

ESD Suppressor AEC-Q101 5.5V Bidirectional DFN1006

ME5V51B12D02A

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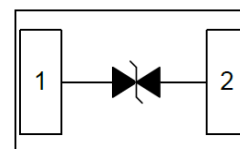
FEATURE

- IEC 61000-4-2 ESD: $\pm 20\text{KV}$ (Air) $\pm 15\text{KV}$ (Contact)
- IEC 61000-4-4 EFT: 40A (5/50ns)
- IEC 61000-4-5 Lightning: 2A (8/20 μs)
- ESD Protection for one Bidirectional Channel
- Low Capacitance
- Low Clamping Voltage
- Solid-State Silicon-Avalanche Technology
- AEC-Q101 Qualified



APPLICATION

- USB 3.0 Data Lines Protection
- Data and I/O Lines Protection
- Video Lines Protection
- Hand Held Portable Devices
- Destops and Notebooks



MAXIMUM RATINGS AND CHARACTERISTICS

Parameter	Symbol	Value	Unit
ESD Voltage per IEC61000-4-2 (Contact discharge)	V_{ESD}	± 15	KV
ESD Voltage per IEC61000-4-2 (Air discharge)		± 20	KV
Operating & Storage Temperature Range	T_J, T_{STG}	-55~+150	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS

Parameter	Condition	Symbol	Min.	Typ.	Max.	Unit
Reverse Stand-Off Voltage	--	V_{RWM}	--	--	5.5	V
Reverse Breakdown Voltage	$I_{BR}=1\text{mA}$	V_{BR}	6.8	7.8	11.2	V
Reverse Leakage Current	$V_R=5\text{V}$	I_R	--	--	75	nA
Clamping Voltage	$I_{PP}=1\text{A}, t_p=8/20\mu\text{s}$	V_C	--	--	12	V
	$I_{PP}=2\text{A}, t_p=8/20\mu\text{s}$		--	11	14	
Clamping Voltage TLP	$I_{PP}=8\text{A}, t_p=100\text{ns}$	V_C	--	14	--	V
	$I_{PP}=16\text{A}, t_p=100\text{ns}$		--	16	--	
Dynamic Resistance	$t_p=100\text{ns}$	R_{DYN}	--	0.25	--	Ω
Off State Junction Capacitance	$V_{dc}=0, f=1\text{MHz}$	C_J	--	--	0.6	pF

Notes:

1. $T_J=25^{\circ}\text{C}$ unless otherwise specified

2. Transmission Line Pulse (TLP) test condition: $Z_0=50\Omega, t_p=100\text{ns}$

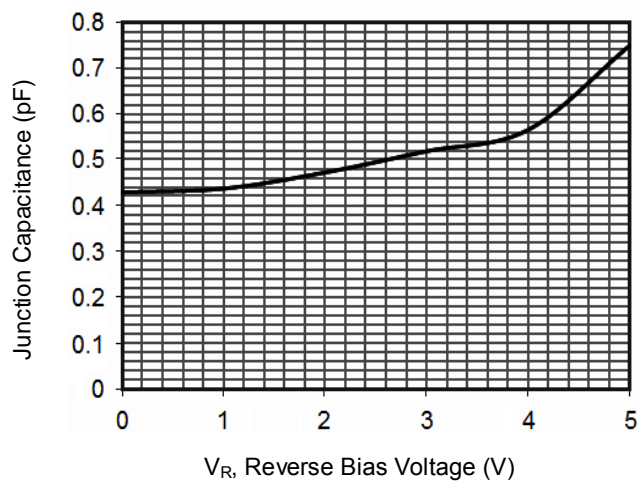
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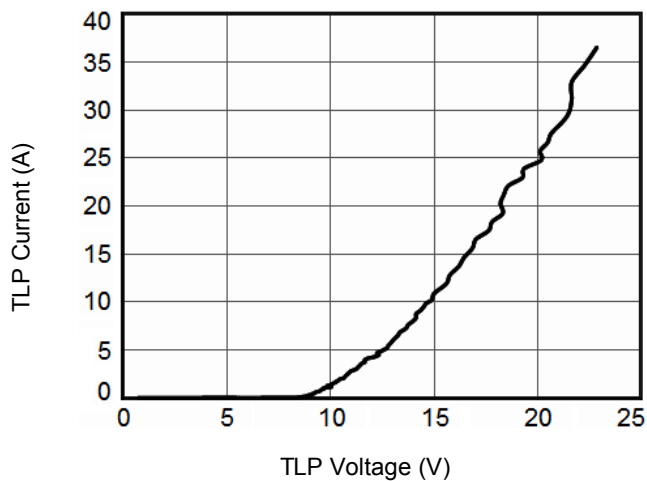
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CHARACTERISTIC CURVES

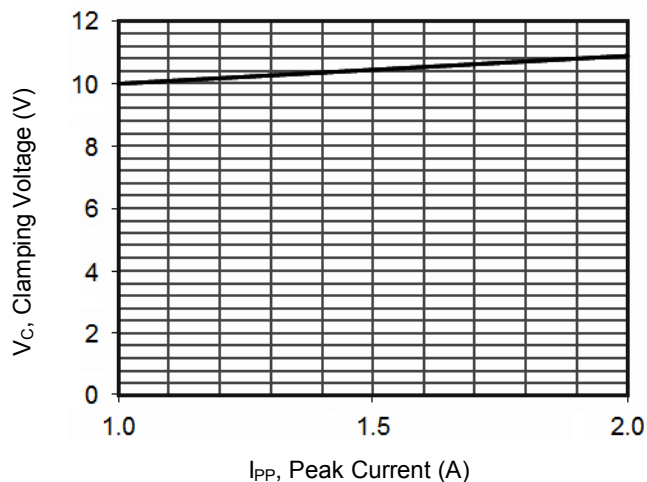
Typical Junction Capacitance



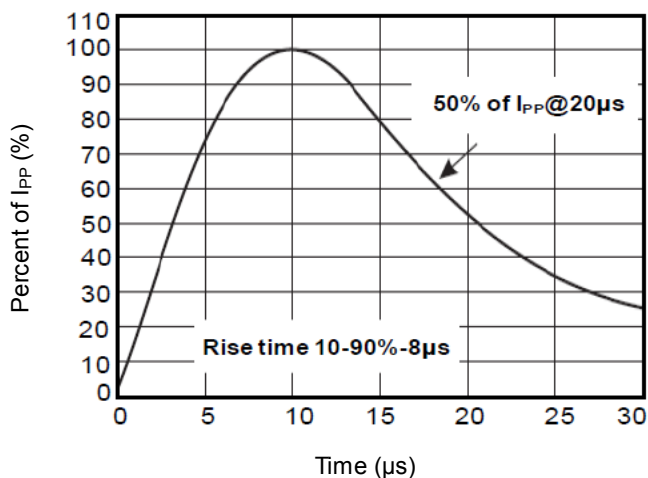
TLP Measurement



Typical Peak Clamping Voltage (8/20 μ s)



Pulse Waveform



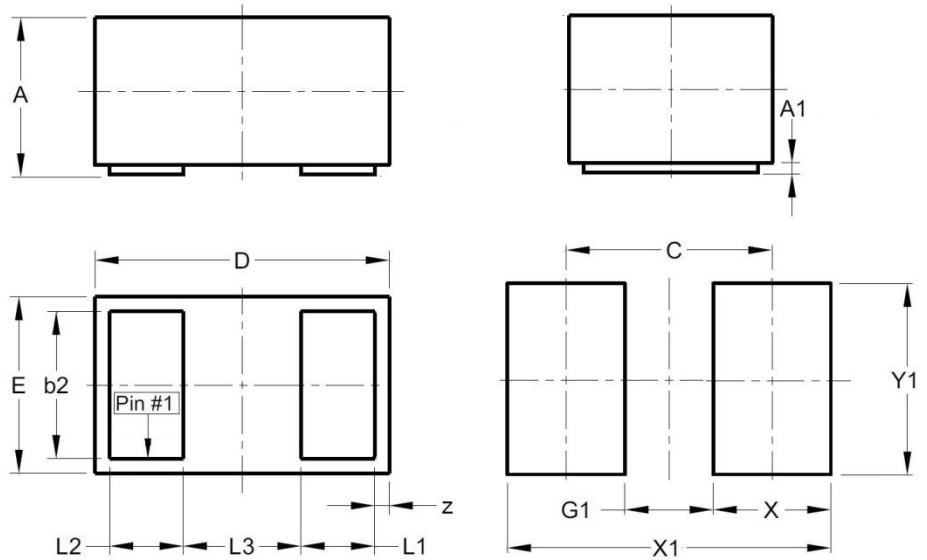
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DIMENSIONS AND RECOMMENDED LAND PATTERN

Item	Min (mm)	Max (mm)
A	0.45	0.55
A1	-	0.05
b2	0.45	0.55
D	0.95	1.05
E	0.55	0.65
z	0.10	0.10
L1	0.20	0.30
L2	0.20	0.30
L3	0.40	0.40
C	0.70	0.70
G1	0.30	0.30
X	0.40	0.40
X1	1.10	1.10
Y1	0.60	0.60



*Specifications subject to change without notice.