

USB

Power Delivery Protection

Bourns[®] PortNote[®] solutions provide protection recommendations for typical port threats.

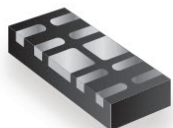
Solution Products



MF-LSMF300/24X



CDDFN2-T5.0LC



CDDFN10-3324P



SRP6540-100M

Objective

The USB Power Delivery Specification enables the maximum functionality of USB by providing more flexible power delivery along with data over a single cable. Increased and low power levels (10-100 W) are delivered with maximum efficiency. The power source must be able to provide short circuit current limiting to protect its port from excessive current while at the same time maintaining the maximum power needed by the peripheral without accidentally tripping. This solution provides this protection.

Benefit

In addition to providing port protection from excessive current as mandated by power delivery, this is a cost-effective solution when compared to a separate overcurrent protection IC.

Solution

- 1 Multifuse[®] PPTC Resettable Fuse:
MF-LSMF300/24X
(Profile 2: 9 V, 3 A, Profile 3: 15 V, 3 A)
- 2 5.0 V TVS Diodes:
CDDFN2-T5.0LC
- 3 4-Channel 3.3 V TVS Diode Arrays:
CDDFN10-3324P
- 1 High-Current Power Inductor:
SRP6540-4R7M

Compliance*

UL60950, USB PD 2.0, USB 3.1

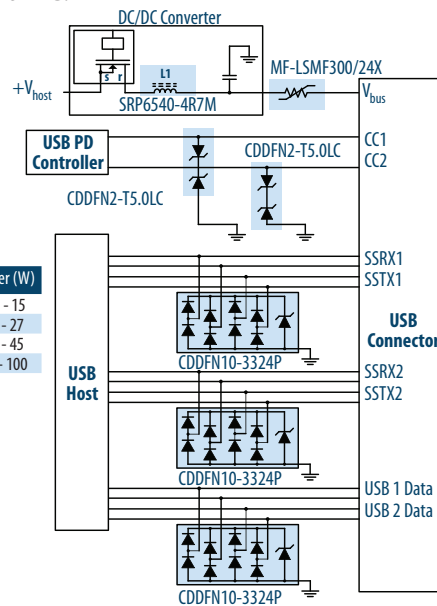
Alternate Recommendations

MF-MSMF150/16X or

MF-SMDF150 (Profile 2: 12 V, 1.5 A)

*The schematic illustrates a possible combination of the solution products to achieve the stated protection goal and does not constitute the complete circuit design. Customers should verify actual device performance in their specific circuits and applications.

Profile	V _{bus}	Power (W)
1	5	7.5 - 15
2	5 9	15 - 27
3	5 9 15	27 - 45
4	5 9 15 20	45 - 100



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