

F- PCB Trace Width Calculation:

Saturn calculator:

Conductor Characteristics

Solve For
☒ Amperage [? Help](#)
☐ Conductor Width

Plane Present?
☐ No
☐ Yes

Conductor Width
0.254 mm

Conductor Length
25.4 mm

PCB Thickness
1.5748 mm

Frequency ☐ DC
1 MHz

Parallel Conductors?
☐ No
☐ Yes

IPC-2152 with modifiers mode Etch Factor: 1:1

Skin Depth
66.00620 um

Power Dissipation
0.08850 Watts

Conductor DC Resistance
0.04273 Ohms

Skin Depth Percentage
100%

Power Dissipation in dBm
19.4693 dBm

Conductor Cross Section
0.0129 Sq.mm

Voltage Drop
0.0615 Volts

Conductor Current
1.4392 Amps

Options

Base Copper Weight
☐ 9um
☐ 18um
☒ 35um
☐ 53um
☐ 70um
☐ 88um
☐ 106um
☐ 142um
☐ 178um

Units
☒ Imperial
☐ Metric

Substrate Options
Material Selection
FR-4 STD
Er **4.6** Tg (°C) **130**

Plating Thickness
☒ Bare PCB
☐ 18um
☐ 35um
☐ 53um
☐ 70um
☐ 88um
☐ 106um

Temp Rise (°C)
20
Temp in (°F) = 36.0

Ambient Temp (°C)
22
Temp in (°F) = 71.6

Plane Thickness
☒ 0.5oz / 1oz
☐ 2oz

Conductor Layer
☐ Internal Layer
☒ External Layer

Information
Total Copper Thickness
70 um

Via Thermal Resistance
N/A

Print Solve!

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0.254 mm

Conductor Length
25.4 mm

PCB Thickness
1.5748 mm

Frequency ☐ DC
1 MHz

Parallel Conductors?
☐ No
☐ Yes

IPC-2152 with modifiers mode Etch Factor: 1:1

Skin Depth
66.00620 um

Power Dissipation
0.08145 Watts

Conductor DC Resistance
0.07180 Ohms

Skin Depth Percentage
100%

Power Dissipation in dBm
19.1087 dBm

Conductor Cross Section
0.0077 Sq.mm

Voltage Drop
0.0765 Volts

Conductor Current
1.0651 Amps

Options

Base Copper Weight
☐ 9um
☐ 18um
☒ 35um
☐ 53um
☐ 70um
☐ 88um
☐ 106um
☐ 142um
☐ 178um

Units
☒ Imperial
☐ Metric

Substrate Options
Material Selection
FR-4 STD
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Plating Thickness
☒ Bare PCB
☐ 18um
☐ 35um
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Temp Rise (°C)
20
Temp in (°F) = 36.0

Ambient Temp (°C)
22
Temp in (°F) = 71.6

Plane Thickness
☒ 0.5oz / 1oz
☐ 2oz

Conductor Layer
☒ Internal Layer
☐ External Layer

Information
Total Copper Thickness
35 um

Via Thermal Resistance
N/A

Print Solve!

So as we can see above one picture shows an outer layer which can pass higher current than internal layer which is affected by thermal issues.

Online calculator:

Inputs:

Current	1	Amps
Thickness	2	oz/ft ² ▼

Optional Inputs:

Temperature Rise	10	Deg C ▼
Ambient Temperature	25	Deg C ▼
Trace Length	1	inch ▼

Results for Internal Layers:

Required Trace Width	0.391	mm ▼
Resistance	0.0164	Ohms
Voltage Drop	0.0164	Volts
Power Loss	0.0164	Watts

Results for External Layers in Air:

Required Trace Width	0.150	mm ▼
Resistance	0.0427	Ohms
Voltage Drop	0.0427	Volts
Power Loss	0.0427	Watts

Copper Weights

Many designs require specific copper thicknesses to accommodate the current requirements of the design. Sunstone offers a variety of copper weights to allow you to meet your design requirements.

Copper Weight is defined as the weight (in ounces) of copper present in one square foot of area. This parameter indicates the overall thickness of copper on the layer.

Sunstone utilizes the following copper weights for PCB fabrication (pre-plate). Weights measured in oz/ft². The appropriate copper weight can be selected to fit the design requirement.

- **0.5 oz copper** (~17.5µm thick or 0.7 mils) — Available on internal layers if requested as part of a "non-standard" construction. This is also the standard starting copper weight for external layers for PCBs with the 1 oz finished copper weight selection.
- **1 oz copper** (~35µm thick or 1.4 mils) — Standard internal layer copper thickness for "standard construction product for 1 oz and 2 oz finished copper weight selections. This is also the standard starting copper weight on the external layers for PCBs with the 2 oz finished copper weight selection.
- **2 oz copper** (70µm thick or 2.8 mils) — Standard internal layer copper thickness for internal layers on 3 oz finished copper selection. This is the standard starting copper thickness on the external layers for PCBs with the 3 oz finished copper weight selection.
- **Other** Sunstone offers a variety of additional copper weights through a Custom Quote from 0.25 oz/ft² to 6 oz and everything in between.

