

1-Line, Bi-directional, Transient Voltage Suppressor



DFN1006-2L

Features

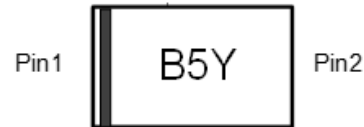
- Ultra small package
- Stand-off voltage: 3.3V Max
- Transient protection for each line according to IEC61000-4-2(ESD): $\pm 30\text{kV}$ (contact)
IEC61000-4-5(surge): 12A (8/20 μs)
- Ultra-low capacitance: $C_J = 0.2\text{ pF}$ typ
- Low leakage current
- Low clamping voltage
- RoHS Compliant

Applications

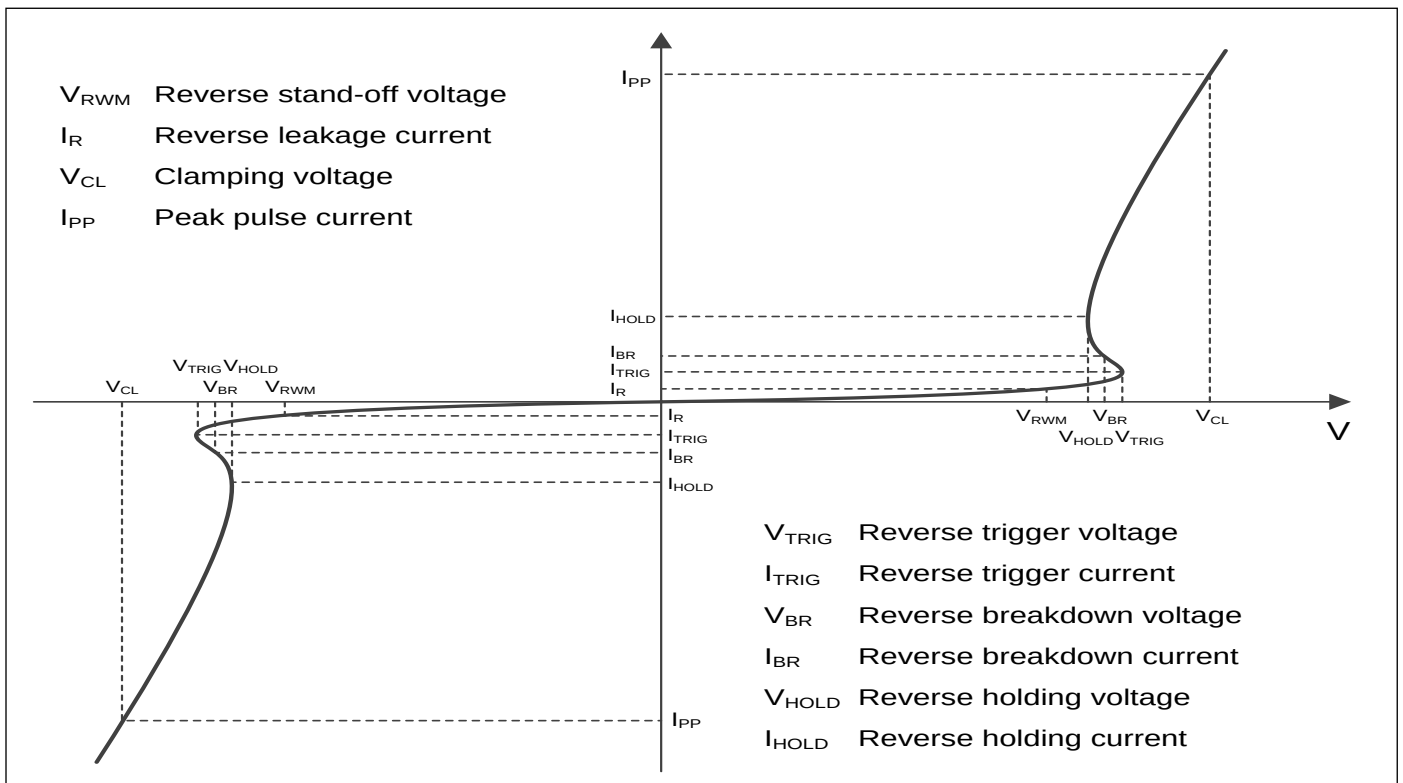
- USB 2.0 and USB 3.0
- HDMI 1.3, HDMI 1.4 and HDMI 2.0
- SATA and eSATA interface
- DVI
- IEEE 1394
- Portable Electronics and Notebooks
- Ethernet port: 10/100/1000 Mb/s
- Desktop and Notebooks PCs

Mechanical Characteristics

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



■Definitions of electrical characteristics





ESDULC3V3LBA3

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

PARAMETER	SYMBOL	Rating	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	168	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	12	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	-55~125	°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				3.3
Reverse leakage current	I_R	μA	$V_{RWM} = 3.3V$			0.1
Reverse breakdown voltage	V_{BR}	V	$I_{BR} = 1mA$	5.5		
Forward voltage	V_F	V	$I_T = 10mA$		0.7	
Clamping voltage ³⁾	V_{CL}	V	$I_{PP} = 1A, t_p = 8/20\mu s$		6.2	7.5
		V	$I_{PP} = 12A, t_p = 8/20\mu s$		12.2	14
Junction capacitance	C_J	pF	$V_R = 0V, f = 1MHz$		0.2	0.45

(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)

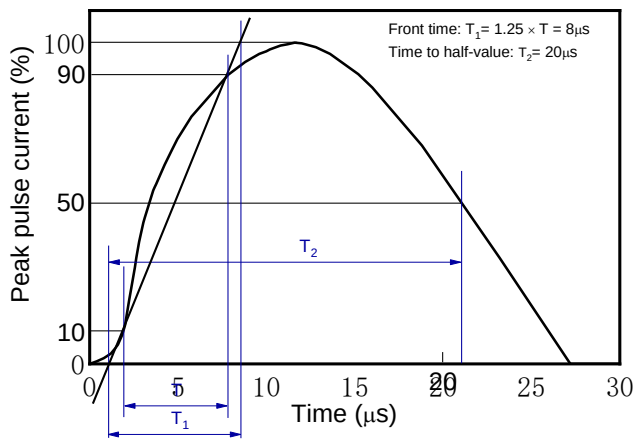
PREFERED P/N	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESDULC3V3LBA3	Approximate 0.9	10000	40000	400000	Tae& reel



ESDULC3V3LBA3

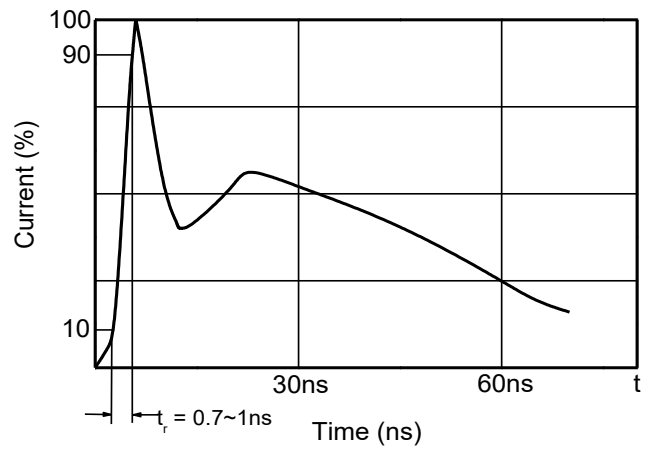
■ Typical Performance Characteristics (Ta=25°C unless otherwise Specified)

8/20μs waveform per IEC61000-4-5

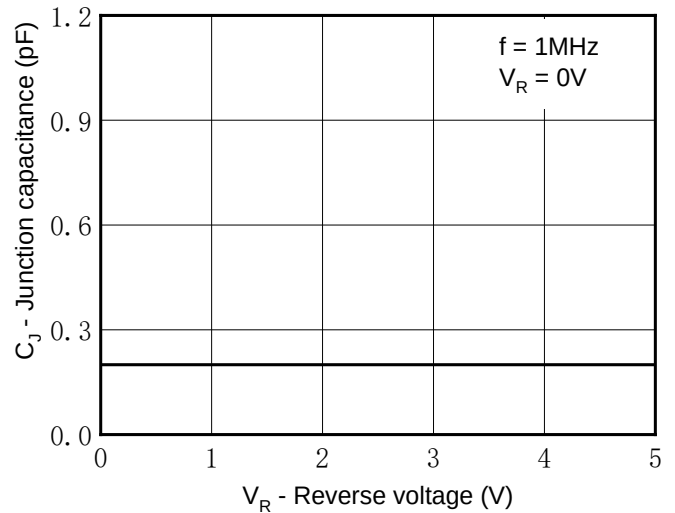
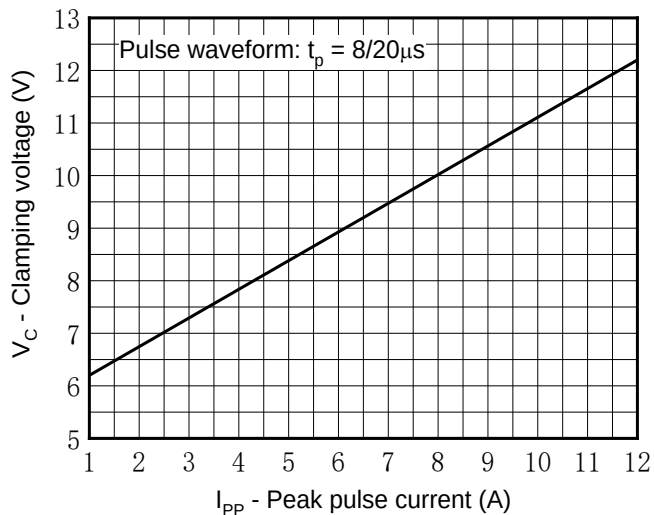


Clamping voltage vs. Peak pulse current

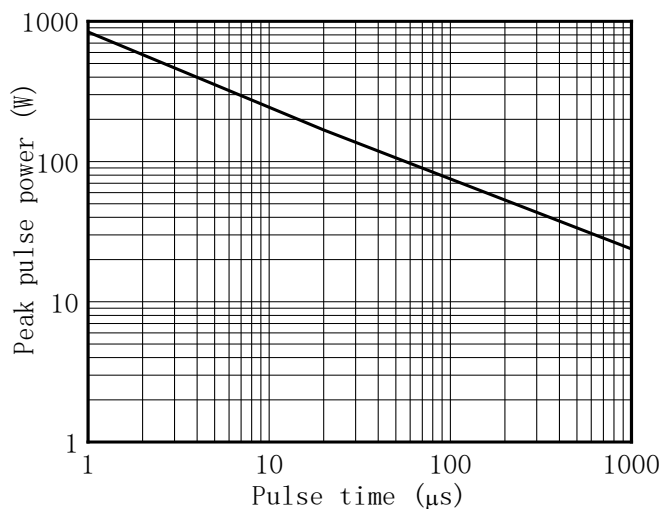
Contact discharge current waveform per IEC61000-4-2



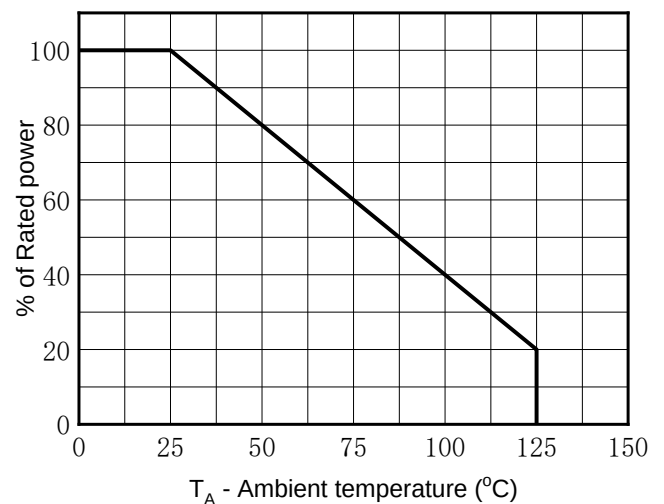
Capacitance vs. Reverse voltage



Non-repetitive peak pulse power vs. Pulse time



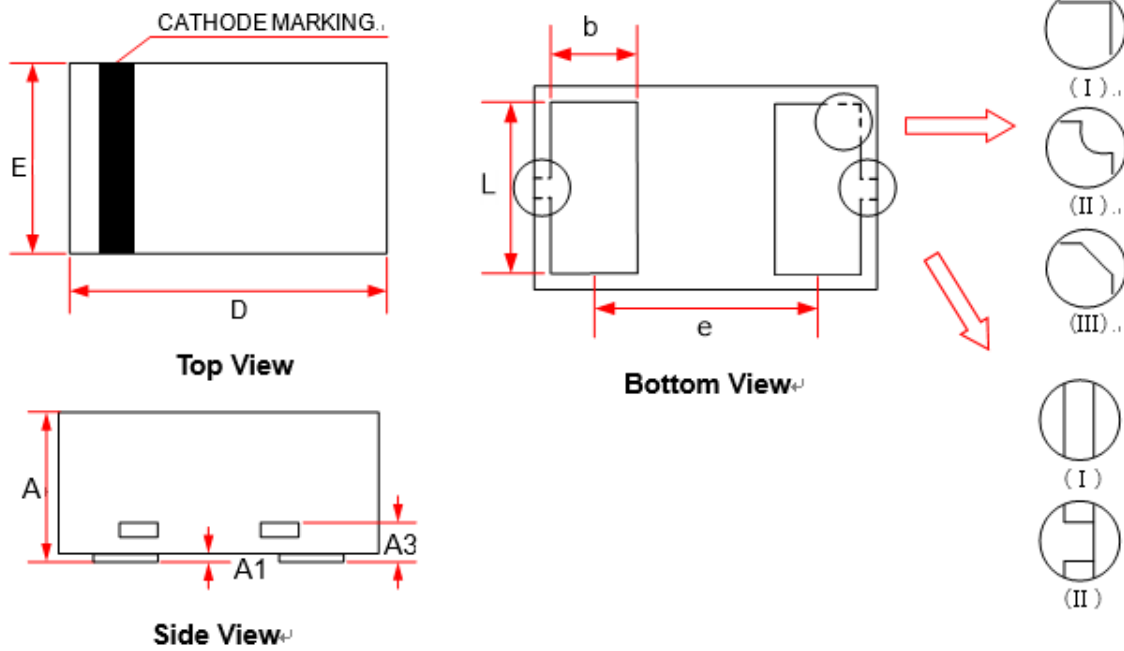
Power derating vs. Ambient temperature





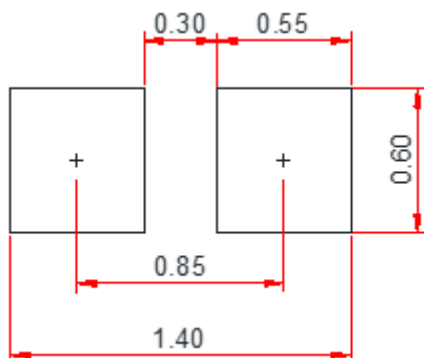
ESDULC3V3LBA3

■ Outline Dimensions



Symbol↗	Dimensions in Millimeters↗		
	Min.↗	Typ.↗	Max.↗
A↗	0.340↗	—↗	0.550↗
A1↗	0.000↗	0.020↗	0.050↗
A3↗	0.125 Ref.↗		
D↗	0.950↗	1.000↗	1.075↗
E↗	0.550↗	0.600↗	0.675↗
b↗	0.200↗	0.250↗	0.300↗
L↗	0.450↗	0.500↗	0.550↗
e↗	0.650 BSC↗		

■ 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



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