



# MICROCHIP

# dsPIC33FJ16GS504

## dsPIC33FJ16GS504 PIM Information Sheet

The dsPIC33FJ16GS504 PIM is designed to demonstrate the capabilities of the dsPIC33FJ16GS504 family of Switch Mode Power Supply devices using the Explorer 16 Development Board and the PICtail™ Plus daughter boards.

The dsPIC33FJ16GS504 is a high-performance 16-bit Digital Signal Controller within a small 44-pin QFN package.

The dsPIC33FJ16GS504 is equipped with Peripheral Pin Select (PPS), which allows many of the digital peripherals to be remapped to use any number of pins

on the device. The PIM takes advantage of the PPS by using zero ohm resistors to connect the I/O to the 100-pin Explorer 16 Development Board. Simply removing the zero ohm resistors and using the test points associated with each I/O pin (i.e., Pin 1, Pin 2 and so on), allows the designer to re-route the pin to any of the available pins on the Explorer 16 Development Board. This capability enables easier and faster design times. Table 1 shows the mapping between the Explorer 16 functions and the device pins.

**TABLE 1: 44-PIN TO 100-PIN PINOUT**

| Device Pin Number | dsPIC33FJ16GS504           | PIM Pin Number | Functional Description |
|-------------------|----------------------------|----------------|------------------------|
| 1                 | PGC1/EMUC1/SDA/RP7/CN7/RB7 | 1              | SDA/RX                 |
| 2                 | RP20/CN20/RC4              | 58             | LED5                   |
| 3                 | RP21/CN21/RC5              | 59             | LED6                   |
| 4                 | RP22/RN22/RC6              | 60             | LED7                   |
| 5                 | RP19/CN19/RC3              | 61             | LED8                   |
| 6                 | Vss                        | 15             |                        |
| 7                 | Vcap/VDDCORE               | 85             |                        |
| 8                 | TMS/PWM3H/RP11/CN11/RB11   | 19             | PWM3H                  |
| 9                 | TCK/PWM3L/RP12/CN12/RB12   | 22             | LOAD                   |
| 10                | PWM2H/RP13/CN13/RB13       | 24             | PWM2H                  |
| 11                | PWM2L/RP14/CN14/RB14       | 25             | PWM2L                  |
| 12                | PWM1H/RA4                  | 28             | PWM1H                  |
| 13                | PWM1L/RA3                  | 29             | PWM1L                  |
| 14                | RP16/CN16/RC0              |                |                        |
| 15                | RP29/CN29/RC13             |                |                        |
| 16                | AVss                       | 31             |                        |
| 17                | AVDD                       | 30             |                        |
| 18                | MCLR                       | 13             |                        |
| 19                | RP27/CN27/RC11             |                |                        |
| 20                | RP28/CN28/RC12             |                |                        |
| 21                | AN0/CMP1A/RA0              | 34             | Current Sense 1        |
| 22                | AN1/CMP1B/RA1              | 35             | Voltage FB1            |

| Device Pin Number | dsPIC33FJ16GS504                         | PIM Pin Number | Functional Description |
|-------------------|--|----------------|------------------------|
| 23                | AN2/CMP1C/CMP2A/RA2                      | 56             | Current Sense 2        |
| 24                | AN3/CMP1D/CMP2B/RP0/CN0/RB0              | 57             | Voltage FB2            |
| 25                | AN4/CMP2C/CMP3A/RP9/CN9/RB9              | 66             | VIN_Feedback           |
| 26                | AN5/CMP2D/CMP3B/RP10/CN10/RB10           | 20             | Exp_POT                |
| 27                | AN11/RP25/CN25/RC9                       |                |                        |
| 28                | AN10/RP26/CN26/RC10                      | 68             | POT                    |
| 29                | VDD                                      | 62             |                        |
| 30                | Vss                                      | 65             |                        |
| 31                | AN8/CMP4C/RP17/CN17/RC1                  | 69             | Current Sense Boost    |
| 32                | OSCI/CLKI/AN6/CMP3C/CMP4A/RP1/CN1/RB1    | 63             | OSCI                   |
| 33                | OSCO/CLKO/AN7/CMP3D/CMP4B/RP2/CN2/RB2    | 64             | OSCO                   |
| 34                | PGD2/EMUD2/DACOUT/PWM4H/INT0/RP3/CN3/RB3 | 27             | PGD2                   |
| 35                | PGC2/EMUC2/PWM4L/RP4/CN4/RB4             | 26             | PGC2                   |
| 36                | AN9/EXTREF/CMP4D/RP18/CN18/RC2           | 78             | Voltage Feedback Boost |
| 37                | RP23/CN23/RC7                            |                |                        |
| 38                | RP24/CN24/RC8                            |                |                        |
| 39                | Vss                                      | 75             |                        |
| 40                | VDD                                      | 46             |                        |
| 41                | PGD3/EMUD3/RP8/CN8/RB8                   | 83             | Switch                 |
| 42                | PGC3/EMUC3/RP15/CN15/RB15                | 95             | PMB AUX2               |
| 43                | TDO/RP5/CN5/RB5                          | 96             | PMB AUX1               |
| 44                | PGD1/EMUD1/TDI/SCL/RP6/CN6/RB6           | 97             | SCL/TX                 |

**FIGURE 1: 100-PIN HEADER SCHEMATIC**

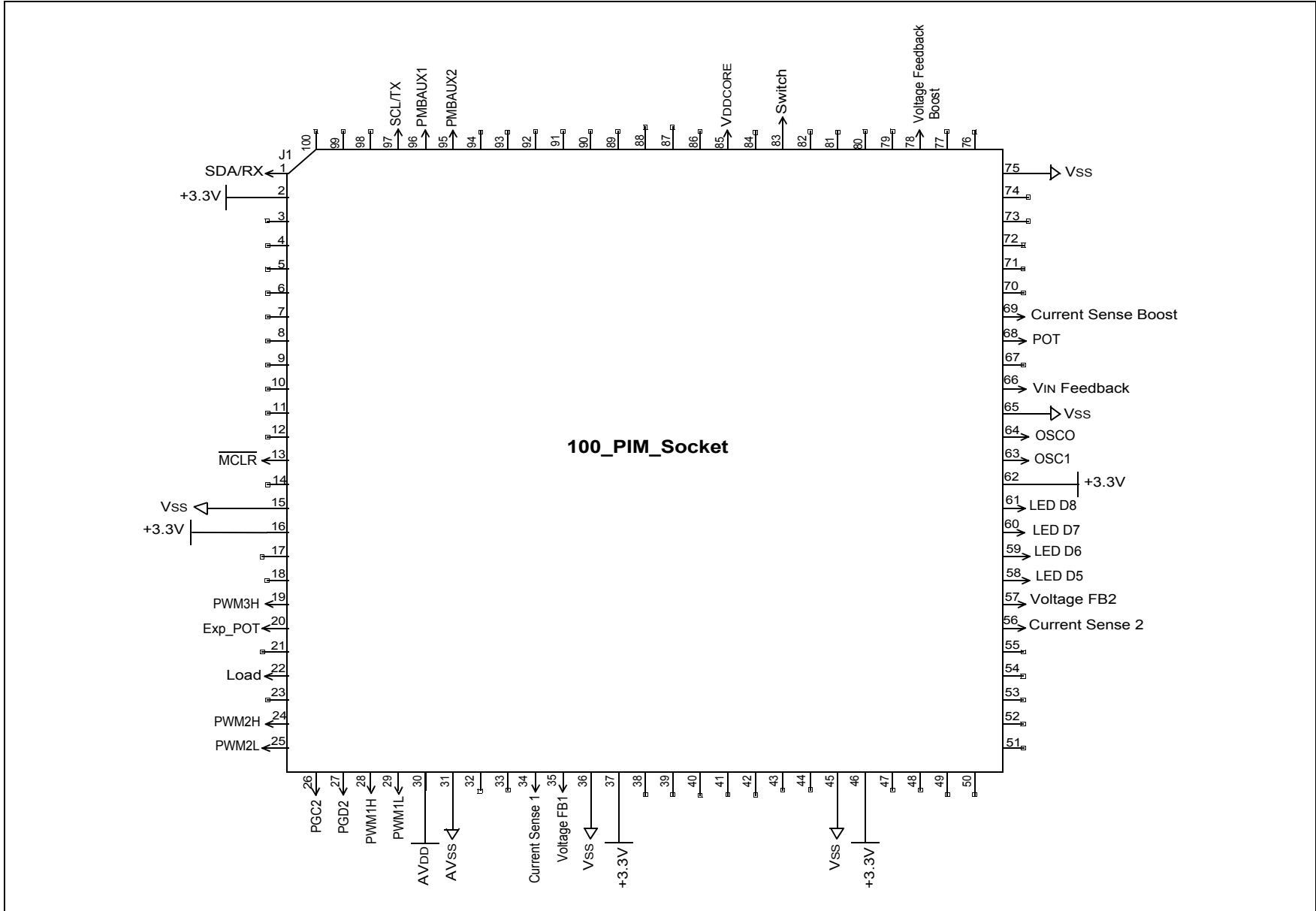
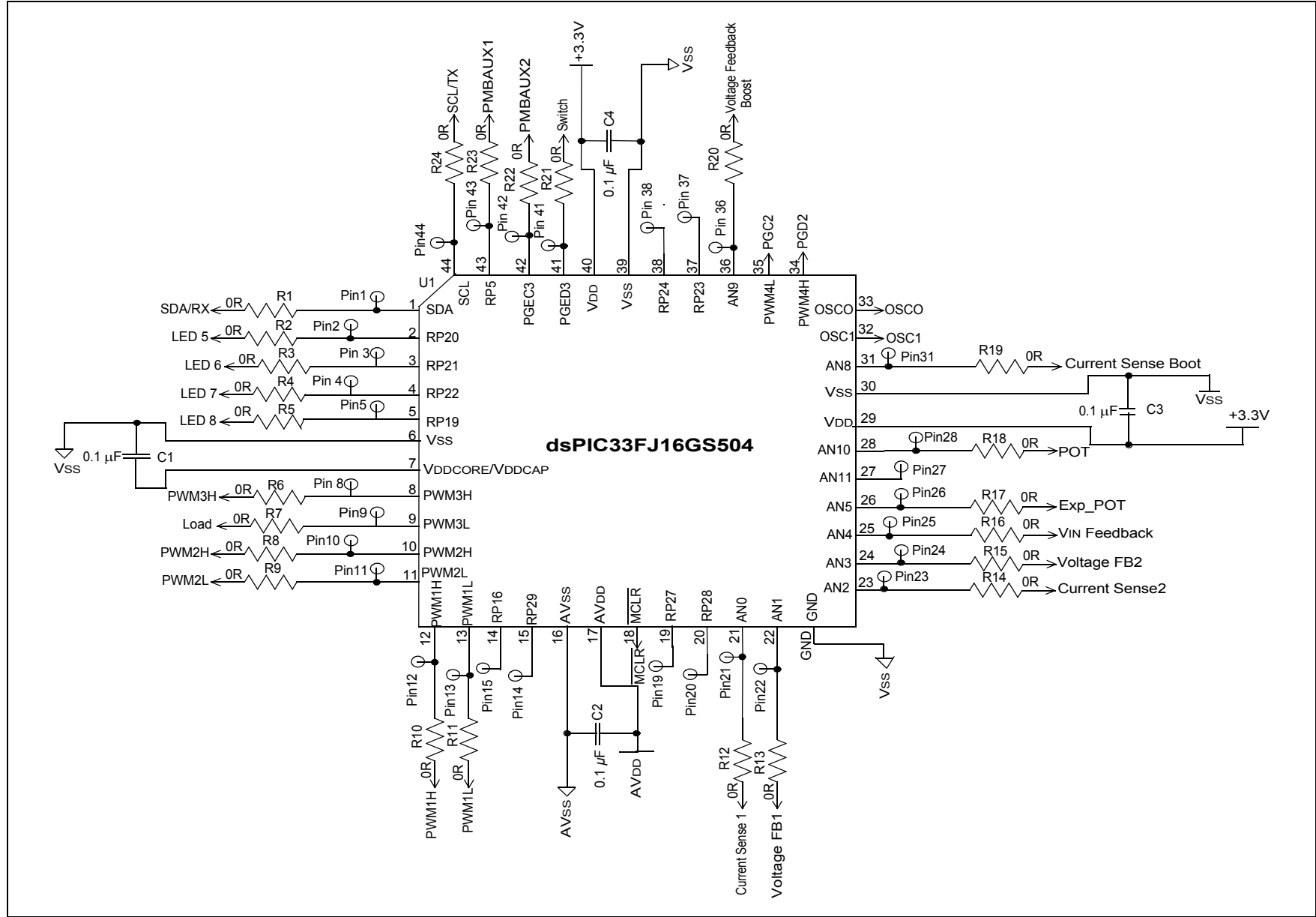


FIGURE 2: 44-PIN DEVICE SCHEMATIC



dsPIC33FJ16GS504



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