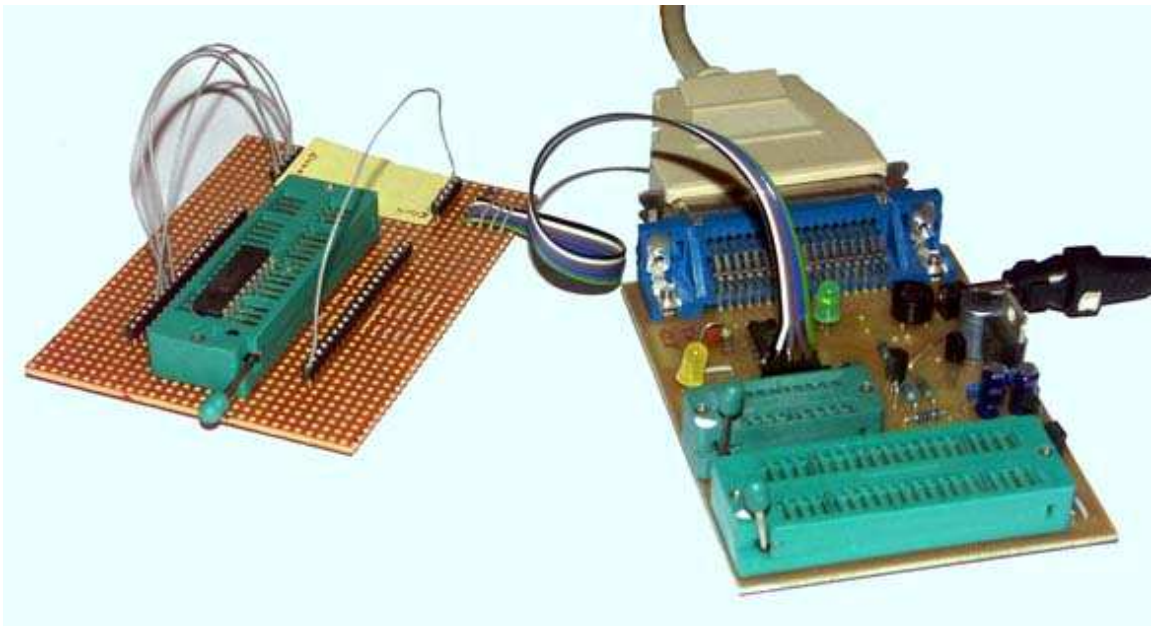


Universal ICSP-Programming-Adapter for all PIC's in DIL-Housings



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Date: 20.05.2007

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1 TERMS OF USE:

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2 Introduction

This universal adapter can be used to connect any PIC-microcontroller/signalcontroller in DIL-housing to a programmer. The programmer has to have an ICSP- or ICD-connector.

Typical programmers that can be used together with this adapter are:

- Brenner8
- Brenner5
- ICD2

To program a PIC inside the adapter, first 5...7 wire-connections have to be plugged in. This has to be done very carefully. A wire, that is plugged into a wrong terminal, can damage the target PIC.

The following pages show the correct wire-connections for the PICs listed below:

- PIC10F20x in 8-pin-DIL-housing
- PIC12Fxxx / PIC16Fxxx in 8/14/20-pin-DIL- housing
- PIC16Fxxx in 18-pin-DIL- housing
- PIC16Fxxx / PIC18Fxxx in 28-pin-DIL- housing
- PIC18F2x31 in 28-pin-DIL- housing
- PIC16Fxxx / PIC18Fxxx in 40-pin-DIL- housing

- dsPIC30Fxxx in 18-pin-DIL- housing
- dsPIC30Fxxx in 28-pin-DIL- housing
- dsPIC30Fxxx General Purpose and Sensor Family in 40-pin-DIL- housing
- dsPIC30Fxxx Motor Control Family in 40-pin-DIL- housing

All black connections are required. The gray connections are often not necessary, but suggested by microchip.

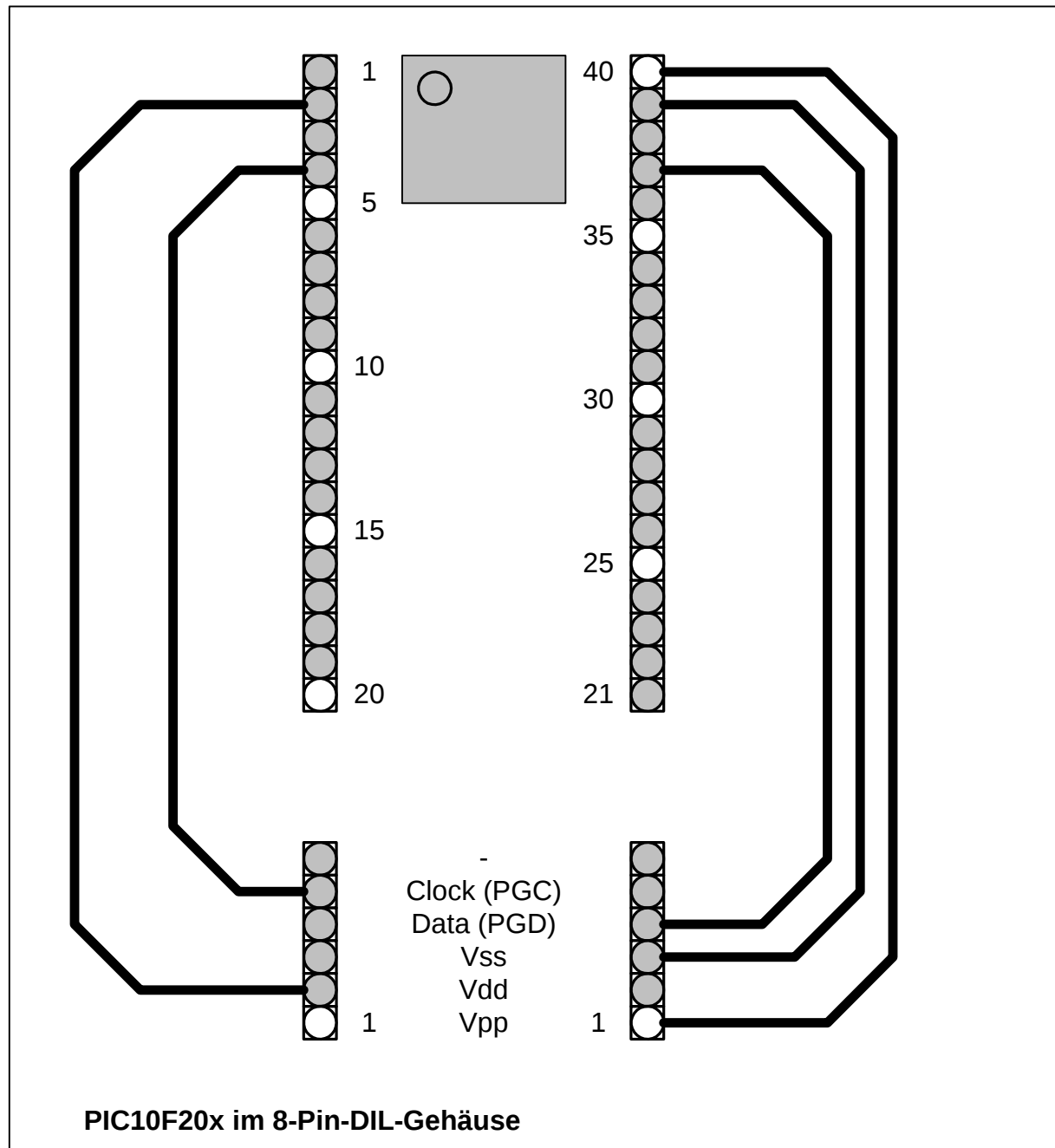
The German labels in the figures can be ignored.

3 Wire-Connections

3.1 PIC-Microcontroller

3.1.1 PIC10F20x in 8-pin-DIL-housing

(Example: PIC10F200/202/204/206)

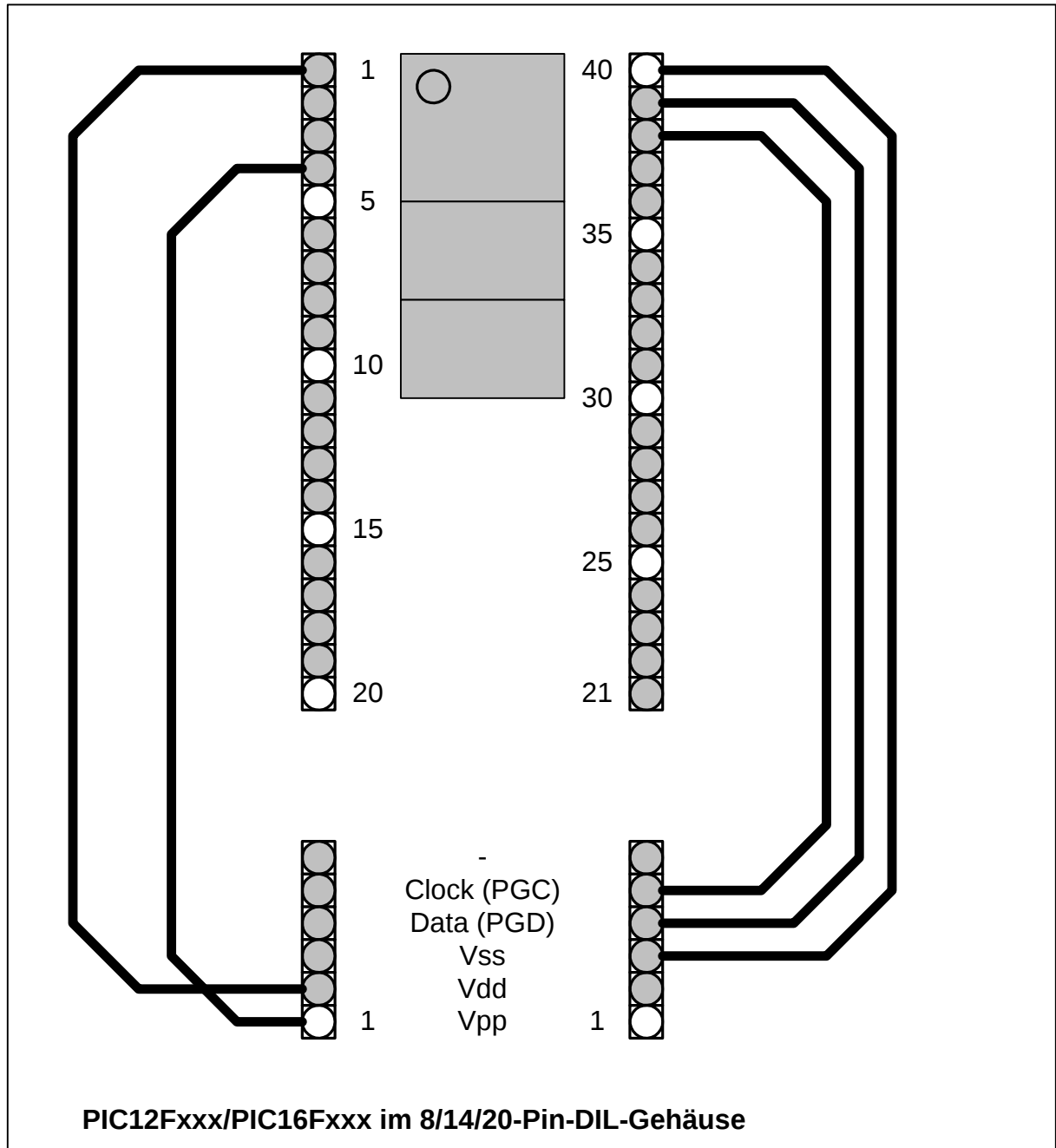


3.1.2 PIC12Fxxx/PIC16Fxxx in 8/14/20-pin-DIL- housing

(Example 8-Pin: PIC12F629 / PIC12F675)

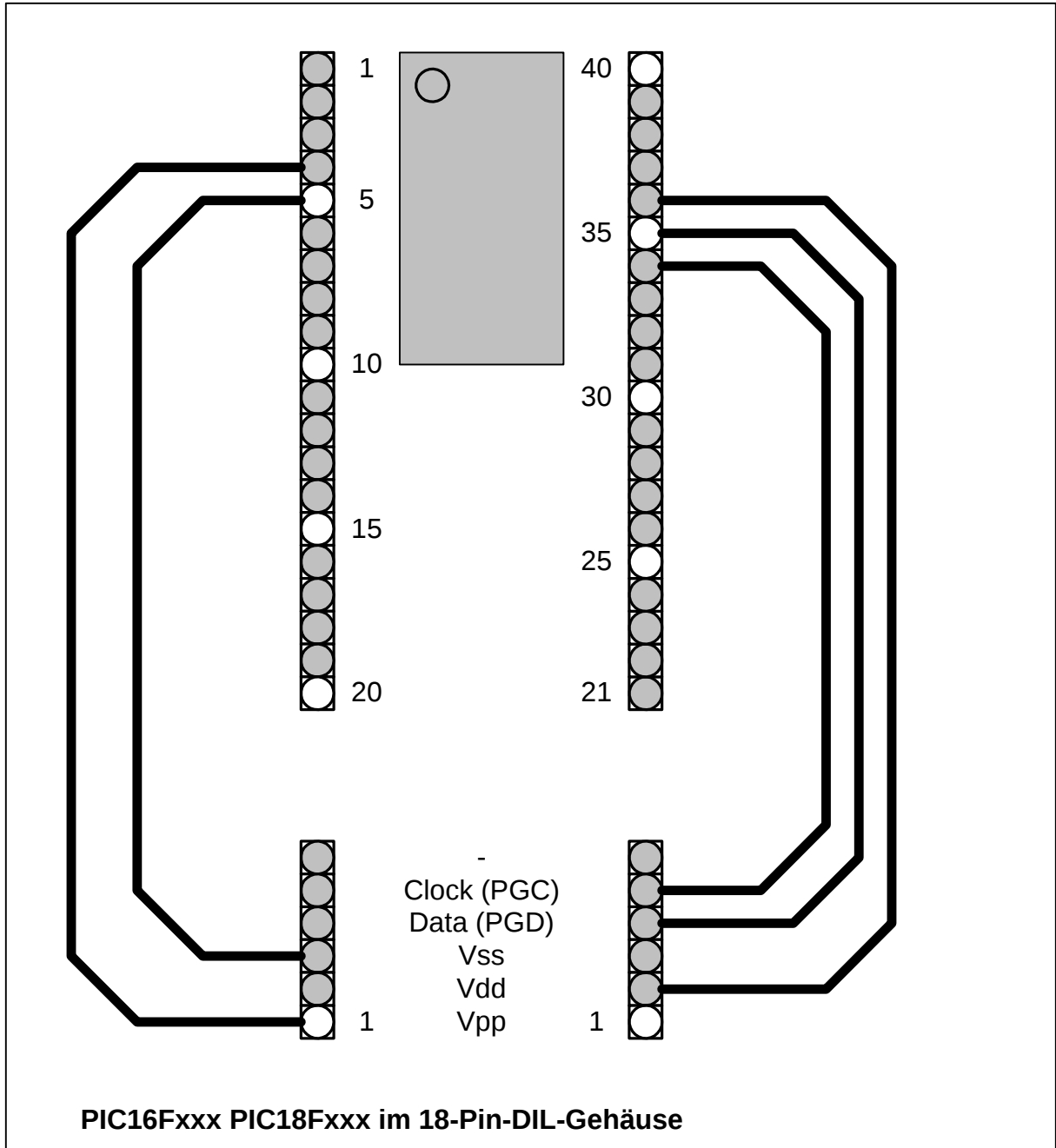
(Example 14-Pin: PIC16F636/684/688)

(Example 20-Pin: PIC16F631/677/685/687/689/690)



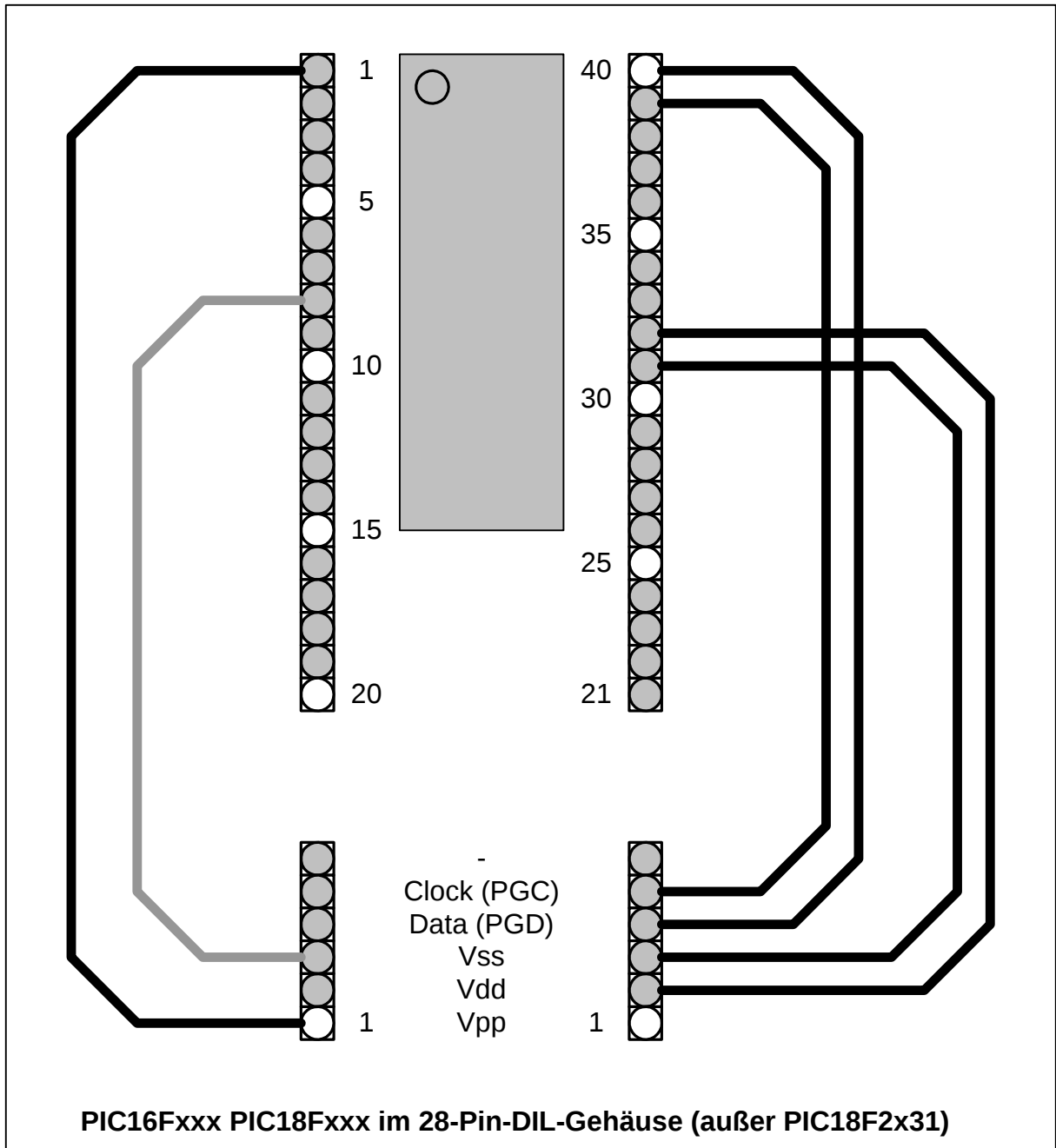
3.1.3 PIC16Fxxx in 18-pin-DIL- housing

(Example: PIC16F84, PIC16F628A)



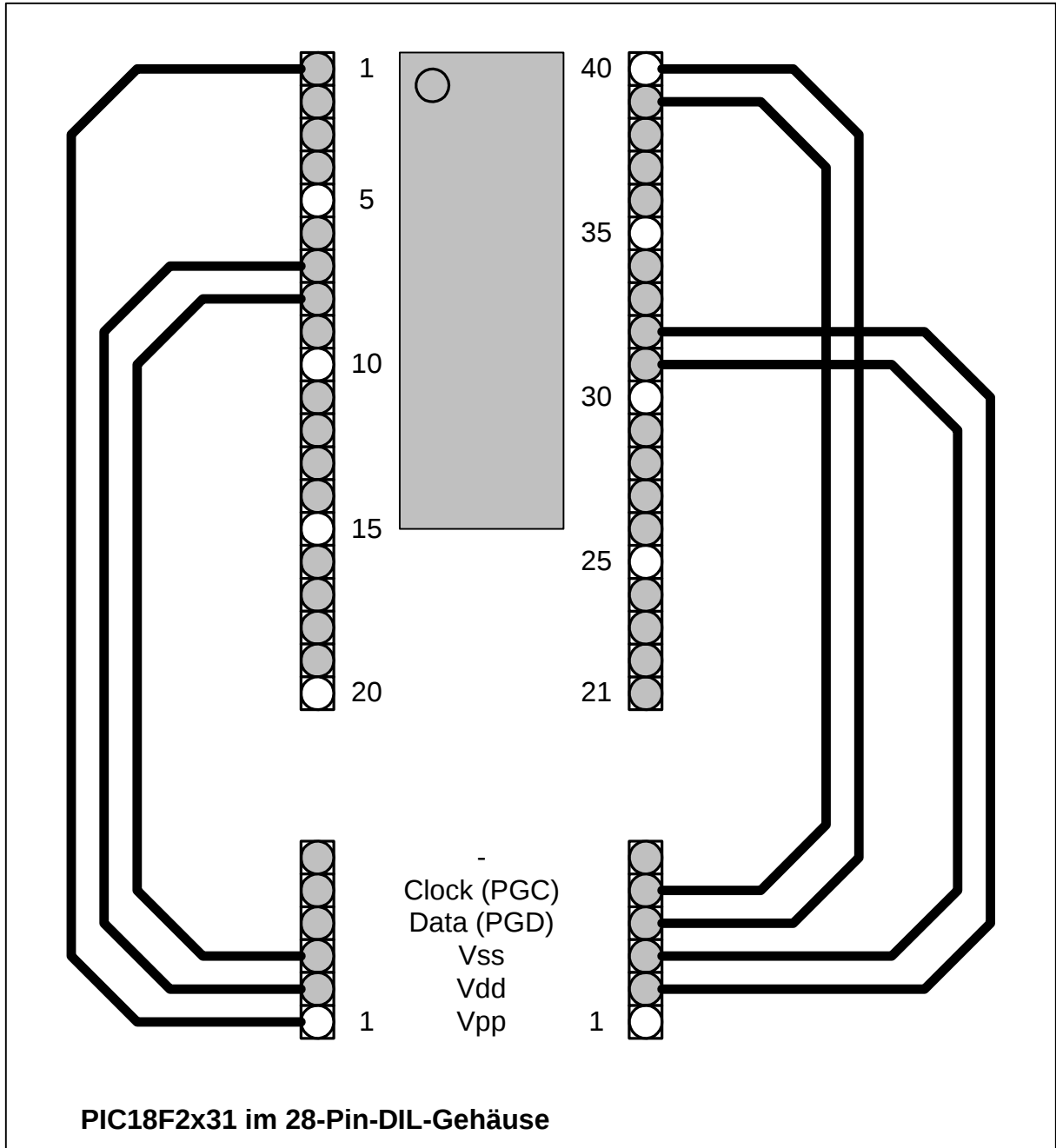
3.1.4 PIC16Fxxx/PIC18Fxxx in 28-pin-DIL- housing (except PIC18F2x31)

(Example: PIC16F876, PIC18F2550)



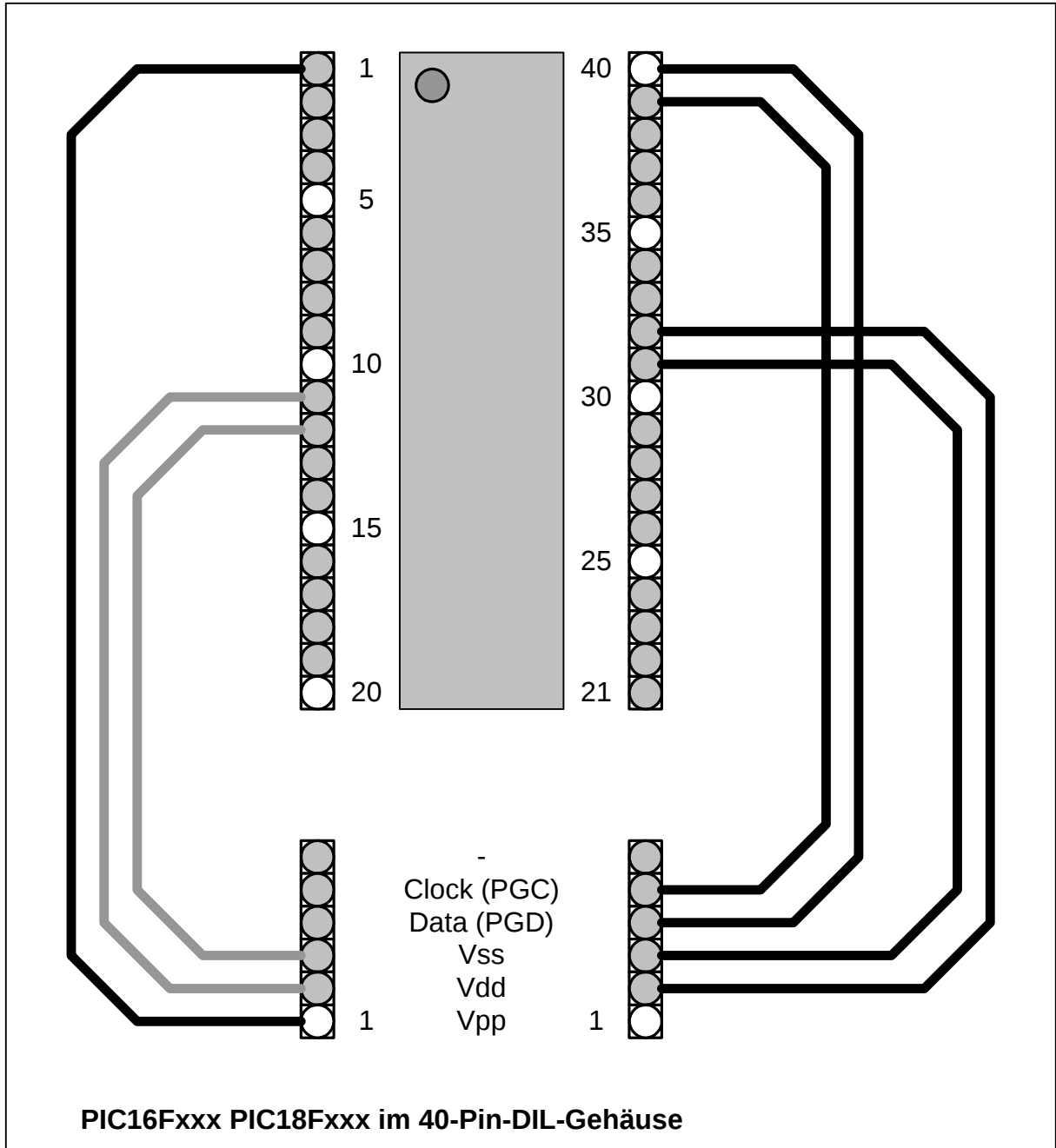
3.1.5 PIC18F2x31 in 28-pin-DIL- housing

(Example: PIC18F2331/2431)



3.1.6 PIC16Fxxx PIC18Fxxx in 40-pin-DIL- housing

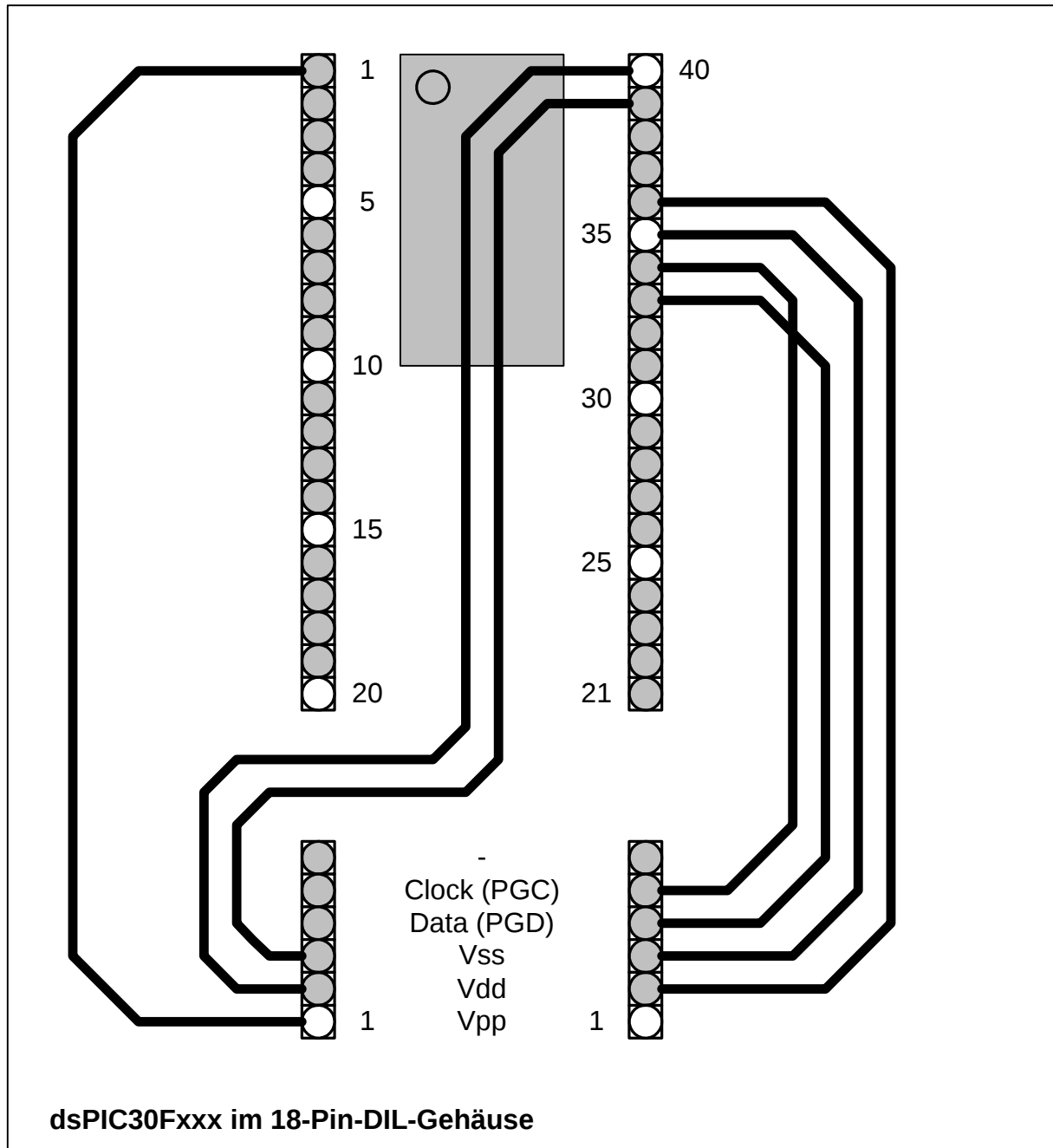
(Example: PIC16F871, PIC16F874(A), PIC16F877(A), PIC16F74, PIC16F77)



3.2 dsPIC-Signalcontroller

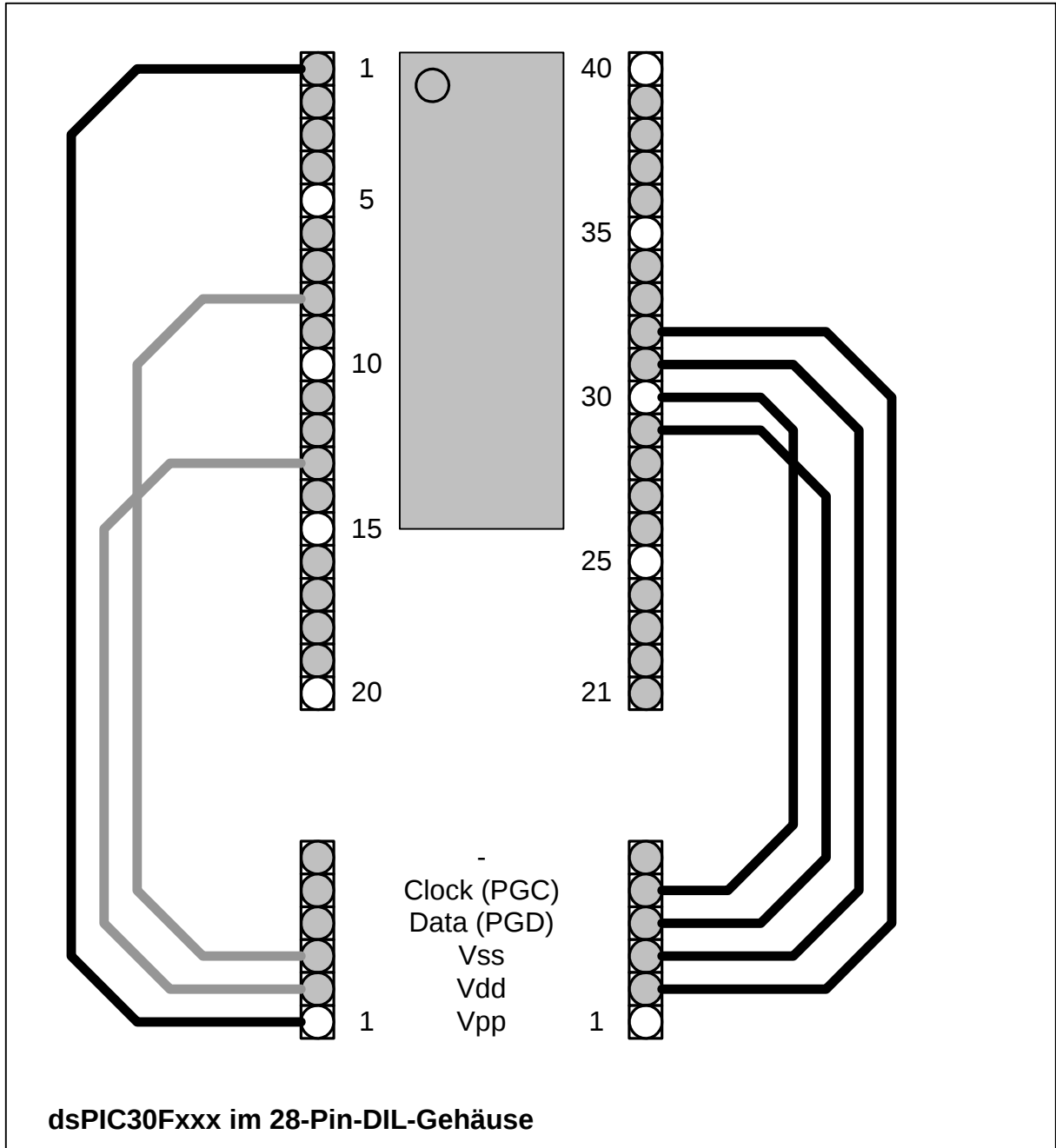
3.2.1 dsPIC30Fxxx in 18-pin-DIL- housing

(Example: dsPIC30F2011/3012)



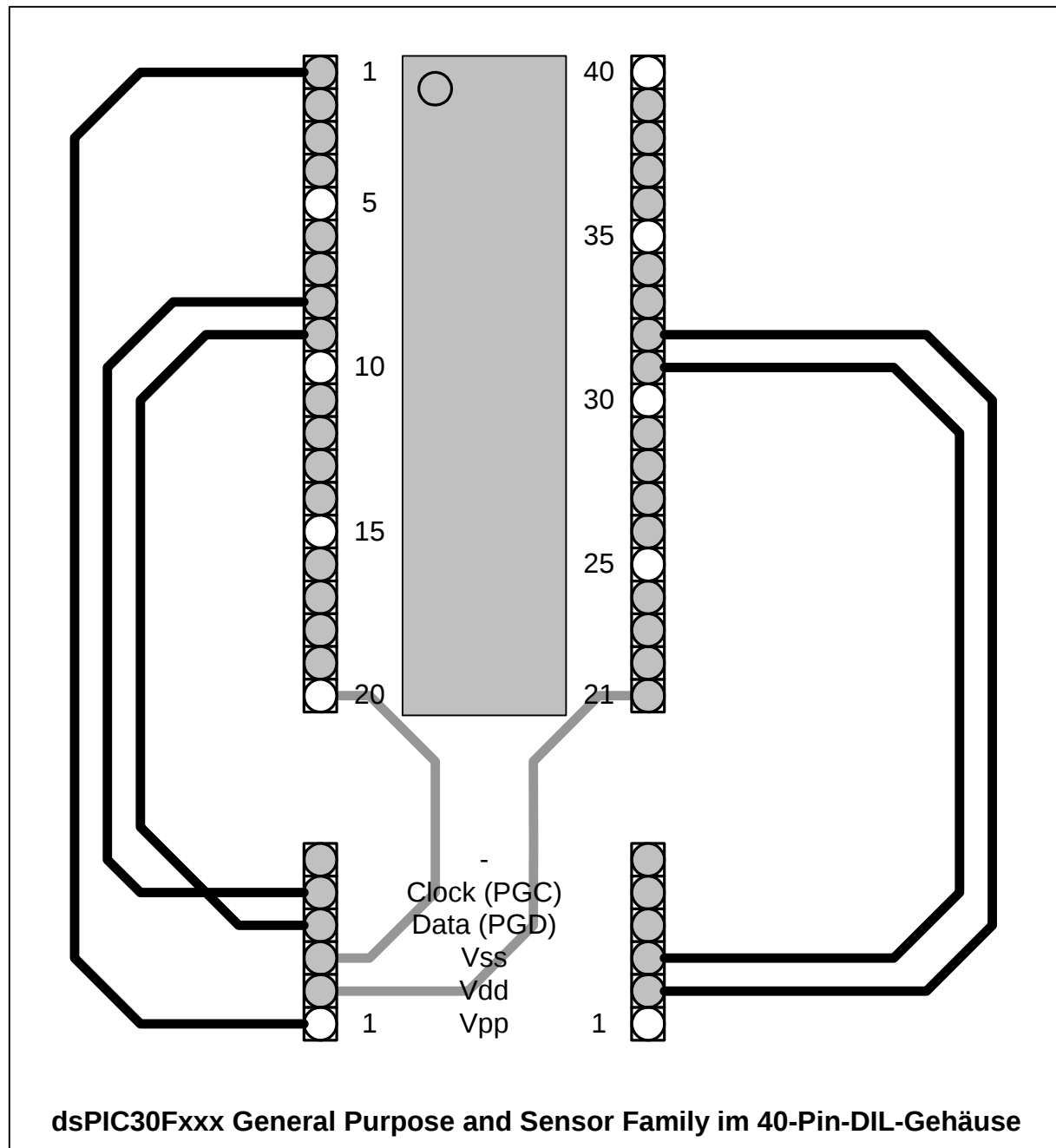
3.2.2 dsPIC30Fxxx in 28-pin-DIL- housing

(Example:dsPIC30F3013)



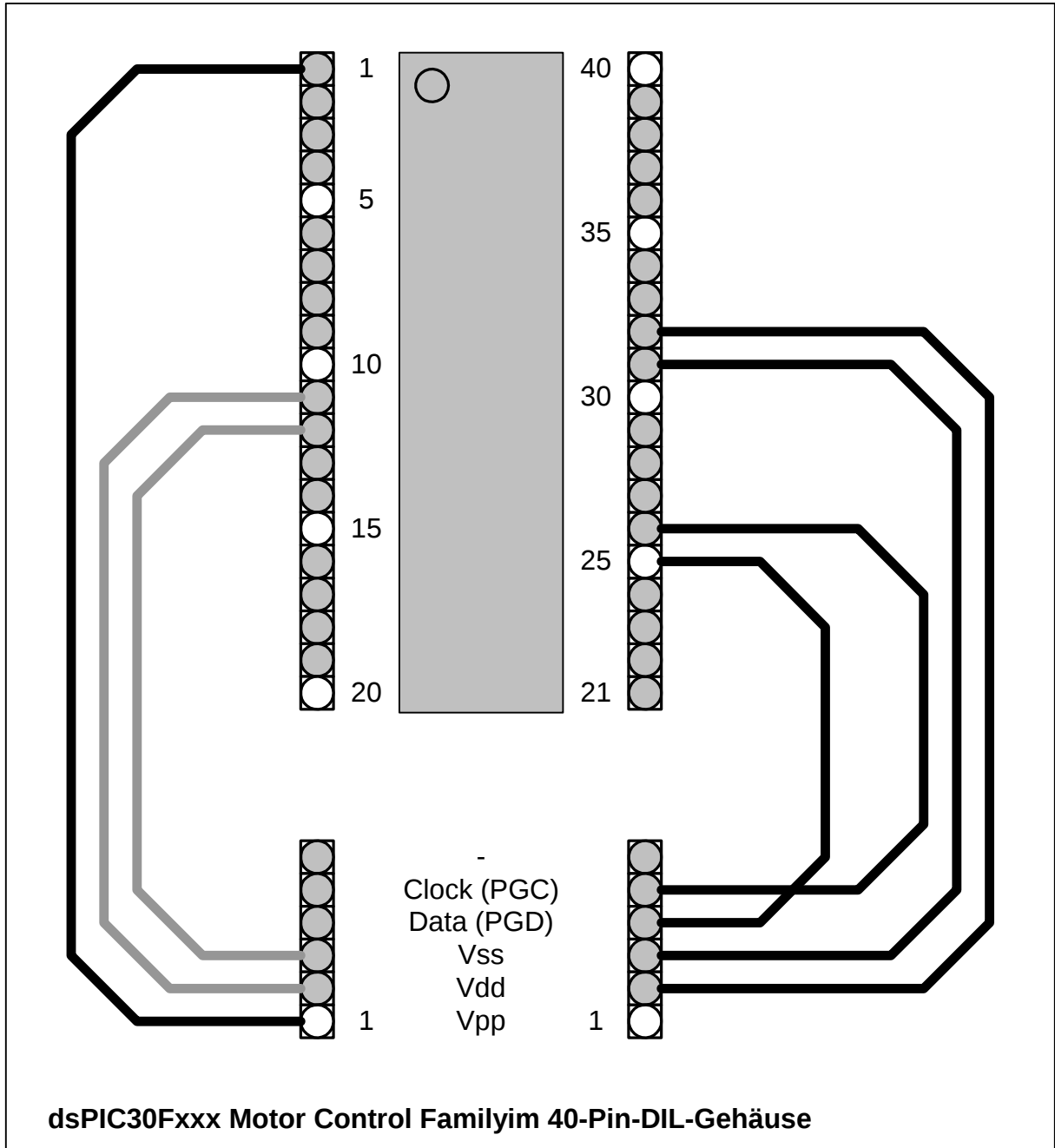
3.2.3 dsPIC30Fxxx General Purpose and Sensor Family in 40-pin-DIL-housing

(Example: dsPIC30F3014, dsPIC30F4013)



3.2.4 dsPIC30Fxxx Motor Control Family in 40-pin-DIL- housing

(Example: dsPIC30F3011, dsPIC30F4011)



4 Description of the hardware

4.1 General

The adapter is used to make the correct connections between the programmer and the target PIC.

The schematic (next page) shows the design of the adapter.

IC1 is a 40-pin ZIF-socket for integrated circuits for 300mil (7.5mm) AND 600mil (15mm) PCB-row spacing. . (e.g. Conrad 189324-xx)

J1 is a 6-pin Western-jack. It can be used as interface to a microchip programmer (e.g. ICD-2)

SV3 is the ICSP-connector (pin 6 is not used). A 5-wire-ICSP-cable can be soldered in directly, or a plug can be used.

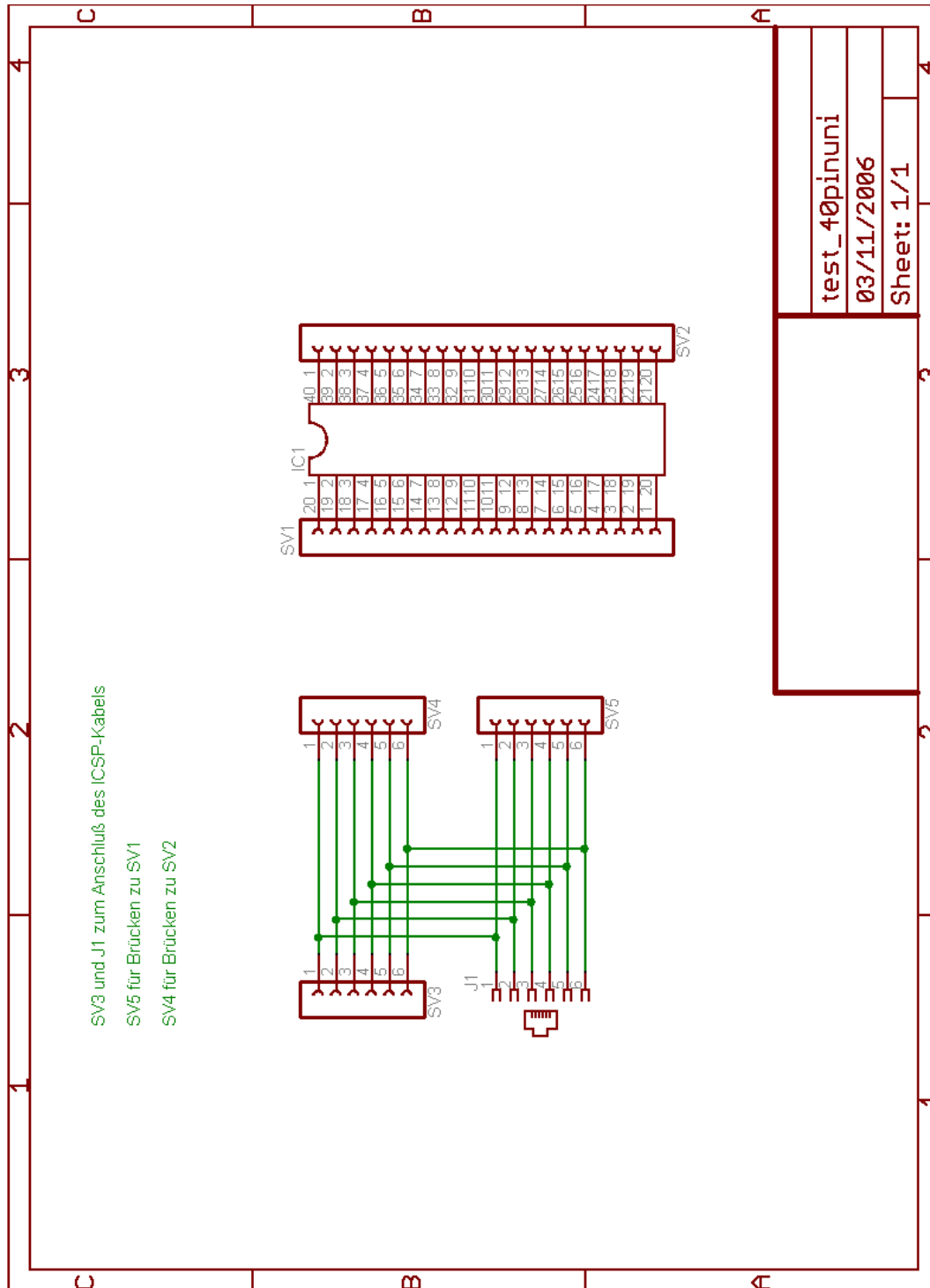
SV1, SV2, SV4 und SV5 are female connectors (e.g. 3 x Conrad 734993-xx)

Some wires have to be used to connect some pins from SV1, SV2 with pins from SV5, SV4. Wire with 0.5 mm diameter can be used.

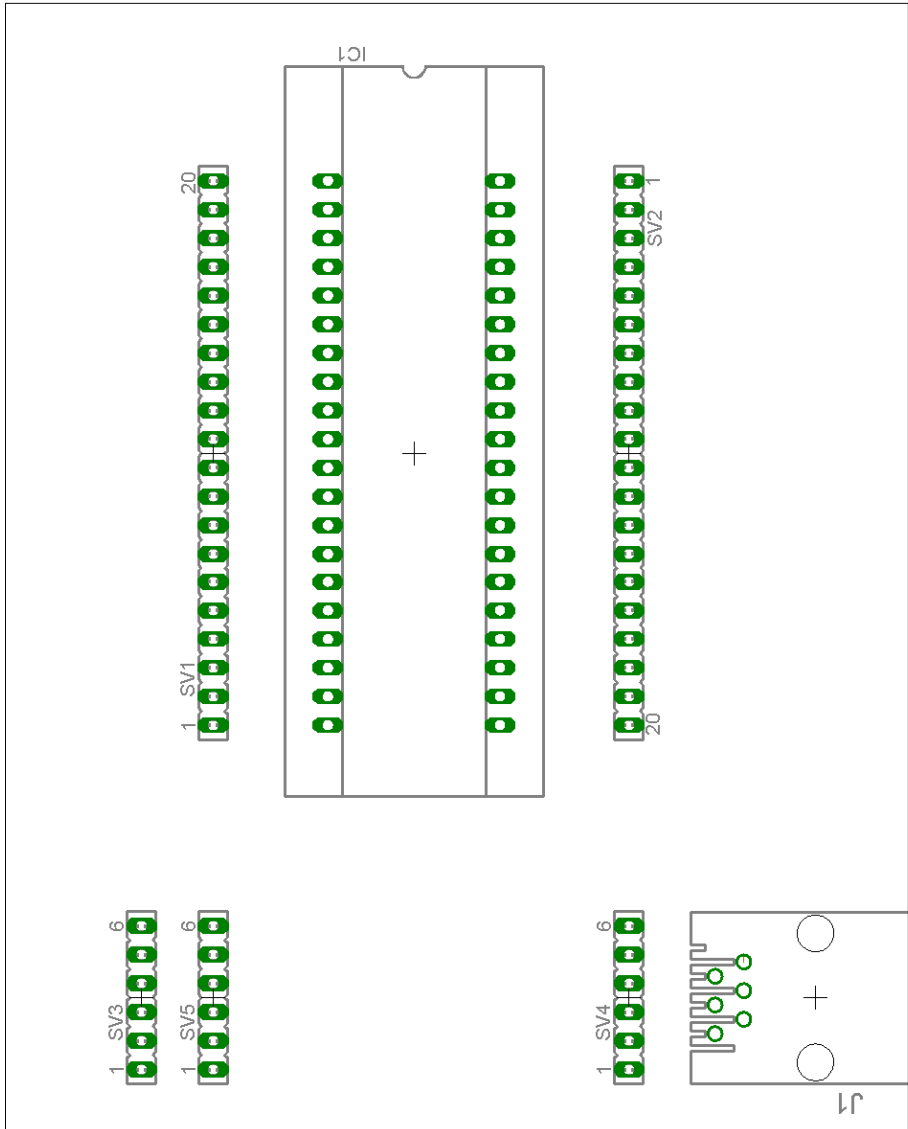
I used a simple copper-stripe universal PCB to build the prototype in less then 30 minutes.

Of course a real printed board can be made instead. My layout is 80mm x 100mm. A normal 75mm x 100mm board can be used, if the ICSP-side of the layout is shortened by 5 mm.

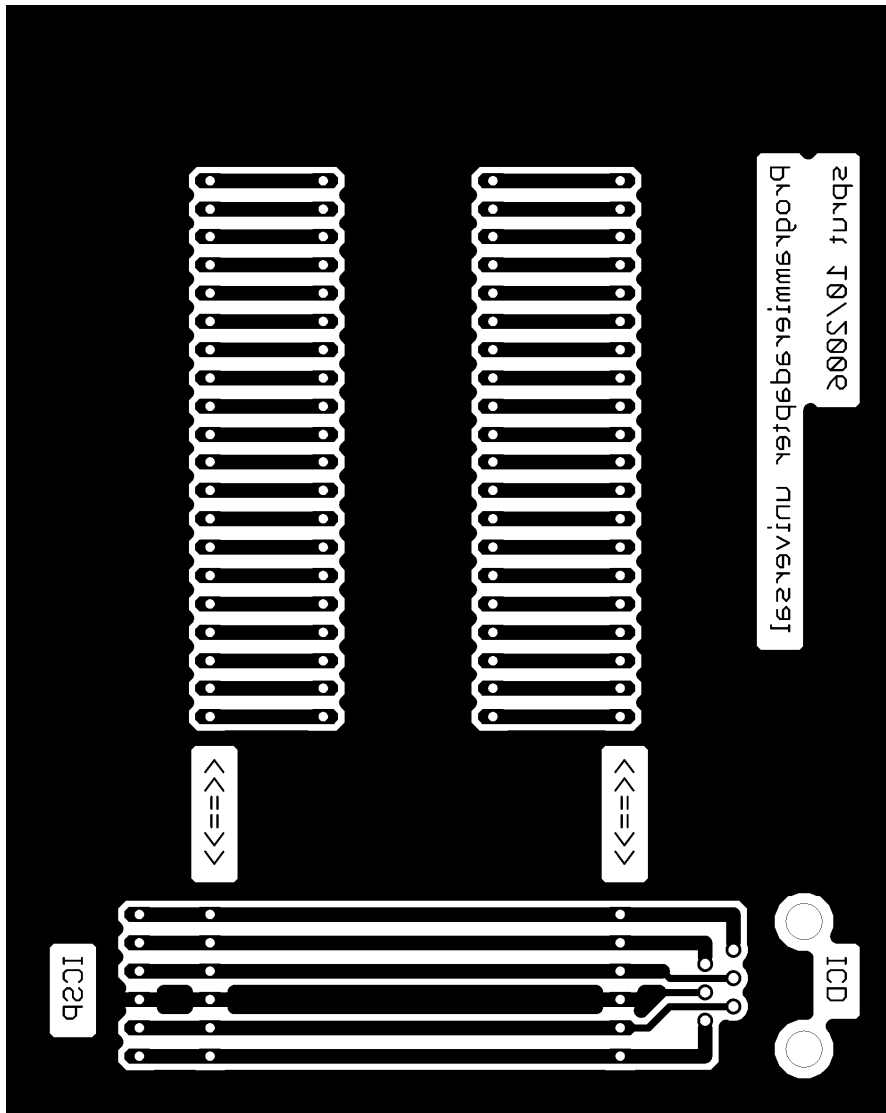
4.2 Schematic



4.3 Parts diagram



4.4 Layout (100mm x 80mm)



5 Document history

09.11.2006

1st version of the document

04.12.2006

Change of

- dsPIC30Fxxx in 18-pin-DIL-housing

20.05.2007

English version