

Vorschlag

05.01.2023

FBAP_1-9535-00 Lagenaufbau:

```
1 -----      Cu-Foil  9+35  :End-Cu 44
                Imp/Single-ended
xxxxxxxxxxxxxxxxx Prepreg  106 R1755 58 :55
xxxxxxxxxxxxxxxxx Prepreg  1080R1755LR 74 :70
2 -----      #PWR/GND
##### Core  200 35/35 :270  FR4
3 -----      Imp/Diff.Pair
xxxxxxxxxxxxxxxxx Prepreg  2116R1755HR 122 :115
xxxxxxxxxxxxxxxxx Prepreg  2116R1755HR 122 :115
4 -----      #PWR/Power
##### Core  ??? 35/35 :270  FR4   Bitte hier die Leiterplattendicke anpassen!!!
5 -----      #PWR/ GND
xxxxxxxxxxxxxxxxx Prepreg  2116R1755HR 122 :115
xxxxxxxxxxxxxxxxx Prepreg  2116R1755HR 122 :115
6 -----      Imp/Diff.Pair
##### Core  200 35/35 :270  FR4
7 -----      #PWR/GND
xxxxxxxxxxxxxxxxx Prepreg  1080R1755LR 74 :70
xxxxxxxxxxxxxxxxx Prepreg  106 R1755 58 :55
                Imp/Diff.Pair
8 -----      Cu-Foil  9+35  :End-Cu 44
```

Lagen: 8 Dicke: 2,0mm

Conductor Impedance

Conductor Width (W)

0,24 mm

Conductor Height (H)

0,130 mm

Frequency (MHz)

500

Note:

This calculator uses a complex formula, not the simplified formula. Results track the Sonnet 3D solver.

Er Effective = 2.8877

Zo

50.4355 Ohms

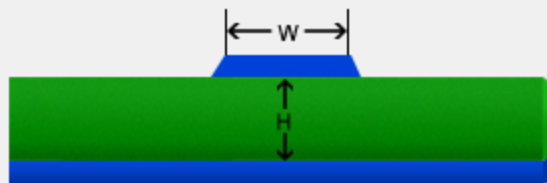
Lo

2.8595 nH/cm

Co

1.1241 pF/cm

Tpd

56.6969 ps/cm

Options

Base Copper Weight

- ☒ 9um
- ☐ 18um
- ☐ 35um
- ☐ 53um
- ☐ 70um
- ☐ 88um
- ☐ 106um
- ☐ 142um
- ☐ 178um

Plating Thickness

- ☐ Bare PCB
- ☐ 18um
- ☒ 35um
- ☐ 53um
- ☐ 70um
- ☐ 88um
- ☐ 106um

Passive Circuits

- ☒ Microstrip
- ☐ Microstrip Embed
- ☐ Stripline
- ☐ Stripline Asym
- ☐ Dual Stripline
- ☐ Coplanar Wave

Information

Total Copper Thickness
44 umConductor Temperature
Temp in (°C) = N/A
Temp in (°F) = N/A

Units

- ☐ Imperial
- ☒ Metric

Substrate Options

Material Selection

Custom

Er

4,0

Tg (°C)

140

Temp Rise (°C)

20

Temp in (°F) = 36.0

Ambient Temp (°C)

22

Temp in (°F) = 71.6

Print

Solve!

Via Thermal Resistance
N/A

Via Count: 10

N/A

Via Voltage Drop

N/A

Differential Pairs

Conductor Width (W)

0,16 mm

Target Zdiff

90 Ohms

Formula Restrictions:

$0.1 < W/H < 3.0$
 $0.1 < S/H < 3.0$

Conductor Spacing (S)

0,12 mm

Conductor Height (H)

0,130 mm

W/H = 1.231

S/H = 0.923

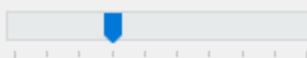
Zdifferential

90.516 Ohms

Zo

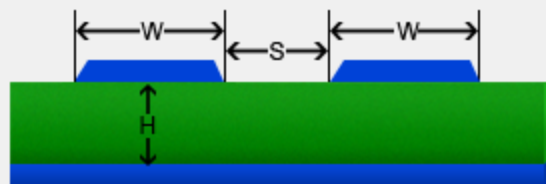
56.423 Ohms

+/- Tolerance = 10%



99.568 Ohms

81.465 Ohms



Options

Base Copper Weight

- ☒ 9um
- ☐ 18um
- ☐ 35um
- ☐ 53um
- ☐ 70um
- ☐ 88um
- ☐ 106um
- ☐ 142um
- ☐ 178um

Units

- ☐ Imperial
- ☒ Metric

Substrate Options

Material Selection

Custom

Er

4,0

Tg (°C)

14

Temp Rise (°C)

20

Temp in (°F) = 36.0

Ambient Temp (°C)

22

Temp in (°F) = 71.6

Plating Thickness

- ☐ Bare PCB
- ☐ 18um
- ☒ 35um
- ☐ 53um
- ☐ 70um
- ☐ 88um
- ☐ 106um

Differential Layer

- ☒ Edge Cpld Ext
- ☐ Edge Cpld Int Sym
- ☐ Edge Cpld Int Asym
- ☐ Edge Cpld Embed
- ☐ Broad Cpld Shld
- ☐ Broad Cpld NShld

Print

Solve!

Information

Total Copper Thickness
44 um

Via Thermal Resistance
N/A

Via Count: **10**

Conductor Temperature
Temp in (°C) = N/A
Temp in (°F) = N/A

N/A
Via Voltage Drop
N/A

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Embedded Resistors PPM Calculator Crosstalk Calculator Wavelength Calculator Er Effective Ohm's Law Reactance
 Conductor Spacing Conductor Impedance Conversion Data Planar Inductors Plane Calculator Thermal Fusing Current
 Via Properties Conductor Properties Bandwidth & Max Conductor Length Differential Pairs Padstack Calculator Mechanical Information

Differential Pairs

Conductor Width (W)

0,11 mm

Target Zdiff

100 Ohms

Formula Restrictions:

 $0.1 < W/H < 3.0$ $0.1 < S/H < 3.0$

Conductor Spacing (S)

0,15 mm

Conductor Height (H1)

0,230 mm

Conductor Height (H2)

0,200 mm**W/H = 0.237****S/H = 0.323**

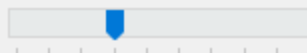
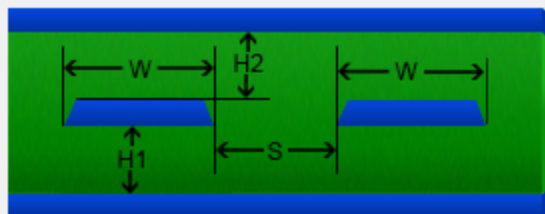
Zdifferential

100.597 Ohms

Zo

58.949 Ohms

+/- Tolerance = 10%

**110.656 Ohms****90.537 Ohms**

Options

Base Copper Weight

- ☐ 9um
☐ 18um
☒ 35um
☐ 53um
☐ 70um
☐ 88um
☐ 106um
☐ 142um
☐ 178um

Units

- ☐ Imperial
☒ Metric

Substrate Options

Material Selection

Custom

Er

4,0

Tg (°C)

138

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

Differential Layer

- ☐ Edge Cpld Ext
☐ Edge Cpld Int Sym
☒ Edge Cpld Int Asym
☐ Edge Cpld Embed
☐ Broad Cpld Shld
☐ Broad Cpld NShld

Print

Solve!

Information

Total Copper Thickness
35 umVia Thermal Resistance
N/AVia Count: **10**

Conductor Temperature

Temp in (°C) = N/A

Temp in (°F) = N/A

N/A

Via Voltage Drop

N/A

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