

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

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

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

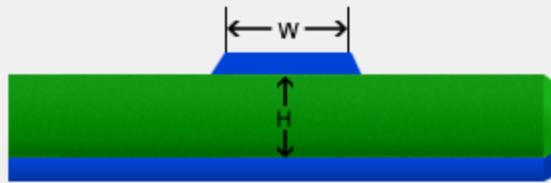
2.8595 nH/cm

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 um

Via Thermal Resistance N/A

Via Count: 10

Conductor Temperature N/A

Temp in (°C) = N/A

Temp in (°F) = N/A

Via Voltage Drop 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!



Follow Us



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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

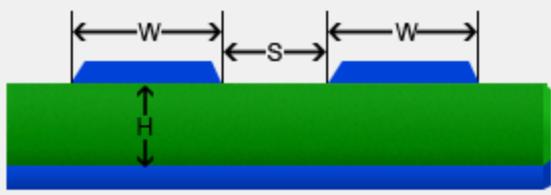
56.423 Ohms

+/- 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~~

Plating Thickness

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

Temp Rise (°C)

20

Temp in (°F) = 36.0

Differential Layer

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

Ambient Temp (°C)

22

Temp in (°F) = 71.6

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

Via Voltage Drop
N/A



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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

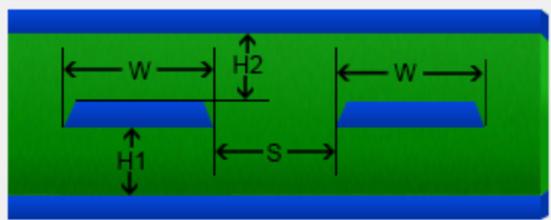
Zdifferential **100.597 Ohms**

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) **130**

- Plating Thickness
- Bare PCB
 - 18um
 - 35um
 - 53um
 - 70um
 - 88um
 - 106um

Temp Rise (°C) **20**

Temp in (°F) = 36.0

- Differential Layer
- Edge Cpld Ext
 - Edge Cpld Int Sym
 - Edge Cpld Int Asym
 - Edge Cpld Embed
 - Broad Cpld Shld
 - Broad Cpld NShld

Ambient Temp (°C) **22**

Temp in (°F) = 71.6

Print **Solve!**

Information

Total Copper Thickness 35 um

Via Thermal Resistance N/A

Via Count: **10**

Conductor Temperature N/A

Temp in (°C) = N/A

Temp in (°F) = N/A

Via Voltage Drop N/A