



**THE DATASHEET OF
ESDN12VD3-TP**





Micro Commercial Components

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ESDN12VD3

12 Volts ESD Protection Devices

Features

- Halogen free available upon request by adding suffix "-HF"
- Uni-directional ESD protection of one line
- Low reverse clamping voltage
- Low leakage
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1

Maximum Ratings

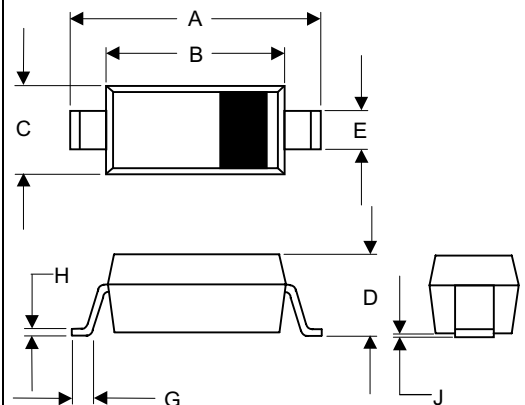
- Operating Junction & Storage Temperature: -55°C to +150°C

Parameter	Symbol	Limits	unit
IEC61000-4-2(ESD) Air Contact	$V_{ESD}^{(1)}$	± 25	KV
ESD Voltage Per Human Body Model		± 25	KV
Machine Model		± 16	KV
Peak Pulse Power	$P_{PP}^{(2)}$	990	W
Peak Pulse Current	$I_{PP}^{(2)}$	30	A

(1). Device stressed with ten non-repetitive ESD pulses.

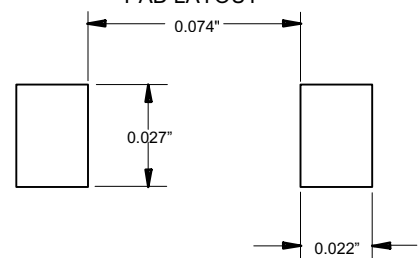
(2). Non-repetitive current pulse 8/20µs exponential decay waveform according to IEC61000-4-5.

SOD323



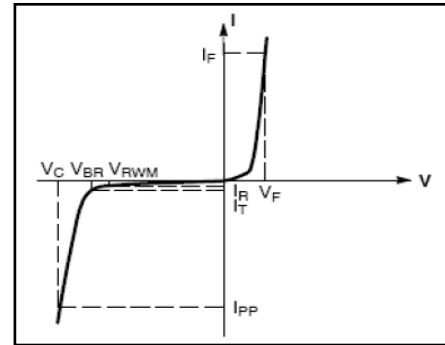
DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	.090	.107	2.30	2.70	
B	.063	.071	1.60	1.80	
C	.045	.053	1.15	1.35	
D	.031	.045	0.80	1.15	
E	.010	.016	0.25	0.40	
G	.004	.018	0.10	0.45	
H	.004	.010	0.10	0.25	
J	-----	.006	-----	0.15	

SUGGESTED SOLDER PAD LAYOUT



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

Symbol	meter
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Peak Pulse Current
V_{BR}	Breakdown Voltage @ I_T
I_T	Test Current
I_R	Reverse Leakage Current @ V_{RWM}
V_{RWM}	Reverse Standoff Voltage
V_F	Forward Voltage @ I_F
I_F	Forward Current



V-I characteristics for a uni-directional TVS

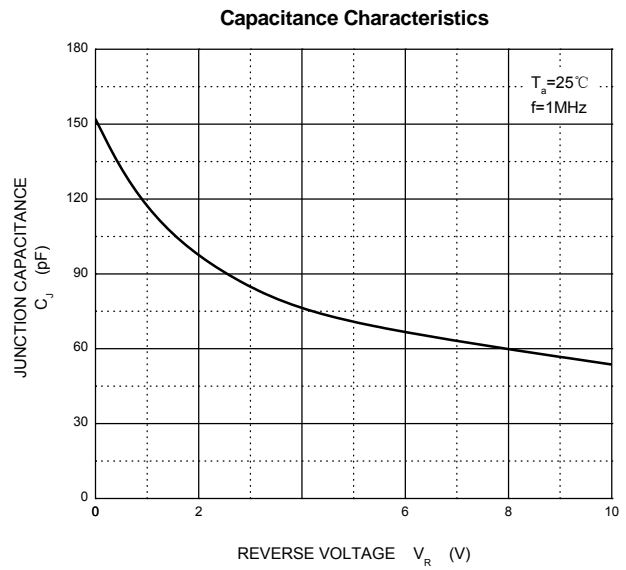
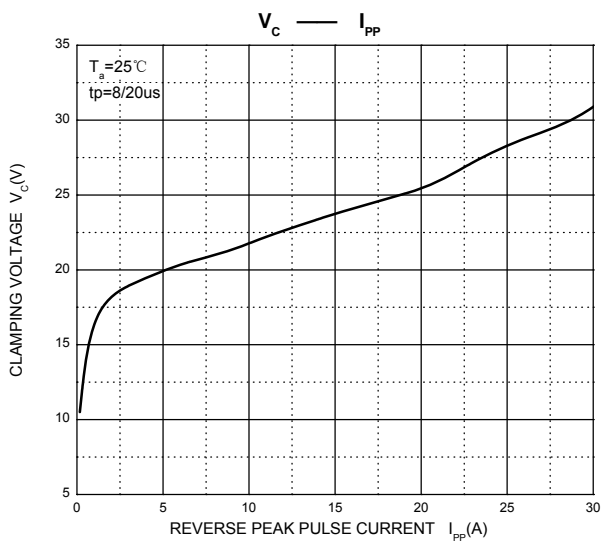
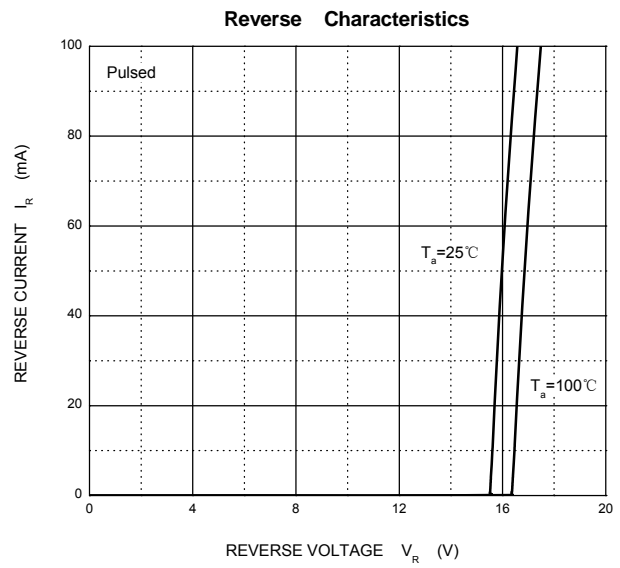
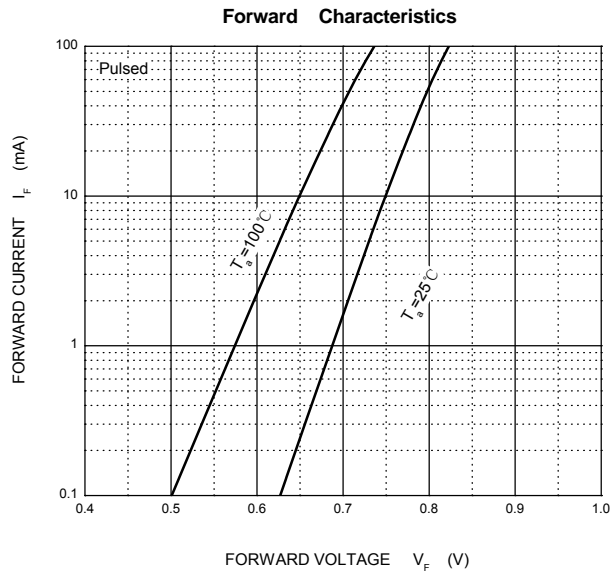
ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted, $V_F = 0.9\text{ V Max.}$ @ $I_F = 10\text{mA}$ for all types)

Parameter	mbol	Test conditions	Min	Typ	Max	Unit
Reverse stand off voltage	$V_{RWM}^{(1)}$				12	V
Reverse leakage current	I_R	$V_{RWM}=12\text{V}$			1	μA
Breakdown voltage	$V_{(BR)}$	$I_T=1\text{mA}$	13		16.5	V
Clamping voltage	$V_C^{(2)}$	$I_{PP}=20\text{A}$			27	V
Forward voltage	V_F	$I_F=10\text{mA}$			0.9	V
Junction capacitance	C_J	$V_R=2.5\text{V}, f=1\text{MHz}$			100	pF

(1).Other voltages available upon request.

(2).Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5

TYPICAL CHARACTERISTICS





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Ordering Information :

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel

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

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