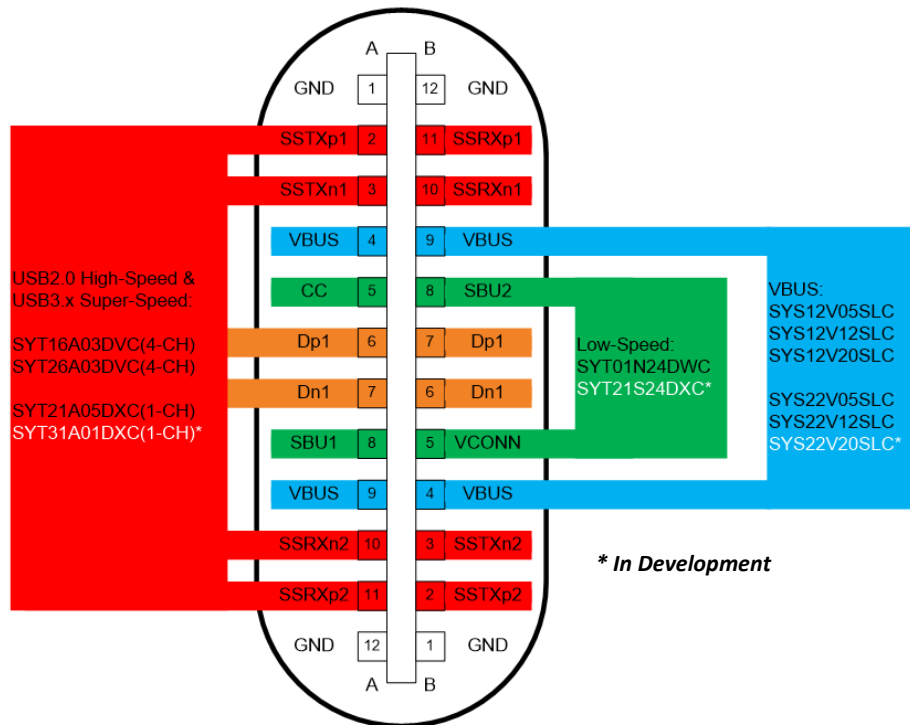




# USB Type C Protection

A Range of ESD and Surge Protection Devices suitable for *USB-C Data, VBUS and Logic lines*



The ubiquitous use of Universal Serial Bus (USB) for providing data communication and power between computers and associated peripherals has been further extended with the advent of USB3.1 Type-C back in 2017 where the USB connector changed to the TYPE C format in readiness for the provision of more power (up to 100W) and higher speed, namely Superspeed+(10Gbit/s) and beyond.

The USB Type-C specification provides many challenges to the designer, having to provide a good level of ESD and Surge protection without degrading the signal integrity and high data rates.

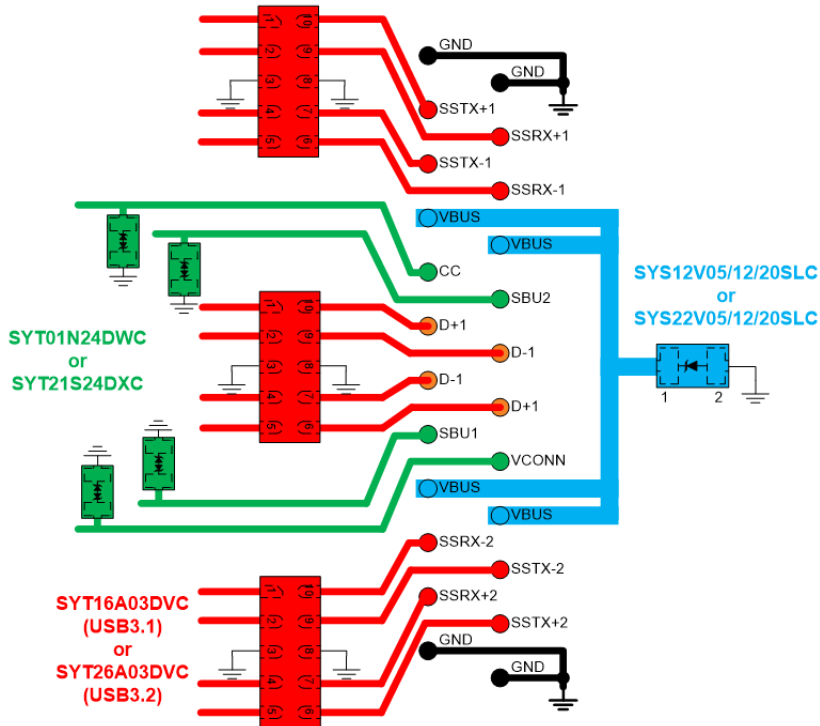
With this in mind, engineers need ESD and Surge protection devices with tiny packages (from 2.5mmx1.0mm to 0.6mmx0.3mm) that can offer extremely low parasitic capacitances and inductances, but are still able to offer the high levels of ESD protection against IEC61000-4-2 AIR & CONTACT discharge and IEC61000-4-5 Surge test standards. Silergy offers the widest selection of protection devices with tiny packages whilst ensuring the best signal integrity on the market.

*High Signal Integrity - Space Saving - Robust Performance*  
*Silergy's ESD solutions simplify the Art of Protection for USB-C*



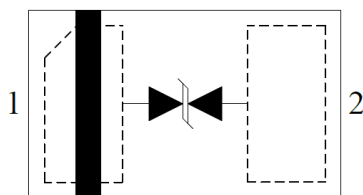
# USB 3.1 Type C Protection

Protection for CC, SBU and VCONN

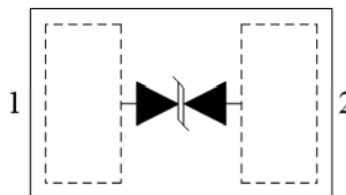


Part Number	Voltage (V)	Ch	V <sub>BR</sub> (V)	C <sub>j</sub> @0V (pF)	IPP (8/20us) (A)	V <sub>c</sub> @IPP (V)	IEC61000-4-2 (kV)	Package
<a href="#">SYT01N24DWC</a>	24	1	33	12	4	42	+/-30	DFN1.0x0.6-2L
SYT21S24DWC <sup>1</sup>	24	1	30	0.2	7	7	+/-15	DFN0.6x0.3-2L

1: In Development



DFN0.6x0.3-2L\*



DFN1.0x0.6-2L\*



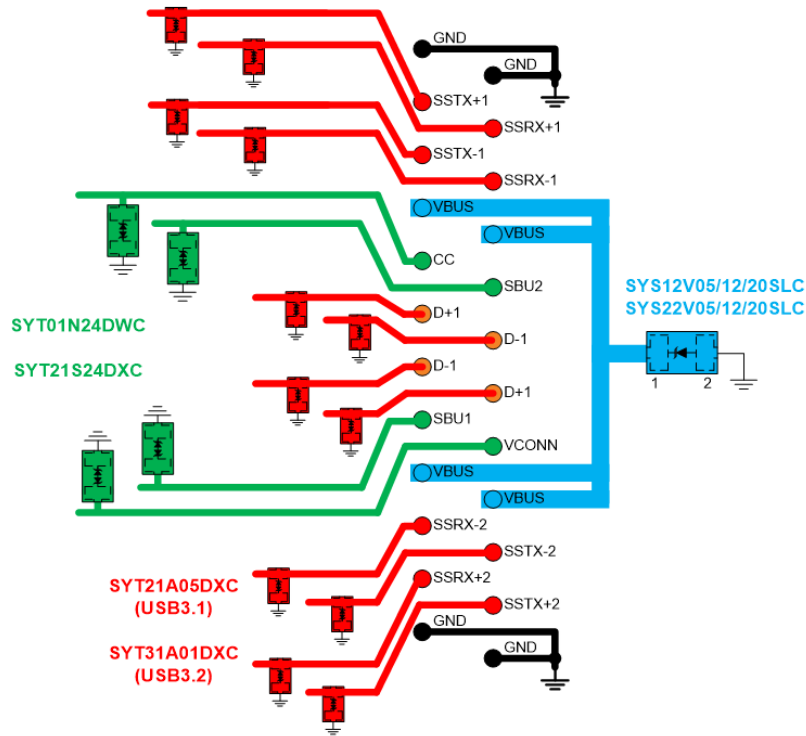
\* Not to scale

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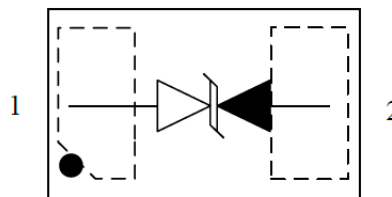
# USB 3.1 Type C Protection

Protection for VBUS



Part Number	Voltage (V)	Ch	$V_{BR}@1mA$ (V)	$C_j @0V$ (pF)	IPP (8/20us) (A)	$V_c @ IPP$ (V)	IEC61000-4-2 (kV)	Package
SYS12VxxSLC	5/12/20	1	8/13.8/24	1100	100/45/25	13.5/24/32	+/-30	DFN1.6x1.0-2L
SYS22VxxSLC	4.5/5/12/20	1	5/6.5/13.8/24	1100	240/200/100/55	13/14/20 <sup>1</sup> /32	+/-30	DFN1.6x1.0-2L

1: In Development



DFN1.6x1.0-2L\*



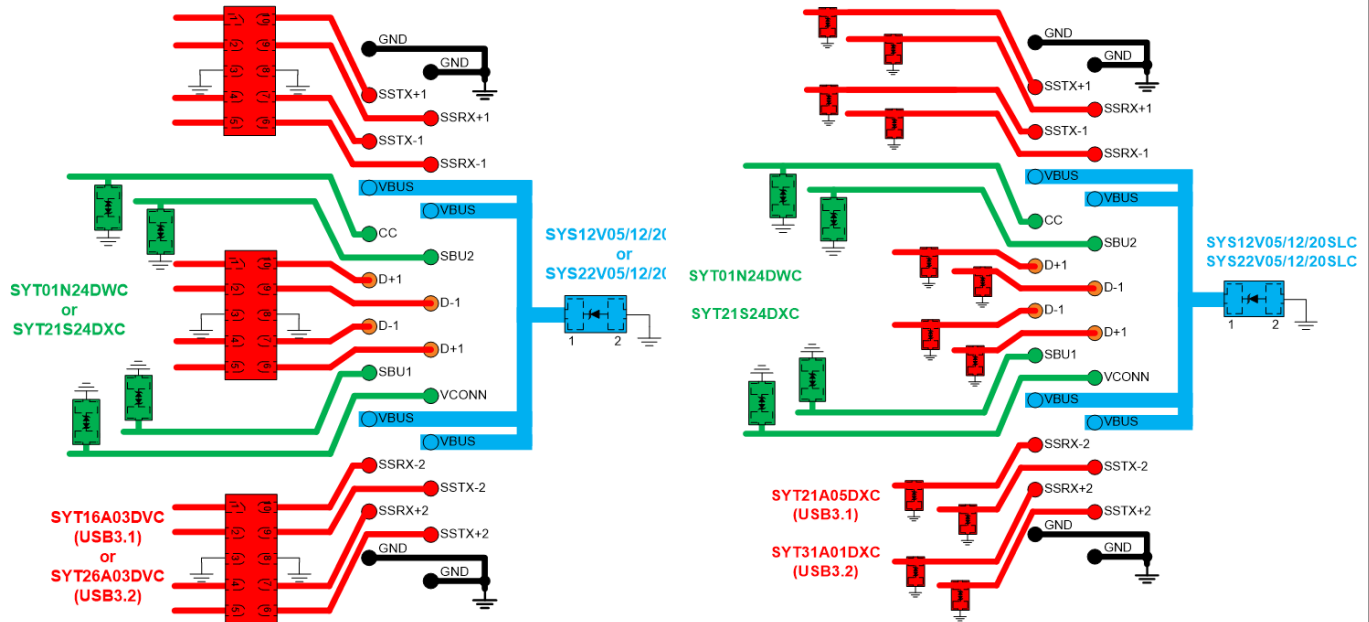
\* Not to scale

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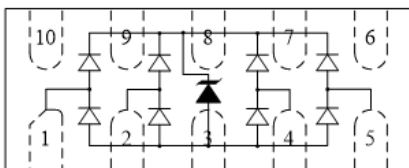
# USB 3.1 Type C Protection

Protection for Data (D, SSRX & SSTX)

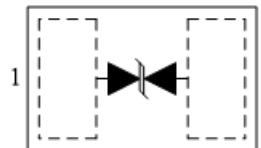
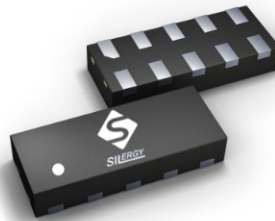


Part Number	Voltage (V)	CH	V <sub>BR</sub> (V)	C <sub>j</sub> @0V (pF)	IPP (8/20us) (A)	V <sub>c</sub> @IPP (V)	IEC61000-4-2 (kV)	Package
SYT16A03DVC	3.3	4	9	0.3	7	6	+/-16	DFN2.5x1.0-10L
SYT26A03DVC	3.3	4	9	0.35	7	5	+/-15	DFN2.5x1.0-10L
SYT21A05DXC	5	1	9	0.2	9	6	+/-20	DFN0.6x0.3-2L
SYT31A01DXC <sup>1</sup>	1.5	1	5.5	4	4	4	+/-15	DFN0.6x0.3-2L

1: Sampling in Q1 2021



DFN2.5x1.0-10L\*



DFN0.6x0.3-2L\*



\* Not to scale

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