How to Avoid the Wrong Power Supply

Designing A Custom Supply

1 Specs
What to Remember

- Key requirements should be specified first:
  - Output Power
  - Output Voltage
  - Output Current (should be maximum spec)
  - Input Voltage
  - Form Factor
  - Mounting Requirements
  - Application-Specific Approvals (Ex: vibration, ruggedness, ambient for military/industrial or safety approvals for medical)
- Some supplies will need UL qualification (additional input range)
- Size of converter can be reduced by specifying difference needed between peak and average current
- Remember turn on and off voltage for supplies with battery operation
- Cooling and thermal requirements
- Hookup/connector requirements
- Design team should be able to find an optimal supply that meets best cost and specifications

2 Cost
Will it Be Worth It?

- A custom supply will cost more up-front
  - NRE Cost
  - Design Cost
  - Agency Approvals
- Custom supplies will last longer and save money on repairs in the long run as they are designed for your specific application
- They will cost more, but the supply will meet specifications perfectly
- If cost is too high, a good design team should know where to compromise on the design to save money

3 Time
How Long Should it Take?

- A custom supply will take a lot longer than a standard
- Prototype can take 2-3 months
- Full production can take 6 months
- Custom supplies should not be considered at the last minute!

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