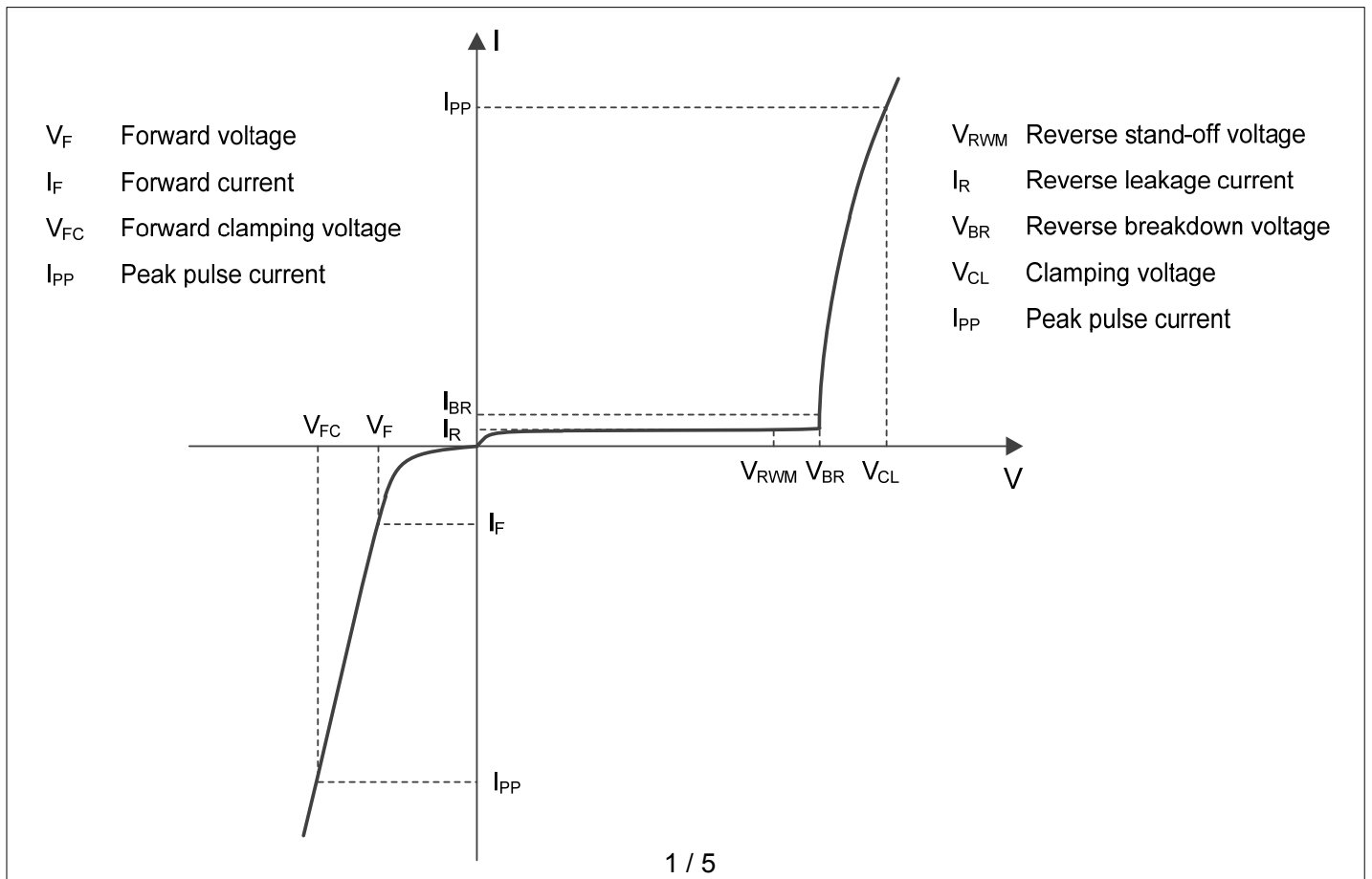
- Cellular handsets
- Tablets
- Laptops
- Other portable devices
- Network communication devices

### Mechanical Characteristics

- Package: DFN1006-2L
- Case Material: "Green" Molding Compound.
- Moisture Sensitivity: Level 3 per J-STD-020
- Marking Information: See Below



### ■Definitions of electrical characteristics





# ESD24VLA

## ■Absolute Maximum Ratings (Ta=25°C unless otherwise specified)

PARAMETER	SYMBOL	Rating	UNIT
Peak pulse power ( $t_p = 8/20\mu s$ )	$P_{pk}$	550	W
Peak pulse current ( $t_p = 8/20\mu s$ )	$I_{PP}$	12	A
ESD according to IEC61000-4-2 air discharge	$V_{ESD}$	$\pm 30$	KV
ESD according to IEC61000-4-2 contact discharge		$\pm 30$	KV
Junction temperature	$T_J$	125	°C
Operating temperature	$T_{OP}$	-40~85	°C
Storage temperature	$T_{STG}$	-55~150	°C

## ■Electrical Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	$V_{RWM}$	V				24
Reverse leakage current	$I_R$	nA	$V_{RWM} = 24V$			100
Reverse breakdown voltage	$V_{BR}$	V	$I_{BR} = 1mA$	25	26.7	
Clamping voltage <sup>1)</sup>	$V_{CL}$	V	$I_{PP} = 16A, t_p = 100ns$		35	
Dynamic resistance <sup>1)</sup>	$R_{DYN}$	$\Omega$			0.5	
Clamping voltage <sup>2)</sup>	$V_{CL}$	V	$V_{ESD} = 8kV$		36	
Clamping voltage <sup>3)</sup>	$V_{CL}$	V	$I_{PP} = 1A, t_p = 8/20\mu s$		28	30
		V	$I_{PP} = 12A, t_p = 8/20\mu s$		44	46
Junction capacitance	$C_J$	pF	$V_R = 0V, f = 1MHz$		60	90

(1). TLP parameter:  $Z_0 = 50\Omega, t_p = 100ns, t_r = 2ns$ , averaging window from 60ns to 80ns.  $R_{DYN}$  is calculated from 4A to 16A.

(2). Contact discharge mode, according to IEC61000-4-2.

(3). Non-repetitive current pulse, according to IEC61000-4-5.

## ■Ordering Information (Example)

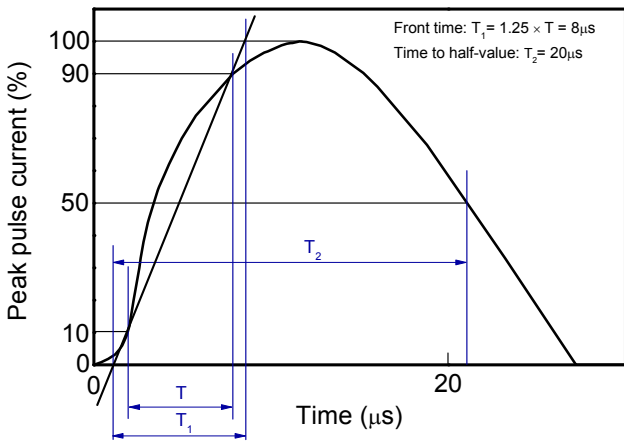
PREFERRED P/N	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD24VLA	Approximate 0.9	10000	100000	400000	Tae& reel



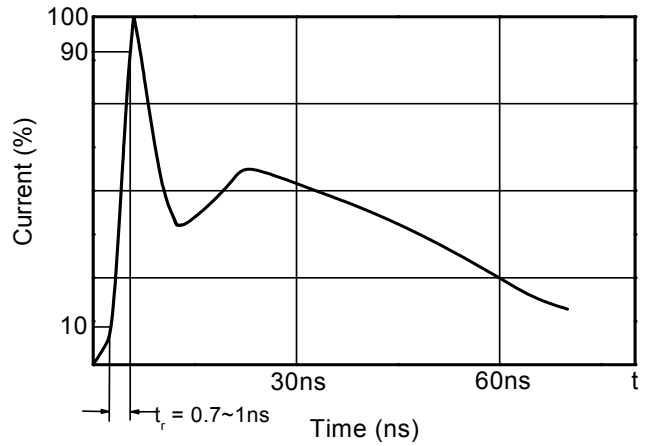
# ESD24VLA

## ■ Typical Performance Characteristics (Ta=25°C unless otherwise Specified)

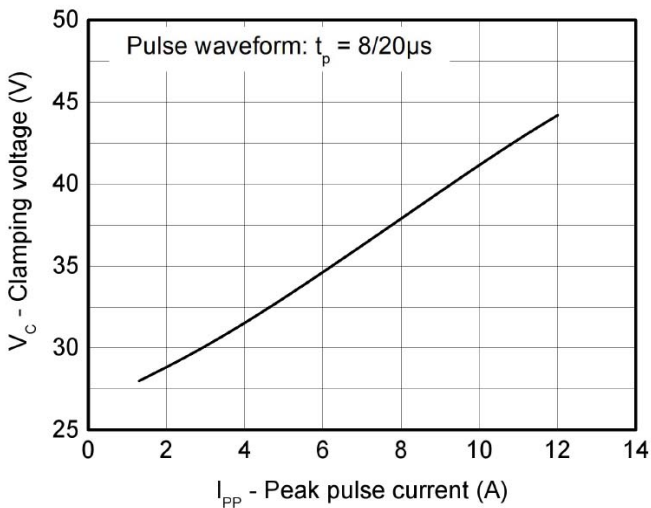
### 8/20μs waveform per IEC61000-4-5



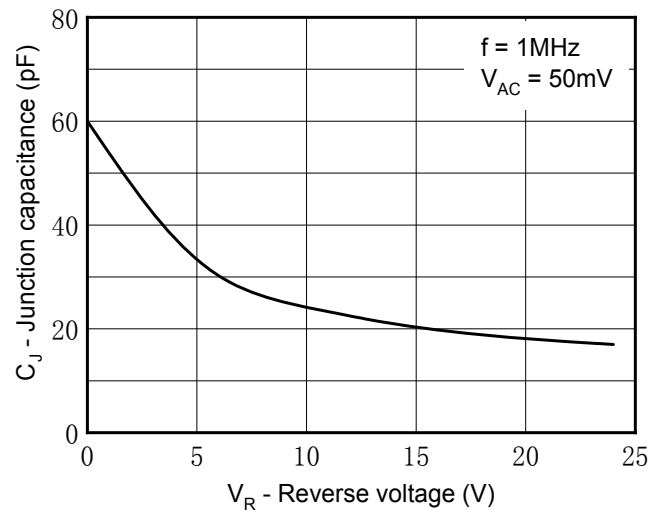
### Contact discharge current waveform per IEC61000-4-2



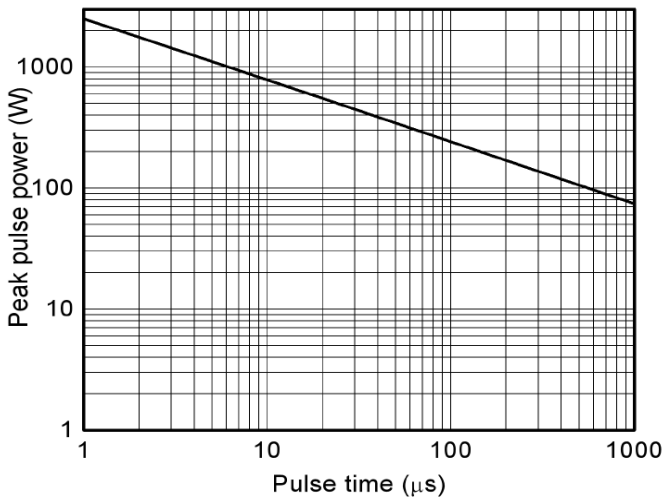
### Clamping voltage vs. Peak pulse current



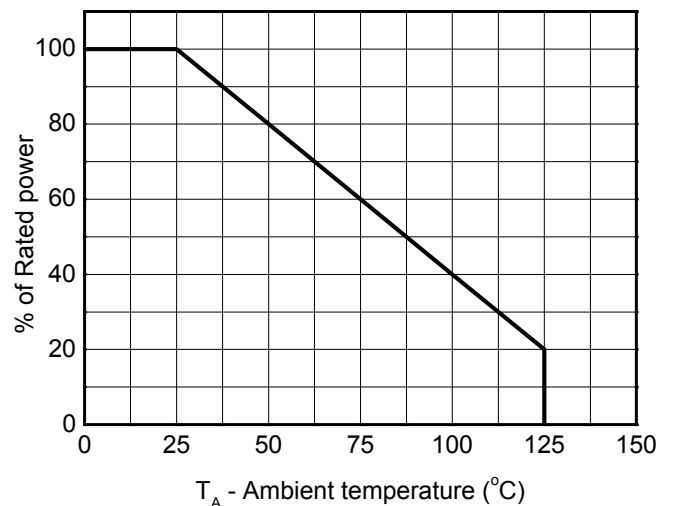
### Capacitance vs. Reverse voltage



### Non-repetitive peak pulse power vs. Pulse time

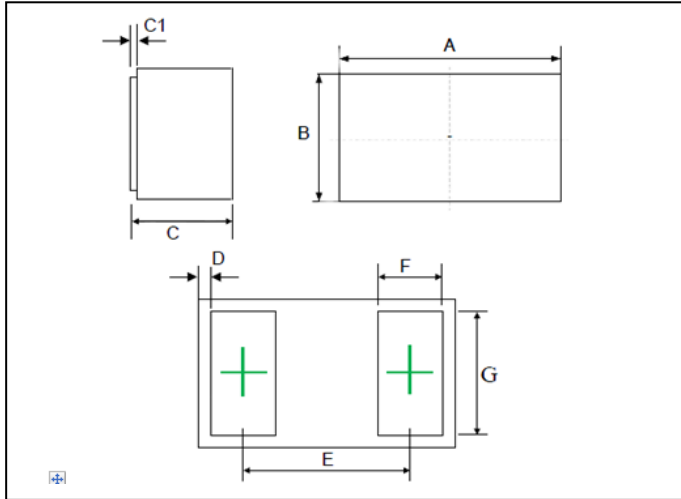


### Power derating vs. Ambient temperature



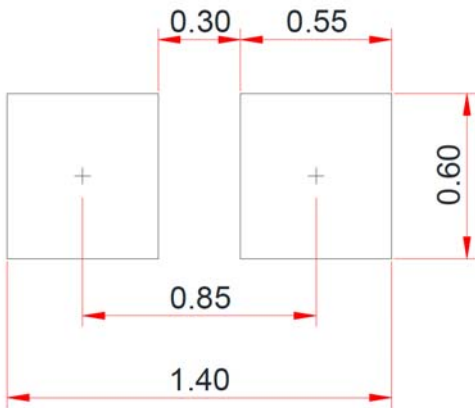


## ■ Outline Dimensions



Symbol	min. (mm)	Max. (mm)
A	0.95	1.05
B	0.55	0.65
C	0.4	0.5
C1		0.05
D	0.01	0.08
E		0.65
F	0.2	0.3
G	0.45	0.55

## ■ Recommend land pattern (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



## ESD24VLA

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