



SEMTECH PROTECTION

SHIELD PROTECTION – November 2020

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



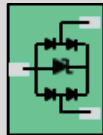
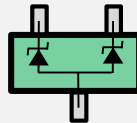
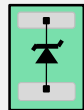
The Shield series of TVS devices have been tested to safeguard the latest silicon transceivers for their respective interfaces and enable system EMC design for faster time to market.



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USB SHIELD



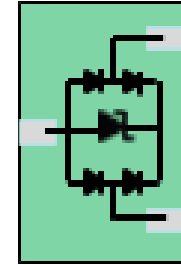
Semtech TVS Device	V _{rw}	Transient Thresholds	C _j	Device configuration & dimensions
RClamp0512TQ (D+, D- data lines)	5V	IEC 61000-4-2 (ESD) ±30kV (Air), ±30kV(Contact) IEC 61000-4-5 (Surge) 20A (8/20μs)	2pF	Pkg dimensions: 1.0 x 0.6 x 0.4mm 
RClamp0582B (D+, D- data lines)	5V	IEC 61000-4-2 (ESD) ±30kV (Air), ±25kV(Contact) IEC 61000-4-5 (Surge) 15A (8/20μs)	1.2pF (max)	Pkg dimensions: 1.6 x 1.6 x 0.75mm 
RClamp7522T (D+, D-, Vbus)	5V	IEC 61000-4-2 (ESD) ±25kV (Air), ±15kV(Contact) IEC 61000-4-5 (Surge) 4A (8/20μs)	0.4pF (max)	Pkg dimensions: 1.0 x 0.7 x 0.4mm 
uClamp0571P (USB Vbus)	5V	IEC 61000-4-2 (ESD) ±30kV (Air), ±30kV(Contact) IEC 61000-4-5 (Surge) 80A (8/20μs)	675pF (max)	Pkg dimensions: 1.6 x 1.0 x 0.5mm 

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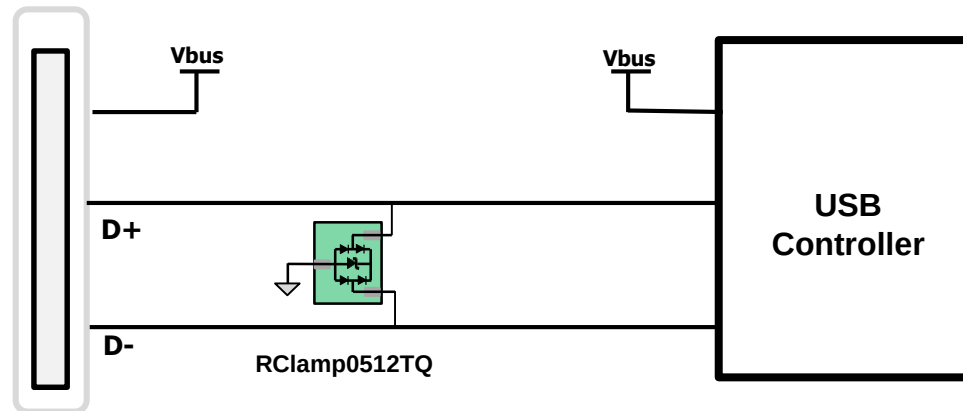


RCLAMP0512TQ – D+, D- data lines

- 5V Working Voltage
- Low Capacitance: 2pF i/o to gnd
- Routing possible on one signal layer
- Low-clamping voltage performance
- High Surge Rating: 20A Ipp (8x20μs)
- AEC-Q100 Qualified for Automotive Apps



RClamp0512TQ



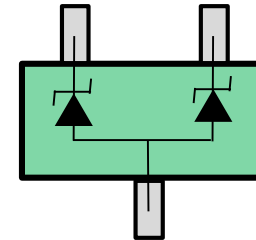
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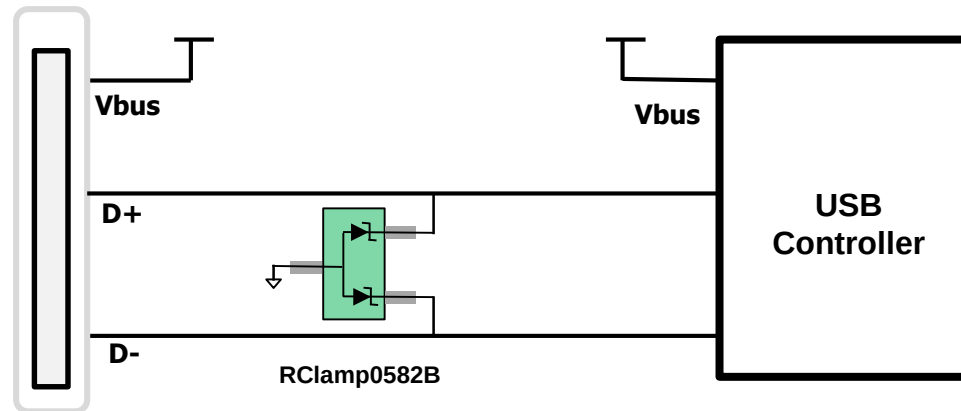


RCLAMP0582B – D+, D- data lines

- 5V Working Voltage
- High ESD Immunity:
- Low Capacitance: 1.2pF max
- Low-clamping voltage performance
- High Surge Rating: 15A Ipp (8x20μs)



RClamp0582B

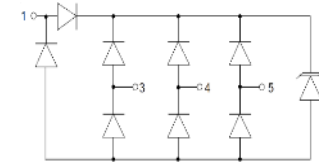
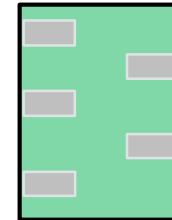


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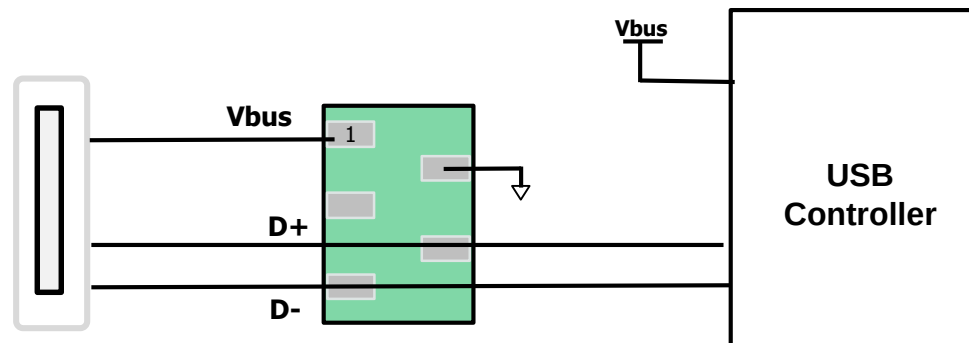


RCLAMP7522T – D+, D-, Vbus

- 5V Working Voltage
- Protects up to 3 lines
- High ESD immunity: $\pm 25\text{kV}$ air, $\pm 15\text{kV}$ contact
- Low capacitance: 0.25pF (typ)
- Low-clamping voltage
- Flow-through routing
- Ultra small DFN package:
1.0 x 0.7 x 0.4mm



RClamp7522T

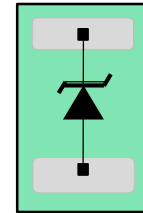


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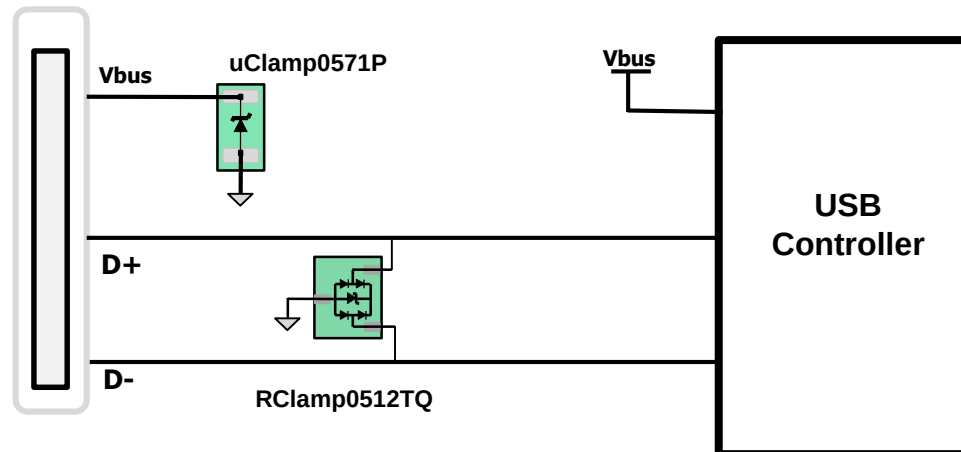


UCLAMP0571P – Vbus

- 5V Working Voltage
- 1-line protection
- Surge Immunity: 80A (8x20μs)
- Low-dynamic resistance
- Small single-line DFN package:
1.6 x 1.0 x 0.5mm



UClamp0571P





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