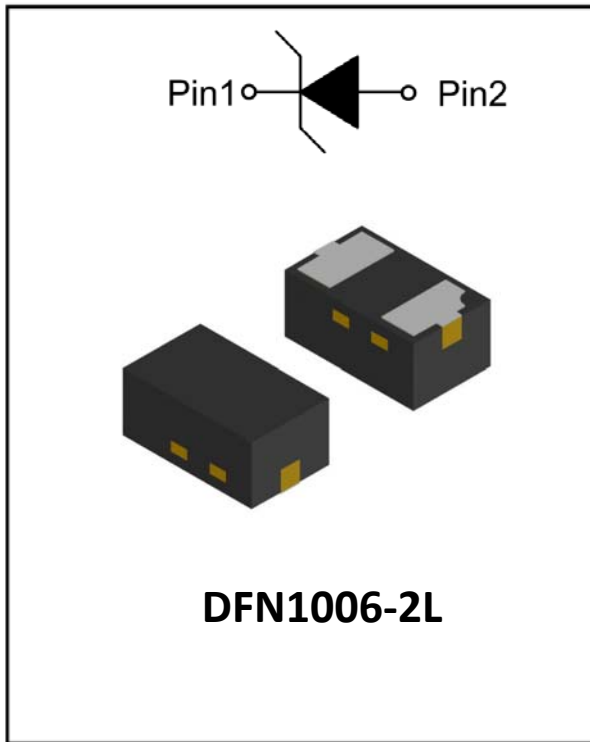


1-Line, Uni-directional, Transient Voltage Suppressor



Features

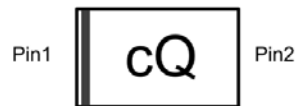
- Ultra small package
- Stand-off voltage: 12V Max
- Transient protection for each line according to
 - IEC61000-4-2(ESD): $\pm 30\text{kV}$ (contact)
 - IEC61000-4-4 (EFT): 80A (5/50ns)
 - IEC61000-4-5(surge): 25A (8/20 μs)
- Low leakage current
- Low clamping voltage
- RoHS Compliant

Applications

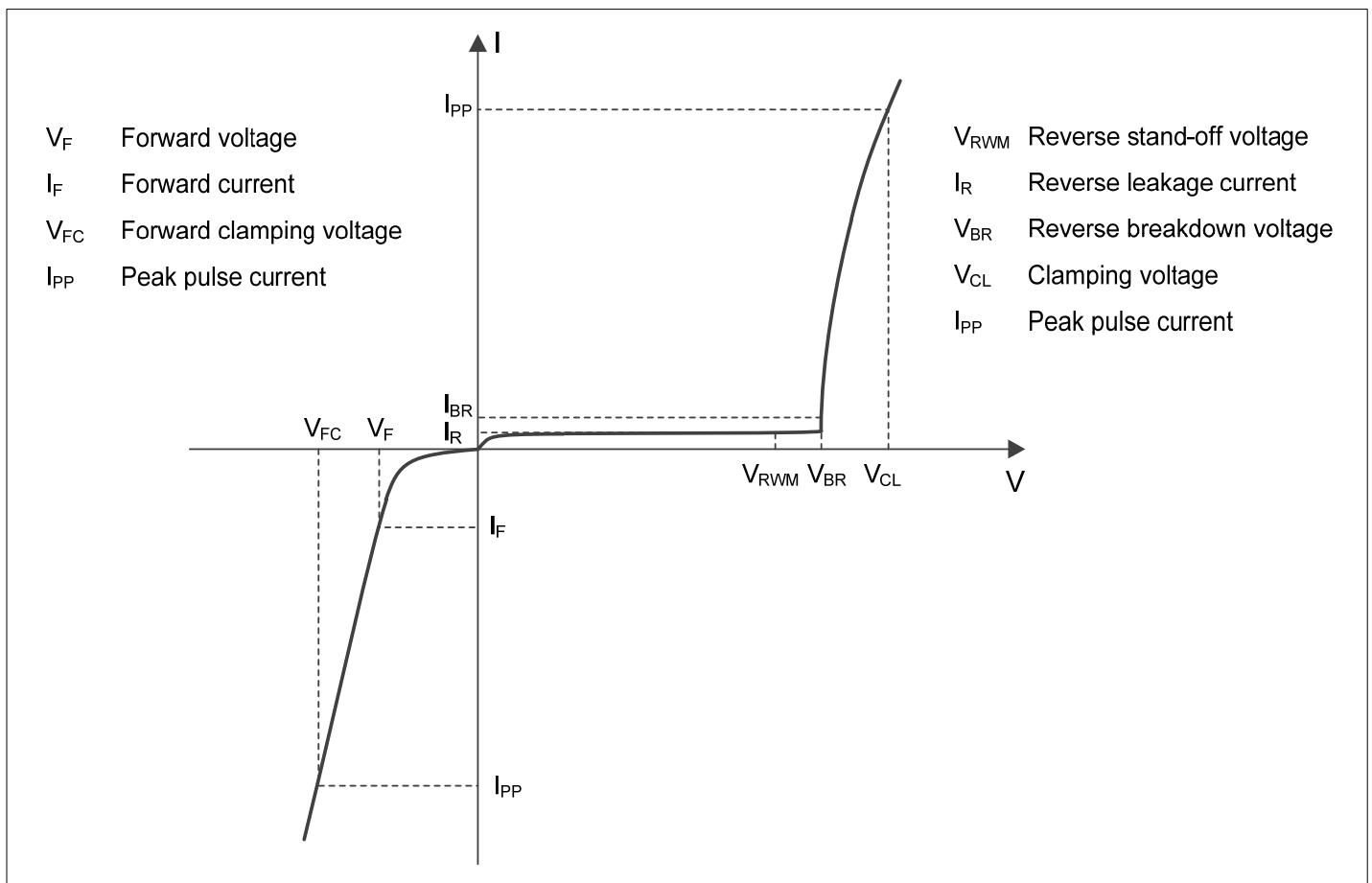
- Power supply protection
- Power management

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





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

PARAMETER	SYMBOL	Rating	UNIT
Peak pulse power ($t_p = 8/20\mu s$)	P_{pk}	650	W
Peak pulse current ($t_p = 8/20\mu s$)	I_{PP}	25	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 (Ta=25°C Unless otherwise specified)

PARAMETER	Symbol	UNIT	Conditions	Min	Typ	Max
Reverse maximum working voltage	V_{RWM}	V				12
Reverse leakage current	I_R	nA	$V_{RWM} = 12V$			100
Reverse breakdown voltage	V_{BR}	V	$I_{BR} = 1mA$	13	14	17
Forward voltage	V_F	V	$I_F = 20mA$	0.45		1.25
Clamping voltage ¹⁾	V_{CL}	V	$I_{PP} = 16A, t_p = 100ns$		17	
Dynamic resistance ¹⁾	R_{DYN}	Ω			0.35	
Clamping voltage ²⁾	V_{CL}	V	$V_{ESD} = 8kV$		17	
Clamping voltage ³⁾	V_{CL}	V	$I_{PP} = 1A, t_p = 8/20\mu s$			16
		V	$I_{PP} = 25A, t_p = 8/20\mu s$			26
Junction capacitance	C_J	pF	$V_R = 0V, f = 1MHz$		90	110
		pF	$V_R = 2.5V, f = 1MHz$		80	100

(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)

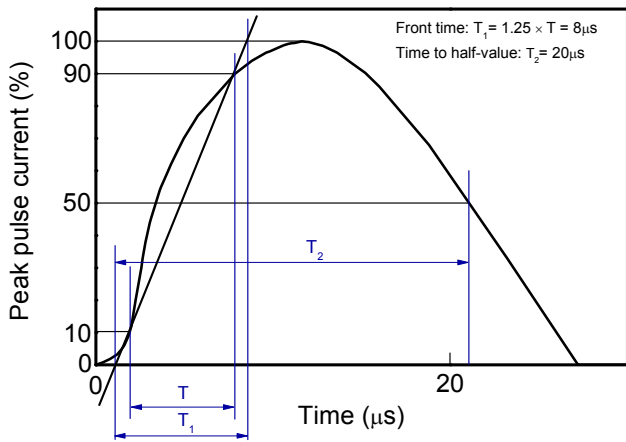
PREFERRED P/N	UNIT WEIGHT(mg)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
ESD12VLA	Approximate 0.9	10000	100000	400000	Tae& reel



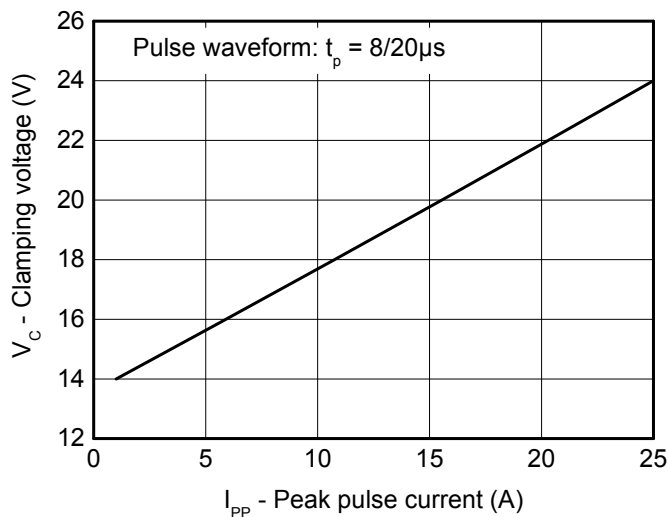
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■ Typical Performance Characteristics (Ta=25°C unless otherwise Specified)

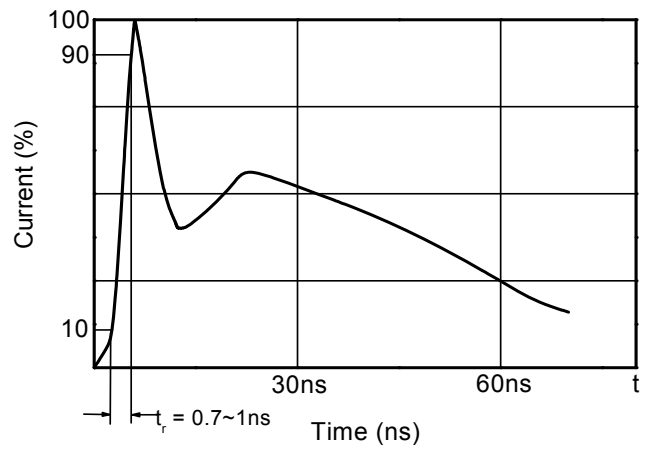
8/20μs waveform per IEC61000-4-5



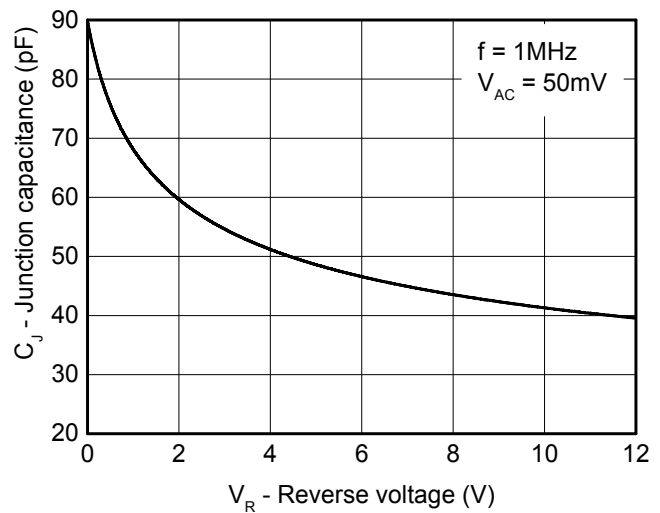
Clamping voltage vs. Peak pulse current



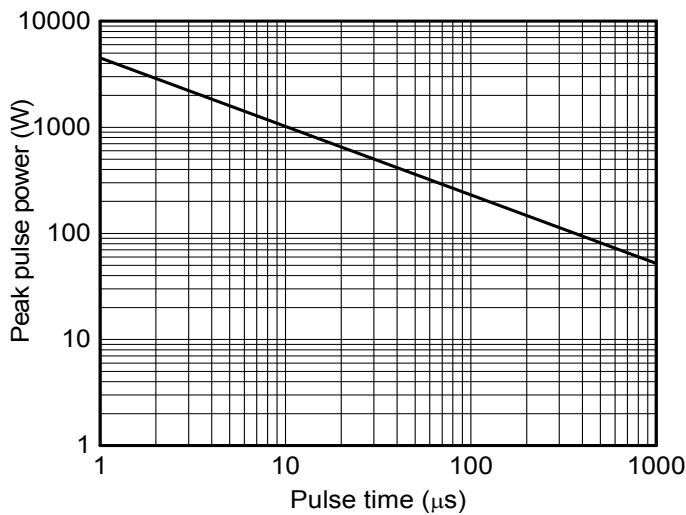
Contact discharge current waveform per IEC61000-4-2



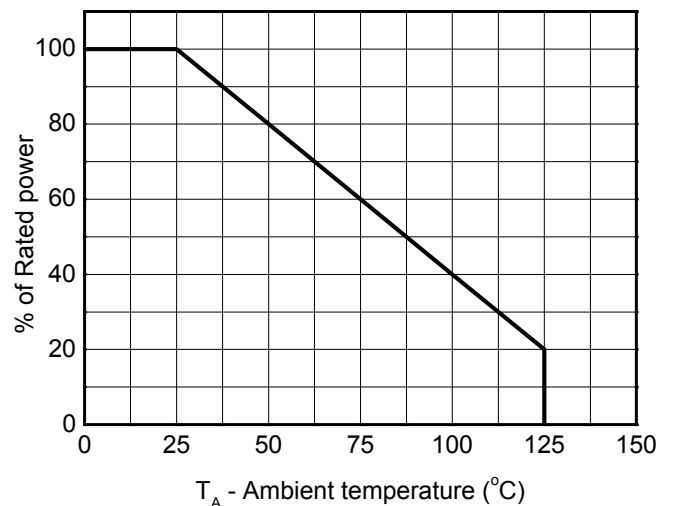
Capacitance vs. Reverse voltage



Non-repetitive peak pulse power vs. Pulse time



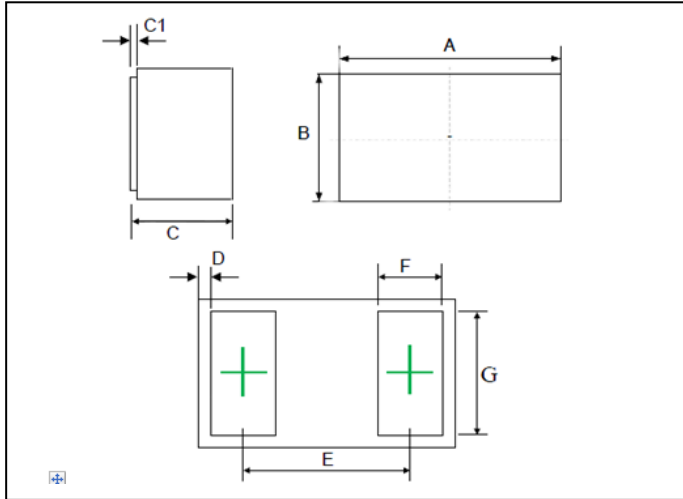
Power derating vs. Ambient temperature





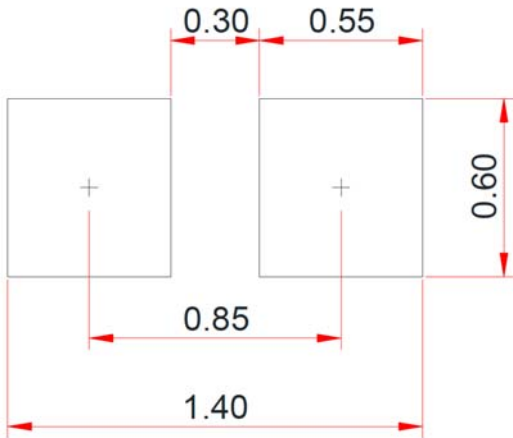
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■ Outline Dimensions



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



ESD12VLA

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