Calculating the current carrying capability of a PCB trace.

The current carrying capability of a PCB trace may be calculated from the following relationship:

$$w = \left(\frac{1}{1.4 \cdot h}\right) \cdot \left(\frac{I}{k \cdot \Delta T^{0.421}}\right)^{1.379}$$

Here,

w = minimum trace width required to carry a current of I ( amps) h = thickness of the copper cladding in oz/ft<sup>2</sup> k = 0.024 for inner layers and 0.048 for outer layers  $\Delta T$  = maximum permissible rise in temperature over ambient.

It is prudent to limit the temperature rise if possible ( if there is room on the board). i.e provide a margin of safety of, say, 50%. Multiply the result from the above equation by 1.50.

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