

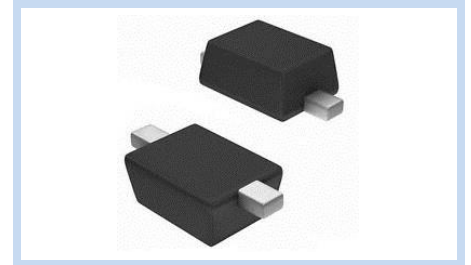
# ESD Suppressor AEC-Q101 12V Bidirectional SOD-323

ME121B23S323FA

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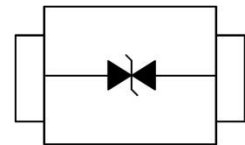
## FEATURE

- IEC 61000-4-2 ESD:  $\pm 30\text{KV}$  (Air)  $\pm 30\text{KV}$  (Contact)
- IEC 61000-4-5 Lightning: 5A (8/20 $\mu\text{s}$ )
- ESD Protection for One Bidirectional Channel
- ISO 10605(C=330pF, R=330 $\Omega$ ):  $\pm 30\text{KV}$  (Air)  $\pm 30\text{KV}$  (Contact)
- HBM  $\geq \pm 8\text{KV}$  & CDM  $\geq \pm 2\text{KV}$
- Low Clamping Voltage
- AEC-Q101 Qualified



## APPLICATION

- Serial ATA Protection
- USB 2.0 and USB 3.0 Interface
- Digital Visual Interface (DVI)
- RF Interface
- 10/100/1000 Ethernet



## MAXIMUM RATINGS AND CHARACTERISTICS

Parameter	Symbol	Value	Unit
ESD Voltage (Contact discharge)	$V_{ESD}$	$\pm 30$	KV
ESD Voltage (Air discharge)		$\pm 30$	
Typical Thermal Resistance	$R_{\theta JA}$	650	$^{\circ}\text{C}$
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	--	$V_{RWM}$	--	--	12	V
Reverse Breakdown Voltage	$I_{BR}=1\text{mA}$ , Any I/O pins to GND	$V_{BR}$	13	--	16	V
Reverse Leakage Current	$V_R=12\text{V}$	$I_R$	--	--	0.1	$\mu\text{A}$
Clamping Voltage	$I_{PP}=1\text{A}$ , $t_p=8/20\mu\text{s}$ , Any I/O pins to GND	$V_C$	--	--	20	V
	$I_{PP}=5\text{A}$ , $t_p=8/20\mu\text{s}$ , Any I/O pins to GND		--	--	23	
Clamping Voltage TLP	$I_{PP}=8\text{A}$ , $t_p=100\text{ns}$	$V_C$	--	17	--	V
	$I_{PP}=16\text{A}$ , $t_p=100\text{ns}$		--	20	--	
Dynamic Resistance	$t_p=100\text{ns}$	$R_{DYN}$	--	0.38	--	$\Omega$
Off State Junction Capacitance	$V_{dc}=0$ , Bias, $f=1\text{MHz}$ , Any I/O pins to GND	$C_J$	--	15	20	pF

Notes:

1.  $T_A=25^{\circ}\text{C}$  unless otherwise specified
2. Mounted on a FR4 PCB, Single-sided copper, mini pad
3. Testing using Transmission Line Pulse (TLP) conditions:  $Z_0 = 50\Omega$ ,  $t_p = 100\text{ns}$

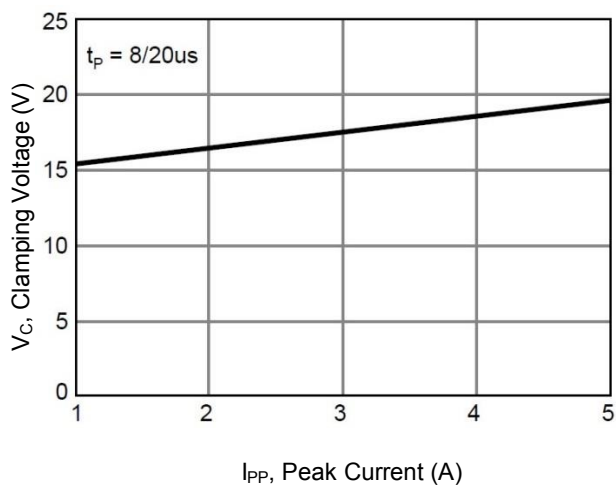
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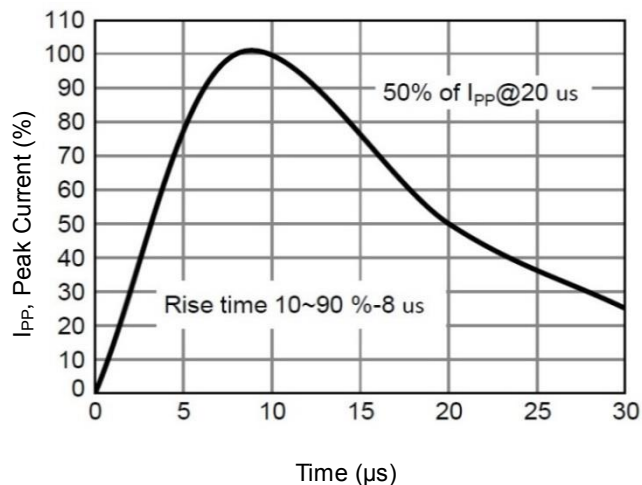
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## CHARACTERISTIC CURVES

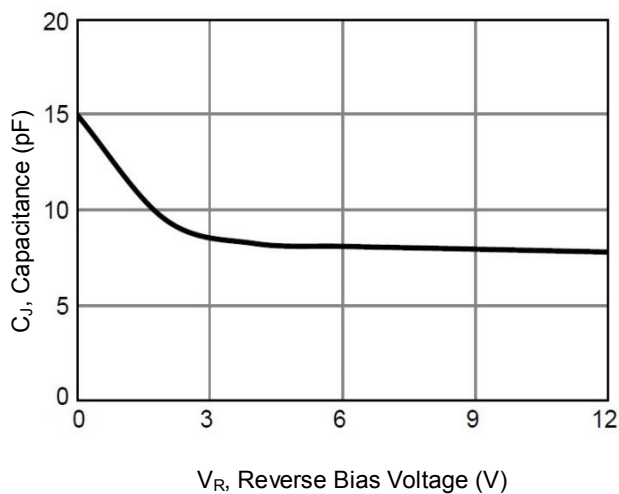
Typical Peak Clamping Voltage



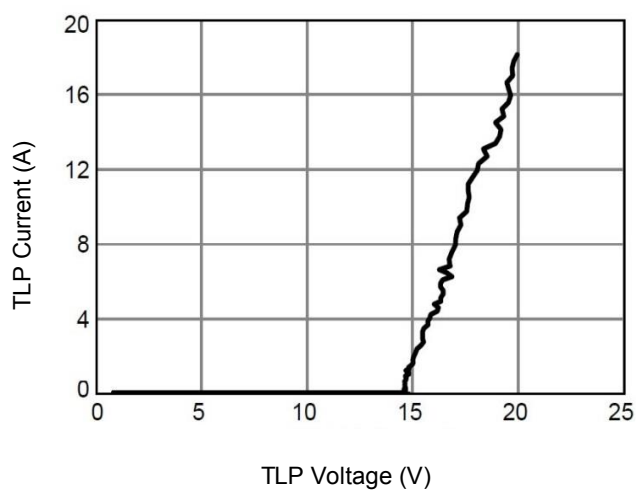
Pulse Waveform



Typical Junction Capacitance



Transmission Line Pulsing



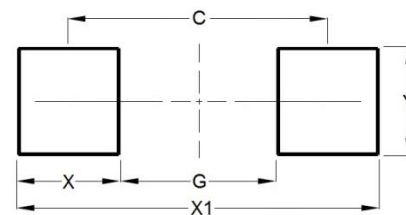
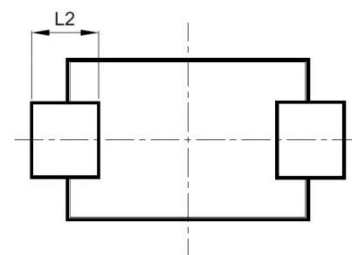
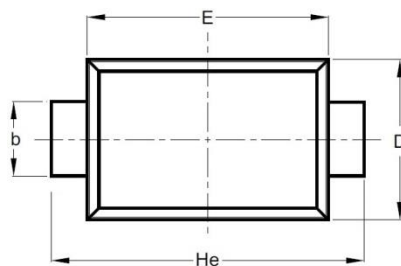
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## DIMENSIONS AND RECOMMENDED LAND PATTERN

Item	Min (mm)	Max (mm)
A	0.70	0.90
b	0.25	0.35
C	0.05	0.15
D	1.15	1.35
E	1.75	1.95
He	2.30	2.70
L2	0.30	-
C	2.00	2.00
G	1.30	1.30
X	0.70	0.70
X1	2.70	2.70
Y	0.40	0.40



\*Specifications subject to change without notice.