

1- Line, Bi-directional, Transient Voltage Suppressor



DFN1006-2L-23

Features

- Stand-off voltage: 5V Max
- Transient protection for each line according to
IEC61000-4-2(ESD): $\pm 30\text{kV}$ (contact)
IEC61000-4-5(surge): 20A (8/20 μs)
- Low leakage current
- Ultra-low capacitance: $C_J = 30\text{pF}$ typ
- Low clamping voltage
 $V_{CL} = 7.8\text{V}$ typ. @ IPP = 16A (TLP)
- RoHS Compliant

Applications

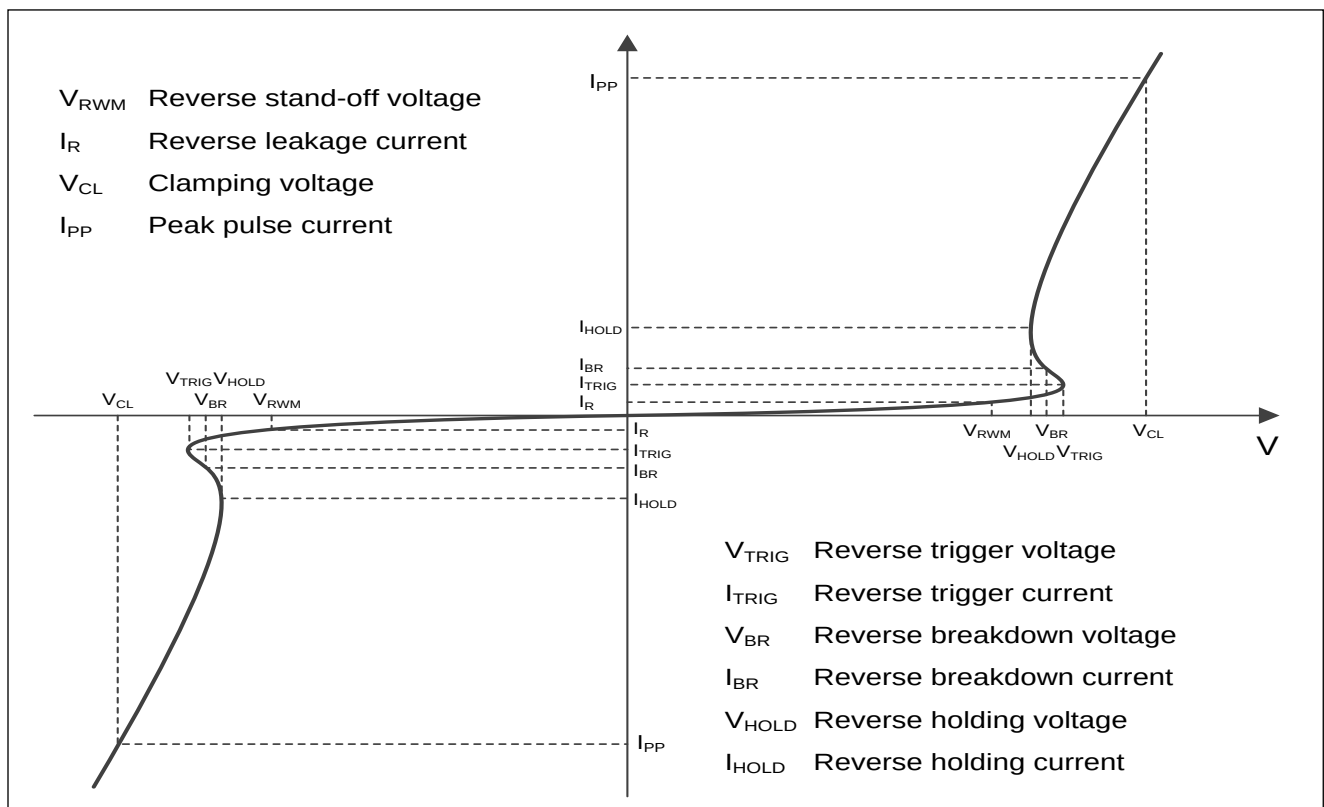
- Battery Line Protection
- Audio Line Protection
- Microphone Line Protection
- GPIO Protection

Mechanical Data

- Package: DFN1006-2L
- Case Material: "Green" Molding Compound
- Marking Information: See Below

5B

■Definitions of electrical characteristics





ESD5V0LBA7

■Maximum Ratings

PARAMETER	SYMBOL	LIMITS	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	300	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	20	A
ESD according to IEC61000-4-2 air discharge	V_{ESD}	± 30	KV
ESD according to IEC61000-4-2 contact discharge		± 30	
Junction temperature	T_J	-55~125	$^{\circ}C$
Storage temperature	T_{STG}	-55~150	$^{\circ}C$

■Electrical Characteristics ($T_a=25^{\circ}C$ Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				5
Reverse leakage current	I_R	μA	$V_{RWM} = 5V$,			0.5
Reverse breakdown voltage	$V_{(BR)}$	V	$I_T = 1mA$,	5.5		
Clamping voltage	V_{CL}	V	$I_{PP} = 1A$, $t_p = 8/20\mu s$			8
		V	$I_{PP} = 10A$, $t_p = 8/20\mu s$			9
		V	$I_{PP} = 20A$, $t_p = 8/20\mu s$			15
Junction capacitance	CJ	pF	$V_R = 0V$, $f = 1MHz$		30	

Notes:

- (1). TLP parameter: $Z_0 = 50\Omega$, $t_p = 100ns$, $t_r = 2ns$, averaging window from 60ns to 80ns. RDYN 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)

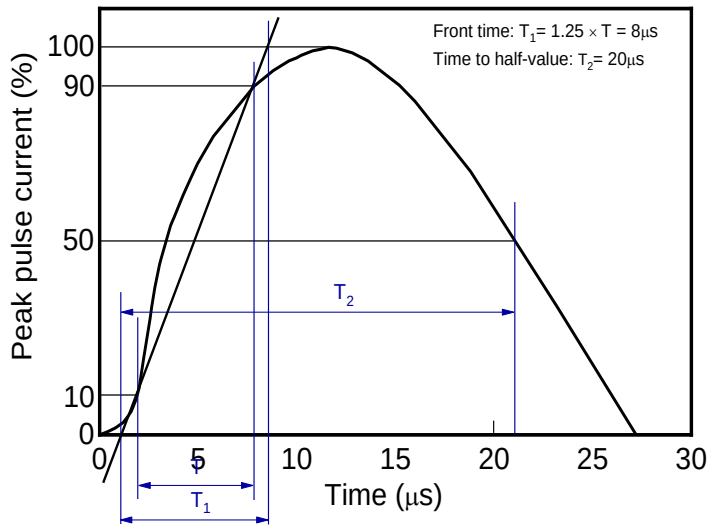
PREFERED P/N	PACKING CODE	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD5V0LBA7	F1	Approximate 0.9	10000	100000	400000	7 reel



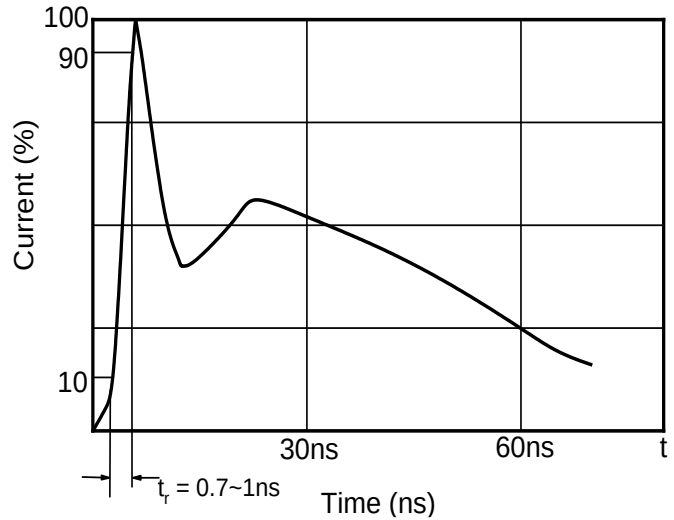
ESD5V0LBA7

■ Characteristics (Typical)

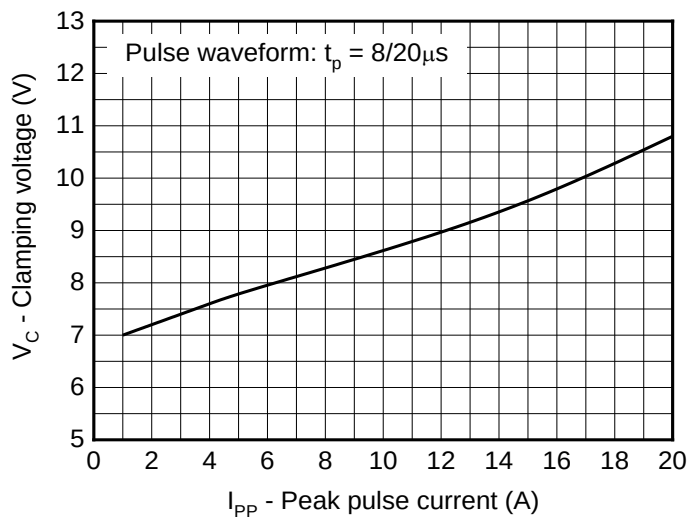
8/20 μ s waveform per IEC61000-4-5



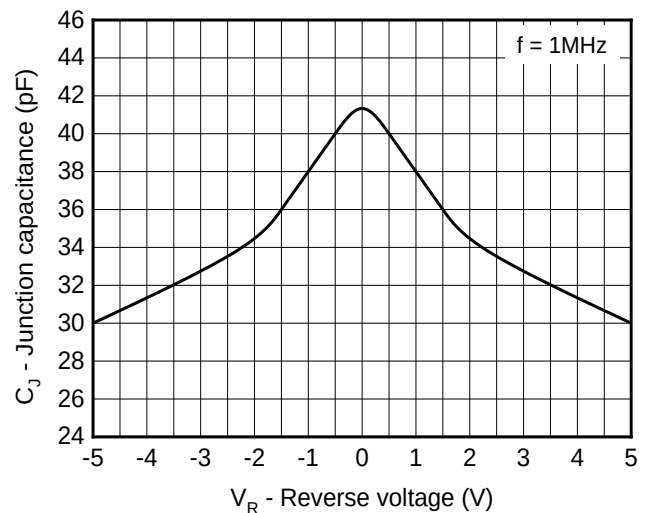
Contact discharge current waveform per IEC61000-4-2



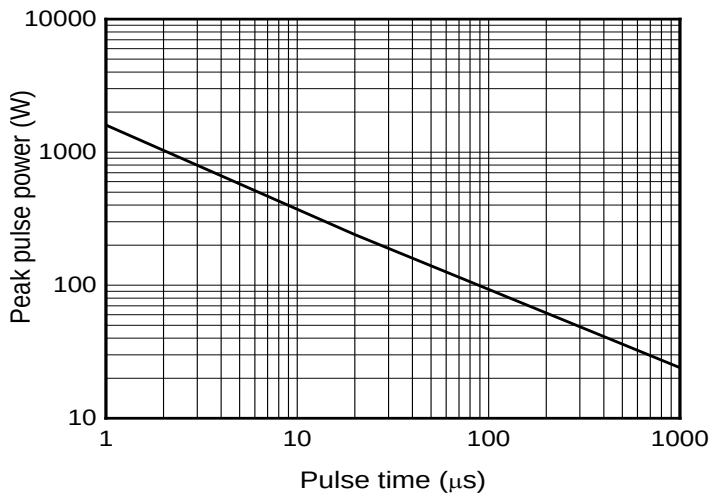
Clamping voltage vs. Peak pulse current



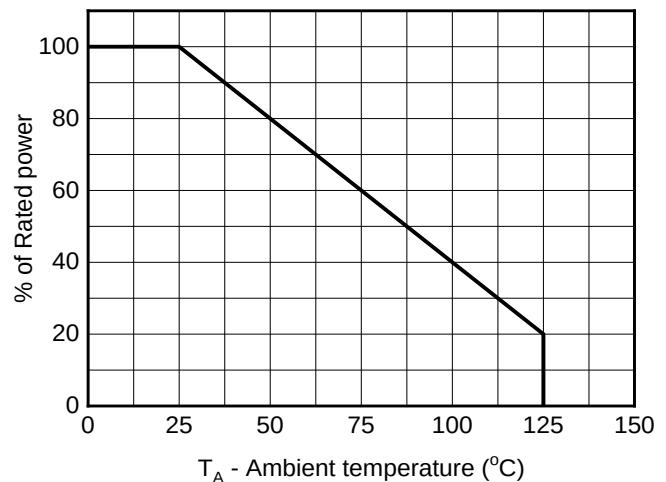
Capacitance vs. Reverse voltage



Non-repetitive peak pulse power vs. Pulse time

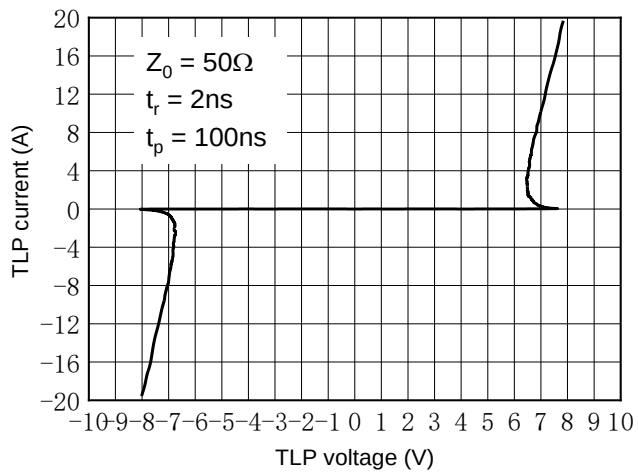


Power derating vs. Ambient temperature





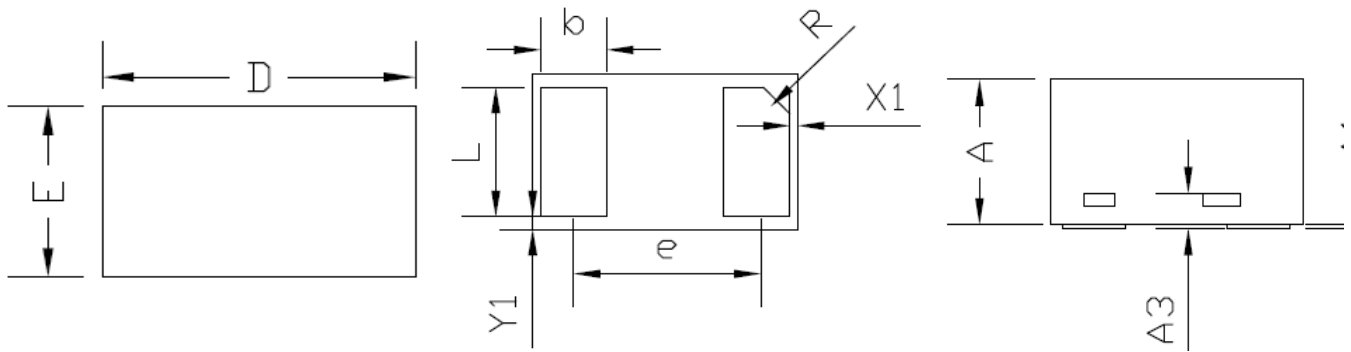
TLP Measurement





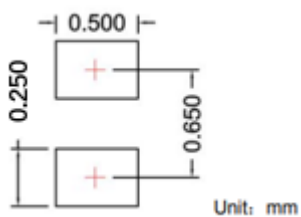
ESD5V0LBA7

■ Outline Dimensions



COMMON DIMENSION (MM)			
PKG	DFN1006-2L		
REF.	MIN.	NOM.	MAX
A	0.45	0.50	0.55
D	0.95	1.00	1.05
E	0.55	0.60	0.65
b	0.20	0.25	0.30
L	0.45	0.50	0.55
e	0.650		
R	0.07	0.10	0.13
X1	0.025	---	0.065
Y1	0.025	---	0.065
A1	0	---	0.015
A3	0.119	---	0.15

■ Soldering Footprint



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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