



SEMTECH PROTECTION

SHIELD PROTECTION – November 2020

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SHIELD PROTECTION products are TVS solutions optimized to specific data interfaces.



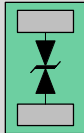
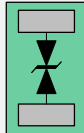
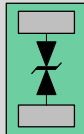
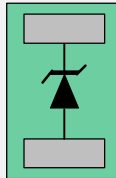
The Shield series of TVS devices have been tested to safeguard the latest silicon transceivers for their respective interfaces and enable system EMC design for faster time to market



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TYPE-C SHIELD



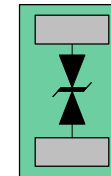
Semtech TVS Device	V _{rw}	Transient Thresholds	C _j	Device configuration & dimensions
RClamp4021ZA (D+, D-)	4V	IEC 61000-4-2 (ESD) $\pm 25\text{kV}$ (Air), $\pm 20\text{kV}$ (Contact) IEC 61000-4-5 (Surge) 8A (8/20 μs)	0.55pF (max)	Pkg dimensions: 0.6 x 0.3 x 0.25mm 
RClamp3371ZC (Superspeed lines)	3.3V	IEC 61000-4-2 (ESD) $\pm 17\text{kV}$ (Air), $\pm 10\text{kV}$ (Contact) IEC 61000-4-5 (Surge) 9A (8/20 μs)	0.25pF (max)	Pkg dimensions: 0.6 x 0.3 x 0.25mm 
uClamp5011ZA (Control Lines)	5V	IEC 61000-4-2 (ESD) $\pm 18\text{kV}$ (Air), $\pm 15\text{kV}$ (Contact) IEC 61000-4-5 (Surge) 2.5A (8/20 μs)	5pF (max)	Pkg dimensions: 0.6 x 0.3 x 0.25mm 
uClamp2271P (20V V _{bus})	22V	IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (Air), $\pm 30\text{kV}$ (Contact) IEC 61000-4-5 (Surge) 25A (8/20 μs)	165pF (max)	Pkg dimensions: 1.6 x 1.0 x 0.5mm 

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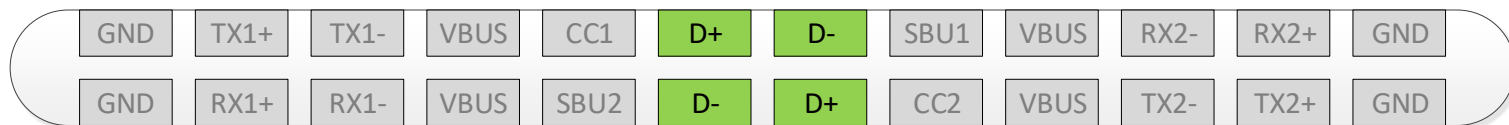


RCLAMP4021ZA – D+, D-

- 4V Working Voltage
- 1-line protection
- ESD Immunity: $\pm 25\text{kV}$ (air)/ $\pm 20\text{kV}$ contact
- Low capacitance: 0.55pF max
- Low-clamping voltage
- Low dynamic resistance: 0.12Ω
- Small 0201 package



RClamp4021ZA



TVS Protection for 10/100 Ethernet Interface

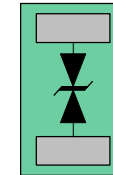
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TYPE-C SHIELD

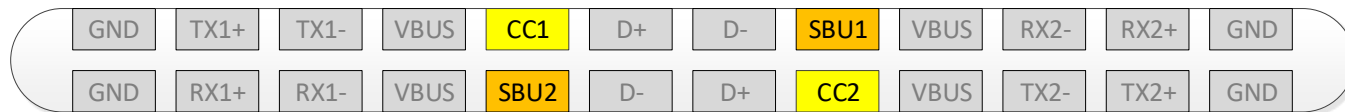


uCLAMP5011ZA – CC1, CC2, SBU1, SBU2

- 5V Working Voltage
- 1-line protection
- ESD Immunity: $\pm 18\text{kV}$ (air)/ $\pm 15\text{kV}$ contact
- Low capacitance: 5pF max
- Low-clamping voltage
- Low dynamic resistance: 0.15Ω
- Small 0201 package



uClamp5011ZA



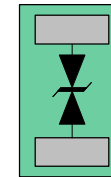
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TYPE-C SHIELD



RCLAMP3371ZC – Superspeed Tx/Rx Lines

- 3.3V Working Voltage
- 1-line protection
- ESD Immunity: $\pm 17\text{kV}$ (air)/ $\pm 10\text{kV}$ contact
- Low capacitance: 0.25pF max
- Low-clamping voltage
- Low dynamic resistance: 0.14Ω
- Small 0201 package



RClamp3371ZC



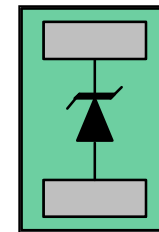
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TYPE-C SHIELD



uCLAMP2271P – Vbus

- 22V Working Voltage
- 1-line protection
- ESD Immunity: $\pm 30\text{kV}$ (air)/ $\pm 30\text{kV}$ contact
- Low-clamping voltage
- Low dynamic resistance: 0.10Ω
- DFN Package: $1.6 \times 1.0 \times 0.5\text{mm}$



uClamp2271P





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