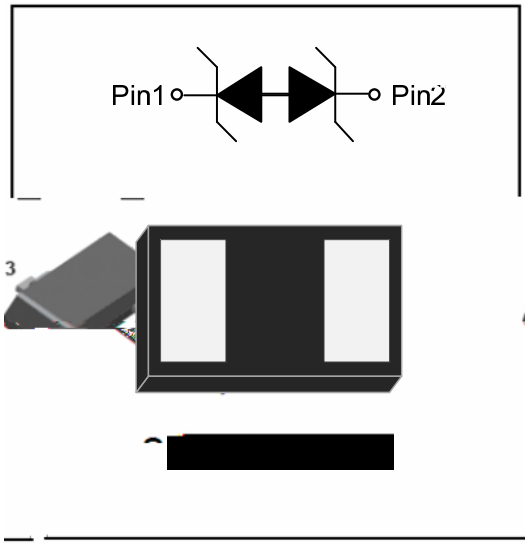
1-Line, Bi-directional, Transient Voltage Suppressor



Features

” Stand-off voltage: ±5.5V Max
” Transient protection for each line according to
IEC61000-4-2(ESD): ±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

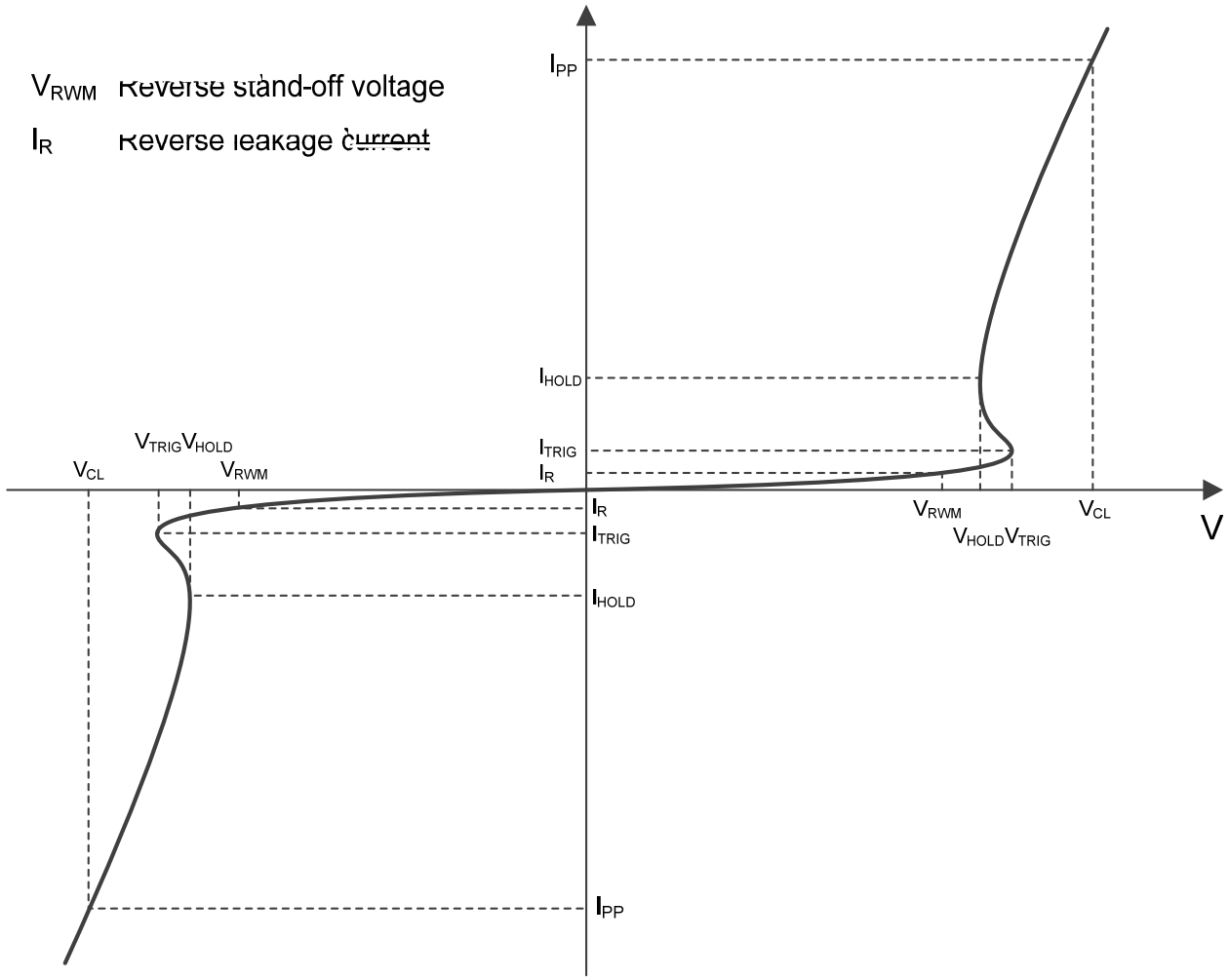
Mechanical Data

” **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



√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}	±30	KV
ESD according to IEC61000-4-2 contact discharge		±30	KV
Junction temperature	T_J	125	°C
Operating temperature	T_{OP}	-40~85	°C
Storage temperature	T_{STG}	-55~150	°C

√Electrical Characteristics ÄTa=25 Unless otherwise specified Å

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				±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 1)	V_{CL}	V	I_{PP} = 16A, t_p = 100ns		11.0	
Dynamic resistance 1)	R_{DYN}				0.28	
Clamping voltage 2)	V_{CL}	V	V_{ESD} = 8kV		11.0	
Clamping voltage 3)	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

v Characteristics (Typical)

8/20 s waveform per IEC61000 4 5

Contact discharge current waveform per IEC61000 4 2

Clamping voltage vs. Peak pulse current

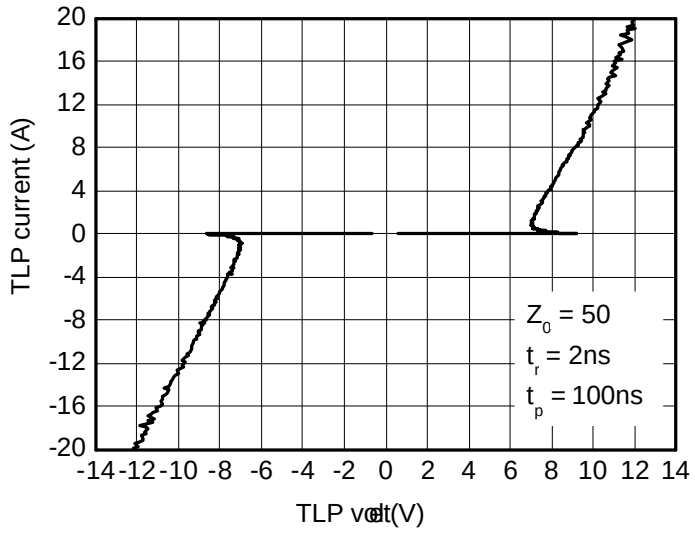
Capacitance vs. Reverse voltage

Non repetitive peak pulse power vs. Pulse time

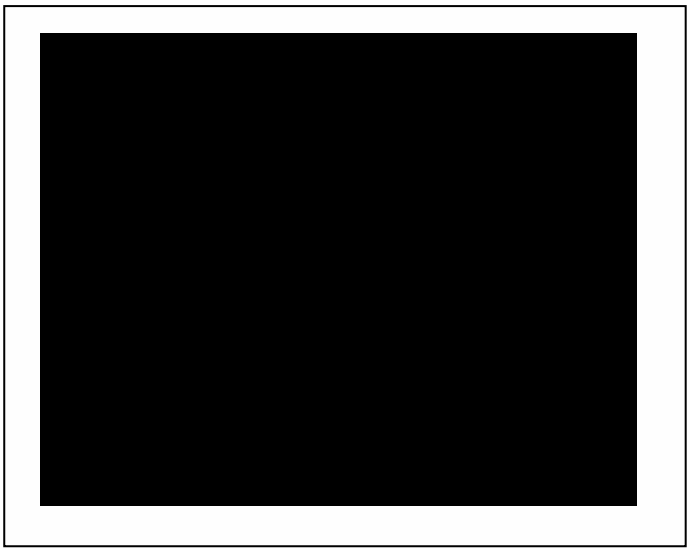
ESD clamping
(+8kV contact discharge per IEC61000 ñ 2)

ESD clamping
(8kV contact discharge per IEC61000 ñ 2)

TLP Measurement



v Outline Dimensions



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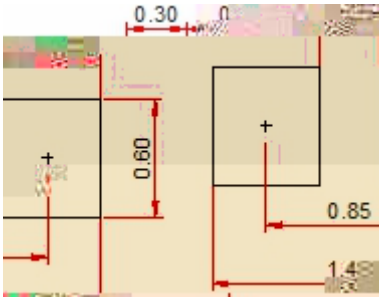
vRecommend land pattern (Unit:mm)



Notes:

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

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