



Micro Commercial Components  
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# ESD12VL

## ESD Protection Device

### Features

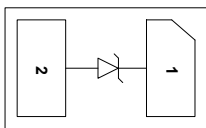
- Protects one data or power line
- Low clamping voltage
- Ultra low leakage: nA level
- IEC61000-4-4 (EFT) 40A (5/50ns)
- IEC61000-4-5(Lightning) 20A (8/20us)
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

### Maximum Ratings

- Junction Temperature: -55°C to +125°C
- Storage Temperature: -55°C to +150°C

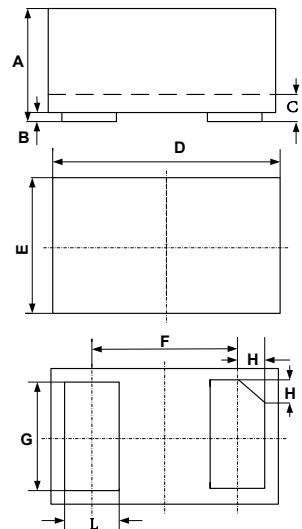
Parameter	Symbol	Limits	unit
IEC61000-4-2(ESD) Contact Air	$V_{ESD}$	$\pm 30$ $\pm 30$	KV
Peak Pulse Power (8/20us)	$P_{pk}$	300	W
Peak Pulse Current (8/20us)	$I_{pp}$	12	A

### Circuit and Pin Schematic



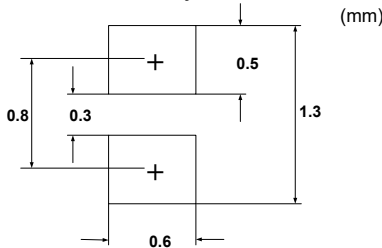
Marking Code: 2P / 12

### DFN1006-2



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.018	0.022	0.45	0.55	
B	0.000	0.002	0.00	0.05	
C	0.005	0.007	0.12	0.18	
D	0.037	0.041	0.95	1.05	
E	0.022	0.026	0.55	0.65	
F	0.026 REF.		0.650 REF.		
G	0.018	0.022	0.45	0.55	
H	0.003	0.007	0.07	0.17	
L	0.008	0.012	0.20	0.30	

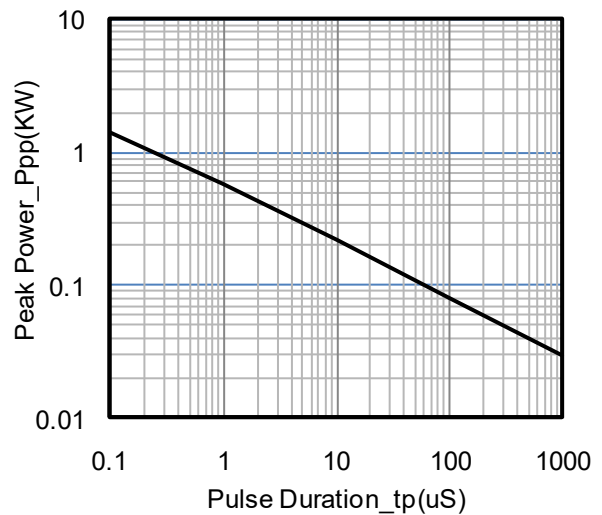
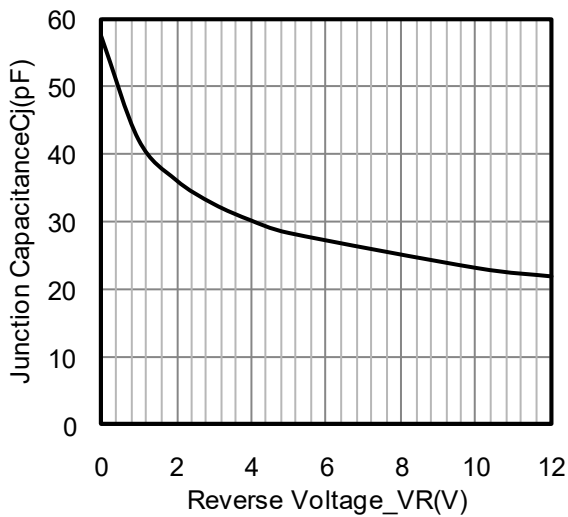
Suggested Solder Pad Layout



**Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise specified)**

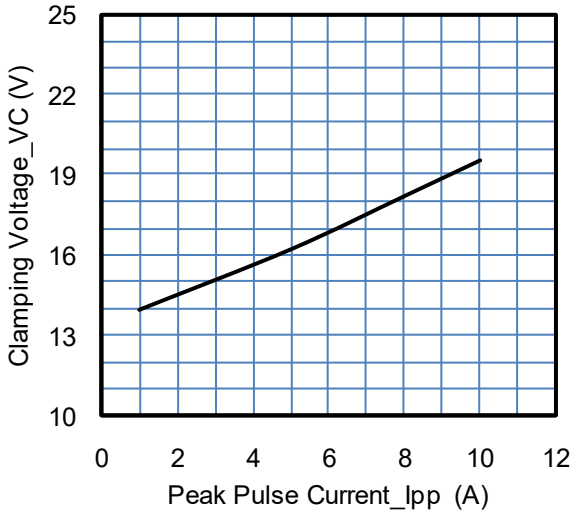
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	$V_{RWM}$			12	V	Pin 1 to Pin 2
Breakdown Voltage	$V_{BR}$	13.3			V	$I_T = 1\text{mA}$ , Pin 1 to Pin 2
Reverse Leakage Current	$I_R$			0.1	$\mu\text{A}$	$V_{RWM} = 12\text{V}$ , Pin 1 to Pin 2
Forward Voltage	$V_F$		1.0	1.2	V	$I_F = 10\text{mA}$ , Pin 2 to Pin 1
Clamping Voltage	$V_C$			15	V	$I_{PP} = 1\text{A}$ (8 x 20 $\mu\text{s}$ pulse), Pin 1 to Pin 2
Clamping Voltage	$V_C$			25	V	$I_{PP} = 12\text{A}$ (8 x 20 $\mu\text{s}$ pulse), Pin 1 to Pin 2
Junction Capacitance	$C_J$		60		pF	$V_R = 0\text{V}$ , $f = 1\text{MHz}$

**Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)**

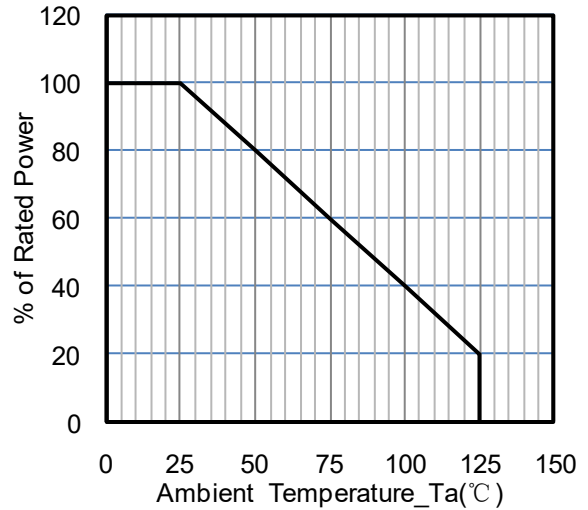


**Typical Performance Characteristics (T<sub>A</sub>=25°C unless otherwise Specified)**

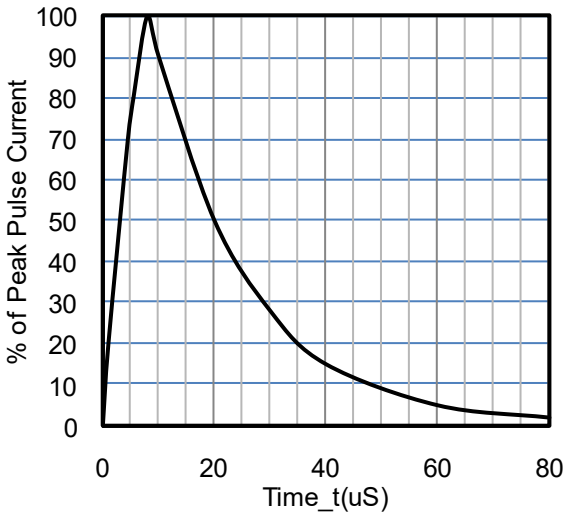
**Junction Capacitance vs. Reverse Voltage**



**Peak Pulse Power vs. Pulse Time**

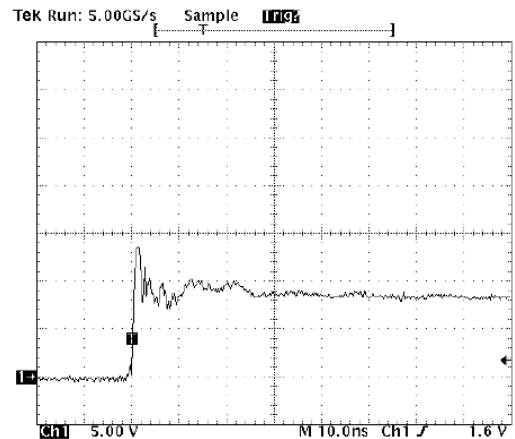


**Clamping Voltage vs. Peak Pulse Current**



**8 X 20uS Pulse Waveform**

**Power Derating Curve**



**ESD Clamping Voltage**

**8 kV Contact per IEC61000-4-2**



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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 10Kpcs/Reel

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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