

# ESD Suppressor 5V 2-Unidirectional SOT-143

ME52U30S143

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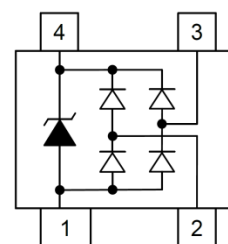
## FEATURE

- IEC 61000-4-2 ESD:  $\pm 22\text{KV}$  (Air)  $\pm 18\text{KV}$  (Contact)
- IEC 61000-4-4 EFT: 40A (5/50ns)
- IEC 61000-4-5 Lightning: 3A (8/20 $\mu\text{s}$ )
- ESD Protection for two Unidirectional Channels
- Low Clamping Voltage



## APPLICATION

- Usb Power And Data Line Protection
- Video Line Protection
- Lan/Wan Device
- Microcontroller Input Protection
- Portable Electronics



## MAXIMUM RATINGS AND CHARACTERISTICS

Parameter	Symbol	Value	Unit
ESD Voltage (Contact discharge)	$V_{ESD}$	$\pm 18$	KV
ESD Voltage (Air discharge)		$\pm 22$	
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	V
Reverse Breakdown Voltage	$I_{BR}=1\text{mA}$ , Pin 4 to Pin 1	$V_{BR}$	5	--	12	V
Reverse Leakage Current	$V_R=5\text{V}$	$I_R$	--	--	1	$\mu\text{A}$
Dynamic Resistance	$t_p=100\text{ns}$	$R_{DYN}$	--	1.39	--	$\Omega$
Clamping Voltage	$I_{PP}=1\text{A}$ , $t_p=8/20\mu\text{s}$ , Any I/O pins to Pin 1	$V_C$	--	--	13	V
	$I_{PP}=3\text{A}$ , $t_p=8/20\mu\text{s}$ , Any I/O pins to Pin 1		--	--	30	
Clamping Voltage TLP	$I_{PP}=8\text{A}$ , $t_p=100\text{ns}$	$V_C$	--	22.4	--	V
	$I_{PP}=16\text{A}$ , $t_p=100\text{ns}$		--	33.5	--	
Off State Junction Capacitance	$V_{dc}=0$ , Bias, $f=1\text{MHz}$ , Between any I/O pins & Pin 1	$C_J$	--	--	0.8	pF
	$V_{dc}=0$ , Bias, $f=1\text{MHz}$ , Between any I/O pins		--	--	0.4	

Notes:

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

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

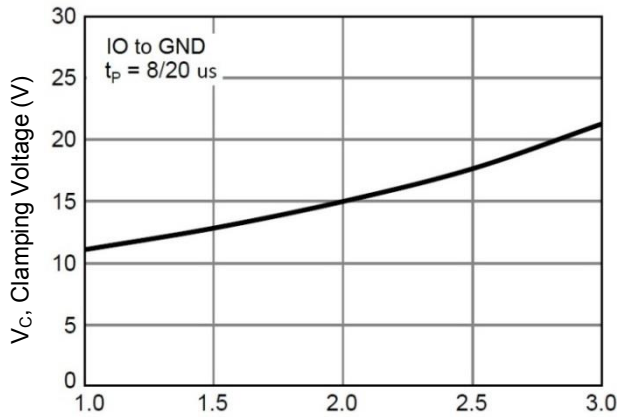
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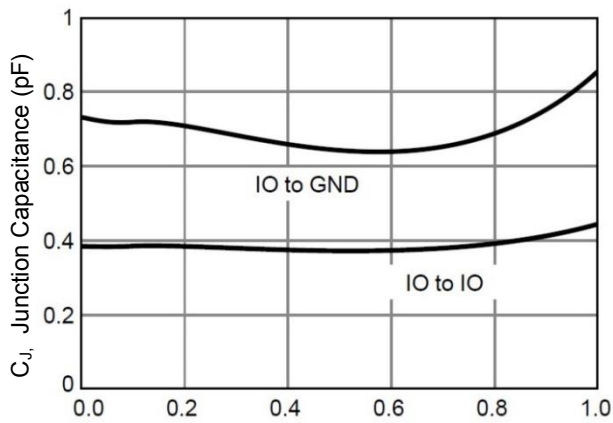
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## CHARACTERISTIC CURVES

Typical Characteristic Curve

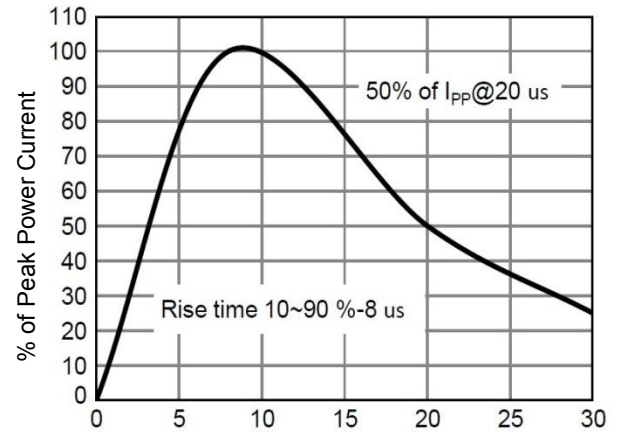


$T_A$ , Ambient Temperature (°C)  
Typical Junction Capacitance

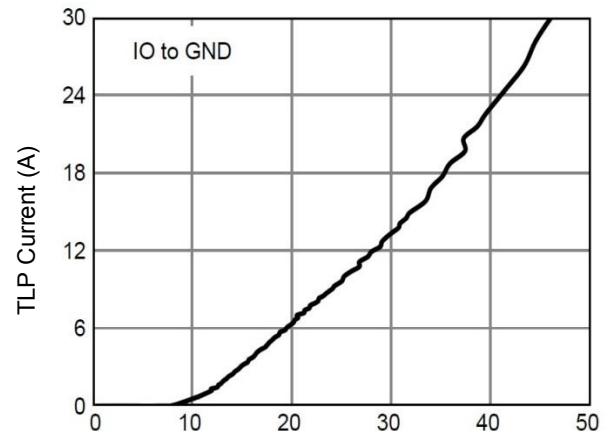


$V_R$ , Reverse Bias Voltage (V)

Pulse Waveform



T, Time ( $\mu s$ )  
TLP Measurement



TLP Voltage (V)

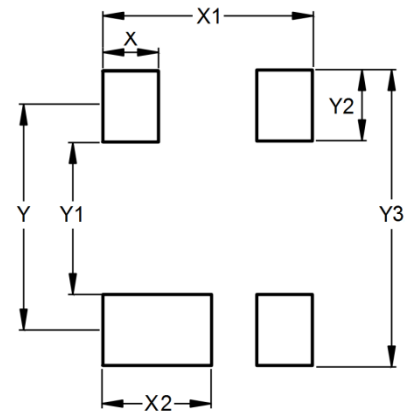
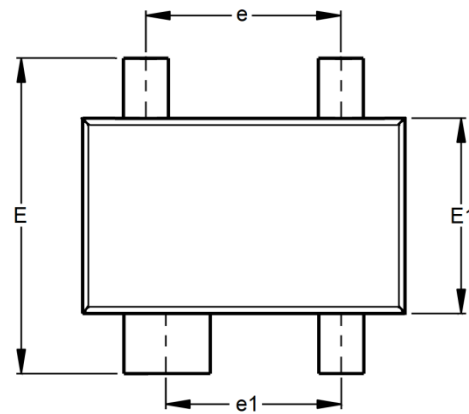
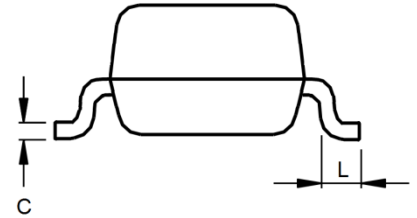
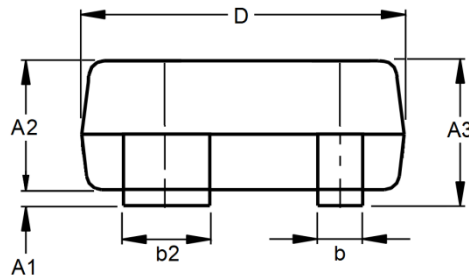
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## DIMENSIONS AND RECOMMENDED LAND PATTERN

Item	Min (mm)	Max (mm)
A1	-	0.10
A2	0.90	1.05
A3	0.90	1.15
b	0.30	0.50
b2	0.75	0.90
C	0.08	0.15
D	2.80	3.00
e	1.80	2.00
e1	1.60	1.80
E	2.25	2.55
E1	1.20	1.40
L	0.30	0.50
Y	2.00	2.00
Y1	1.30	1.30
Y2	0.70	0.70
Y3	2.70	2.70
X	0.60	0.60
X1	2.50	2.50
X2	1.00	1.00



\*Specifications subject to change without notice.