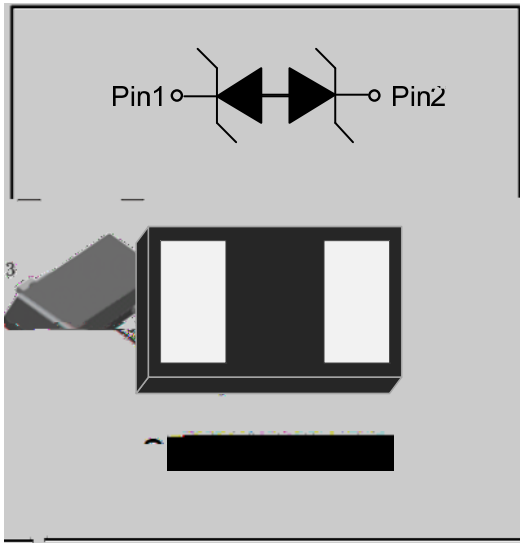


## 1-Line, Bi-directional, Transient Voltage Suppressor



### Features

- " Stand-off voltage:  $\pm 5.5V$  Max
- " Transient protection for each line according to IEC61000-4-2(ESD):  $\pm 30kV$  (contact)
- IEC61000-4-4 (EFT): 40A (5/50ns)
- IEC61000-4-5(surge): 6A (8/20 s)
- " Ultra-low capacitance:  $C_J = 10pF$  typ
- " Low leakage current
- " Low clamping voltage:  $V_{CL} = 11.0V$  typ. @  $I_{PP} = 16A$  (TLP)
- " Solid-state silicon technology

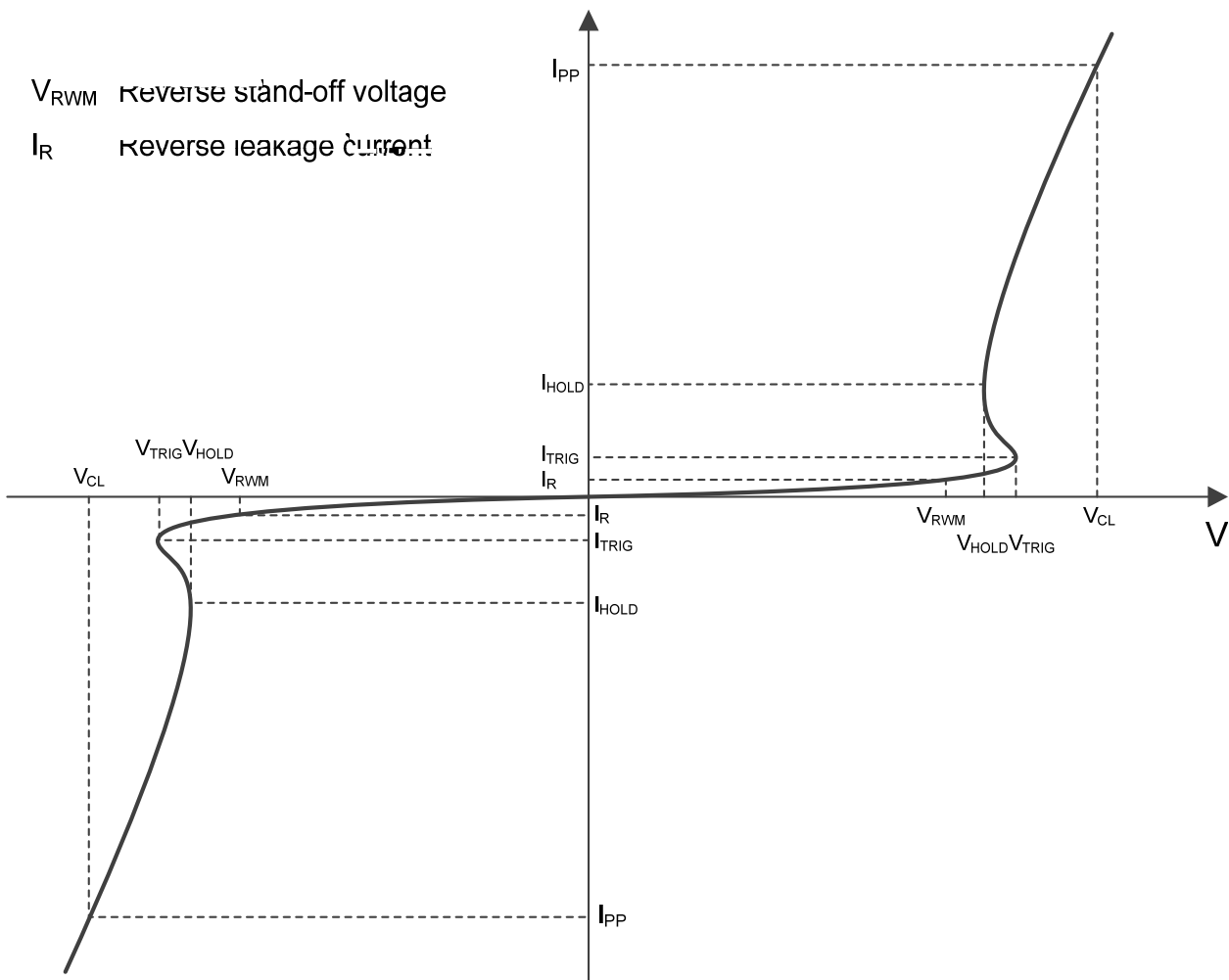
### Mechanical Data

- " **Package:** DFN1006-2L
- " **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- " **Polarity:** No marking on bi-directional types
- " **Marking:** 6A

### Definitions of electrical characteristics

$V_{RWM}$  Reverse stand-off voltage

$I_R$  Reverse leakage current





# ESD5V5LB

## Maximum Ratings

PARAMETER	SYMBOL	Rating	UNIT
Peak pulse power ( $t_p = 8/20$ s)	$P_{pk}$	72	W
Peak pulse current ( $t_p = 8/20$ s)	$I_{PP}$	6	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	$^{\circ}C$
Operating temperature	$T_{OP}$	-40~85	$^{\circ}C$
Storage temperature	$T_{STG}$	-55~150	$^{\circ}C$

## Electrical Characteristics $\dot{A}T_a=25$ Unless otherwise specified $\dot{A}$

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	$V_{RWM}$	V				$\pm 5.5$
Reverse leakage current	$I_R$	nA	$V_{RWM} = 5.5V$			100
Reverse breakdown voltage	$V_{BR}$	V	$I_{BR} = 1mA$	6.1	7	
Reverse holding voltage	$V_{HOLD}$	V	$I_{HOLD} = 50mA$	6.1	7	
Clamping voltage <sup>1)</sup>	$V_{CL}$	V	$I_{PP} = 16A, t_p = 100ns$		11.0	
Dynamic resistance <sup>1)</sup>	$R_{DYN}$				0.28	
Clamping voltage <sup>2)</sup>	$V_{CL}$	V	$V_{ESD} = 8kV$		11.0	
Clamping voltage <sup>3)</sup>	$V_{CL}$	V	$I_{PP} = 1A, t_p = 8/20$ s			8
		V	$I_{PP} = 6A, t_p = 8/20$ s			12
Junction capacitance	$C_J$	pF	$V_R = 0V, f = 1MHz$		10	13
		pF	$V_R = 2.5V, f = 1MHz$		8	11

(1). TLP parameter:  $Z_0 = 50$  ,  $t_p = 100ns$ ,  $t_r = 2ns$ , 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)

PREFERED P/N	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD5V5LB	Approximate 0.9	10000	100000	400000	Tape & reel



## vCharacteristics (Typical)

8/20  $\mu$ s waveform per IEC61000 # 5

Contact discharge current waveform per IEC61000 # 2

Clamping voltage vs. Peak pulse current

Capacitance vs. Reverse voltage

Non repetitive peak pulse power vs. Pulse time

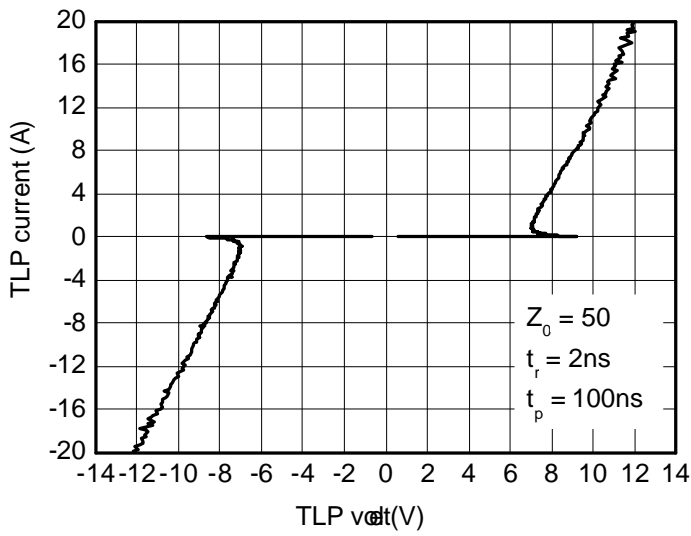


# ESD5V5LB

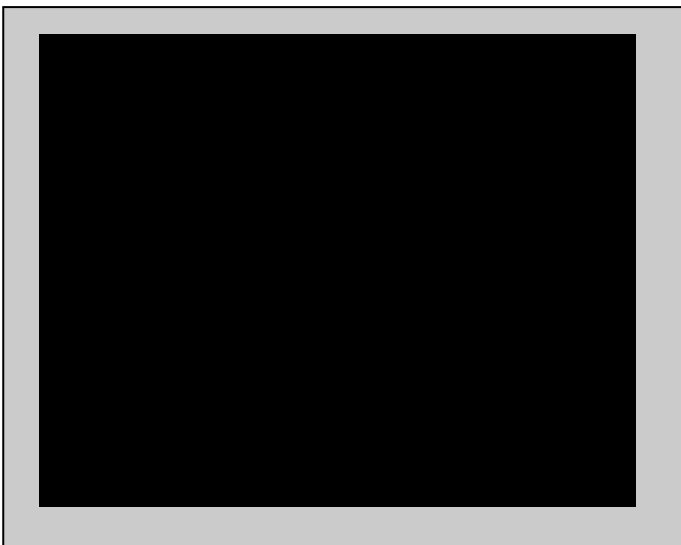
ESD clamping  
(+8kV contact discharge per IEC61000 # 2)

ESD clamping  
(-8kV contact discharge per IEC61000 # 2)

TLP Measurement



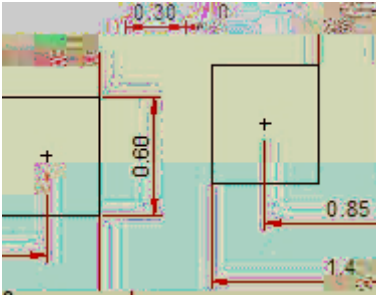
## Outline Dimensions



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## vRecommend 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



## ESD5V5LB

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