

## Features

- Protects One Data or Power Line
- Low Clamping Voltage
- Ultra Low Leakage: nA Level
- Moisture Sensitivity Level 1
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

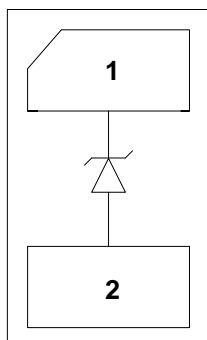
## Maximum Ratings

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

MCC Part Number	Device Marking
ESD12VL	12

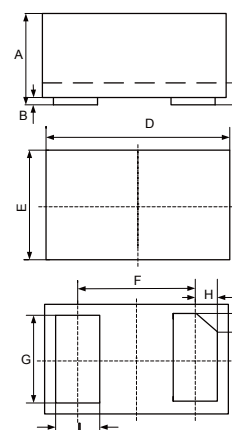
IEC61000-4-2(ESD)	Air Contact	±30KV ±30KV
IEC61000-4-4 (EFT) @5/50ns		40A
IEC61000-4-5(Surge) @8/20us	I <sub>PP</sub>	12A
Peak pulse power(tp=8/20us)	P <sub>PP</sub>	300W

## Circuit and Pin Schematic



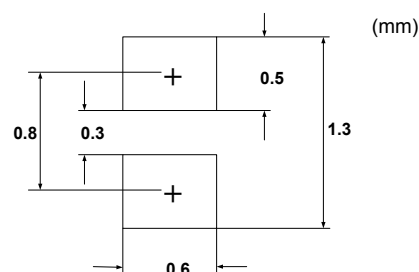
## ESD Protection Device

### DFN1006-2



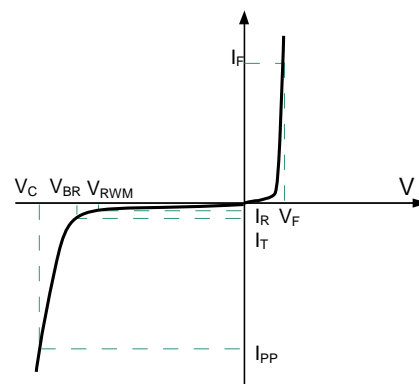
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.018	0.022	0.45	0.55	
B	0.000	0.002	0.00	0.05	
C	0.005	0.007	0.12	0.18	
D	0.037	0.041	0.95	1.05	
E	0.022	0.026	0.55	0.65	
F	0.026		0.650		TYP.
G	0.018	0.022	0.45	0.55	
H	0.003	0.007	0.07	0.17	
L	0.008	0.012	0.20	0.30	

### SUGGESTED SOLDER PAD LAYOUT



**ELECTRICAL CHARACTERISTICS** ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Symbol	Parameter
$V_{RWM}$	Peak Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_T$	Test Current
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$P_{PP}$	Peak Pulse Power
$C_J$	Junction Capacitance
$I_F$	Forward Current
$V_F$	Forward Voltage @ $I_F$



**Electrical Characteristics per line @  $25^\circ\text{C}$  (Unless Otherwise Specified)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-Off Voltage	$V_{RWM}$				12	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1\text{mA}$	13.3			V
Reverse Leakage Current	$I_R$	$V_{RWM}=12\text{V}$			0.1	$\mu\text{A}$
Forward Voltage	$V_F$	$I_F=10\text{mA}$		1	1.2	V
Clamping Voltage	$V_C$	$I_{PP}=1\text{A}$ , $t_p=8/20\mu\text{s}$			15	V
Clamping Voltage	$V_C$	$I_{PP}=12\text{A}$ , $t_p=8/20\mu\text{s}$			25	V
Junction Capacitance	$C_J$	$V_R = 0\text{V}$ , $f = 1\text{MHz}$		60		pF

## Curve Characteristics

Fig. 1 - 8 X 20 $\mu$ s Pulse Waveform

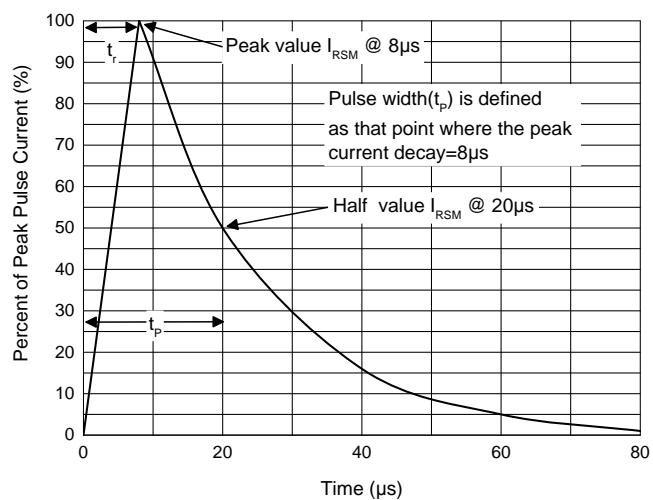


Fig. 2 - Pulse Derating Curve

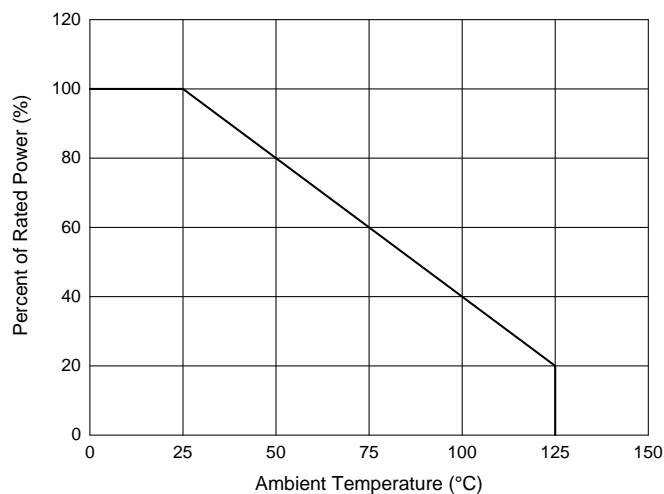


Fig. 3 - Capacitance Characteristics

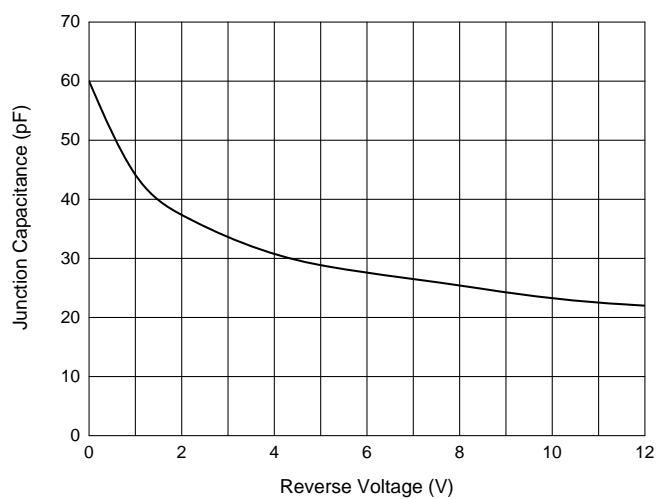
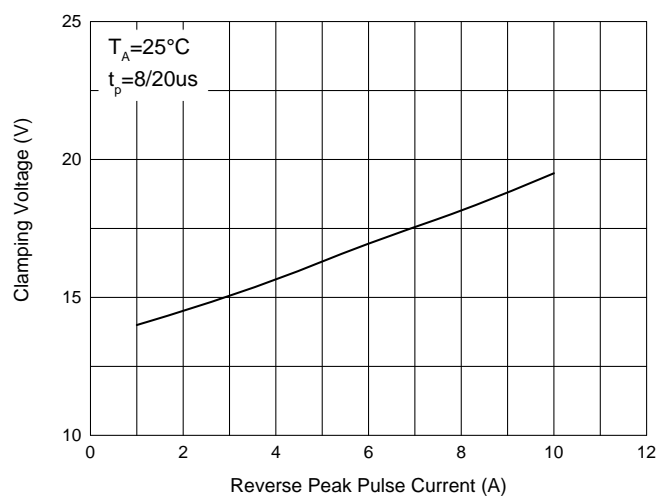


Fig. 4 - Clamping Voltage Characteristics



## 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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