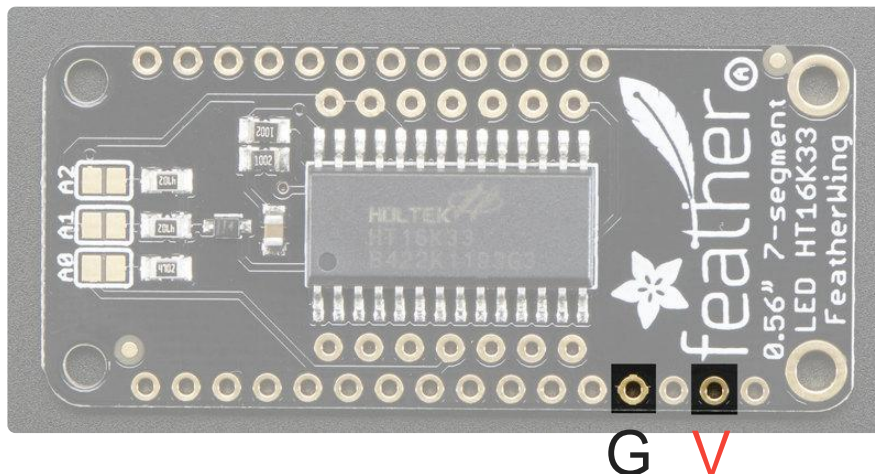


The 7-segment backpack makes it really easy to add a 4-digit numeric display with decimal points and even 'second colon dots' for making a clock

The LEDs themselves do not connect to the Feather. Instead, a matrix driver chip (HT16K33) does the multiplexing for you. The Feather simply sends i2c commands to the chip to tell it what LEDs to light up and it is handled for you. This takes a lot of the work and pin-requirements off the Feather. Since it uses only I2C for control, it works with any Feather and can share the I2C pins for other sensors or displays.

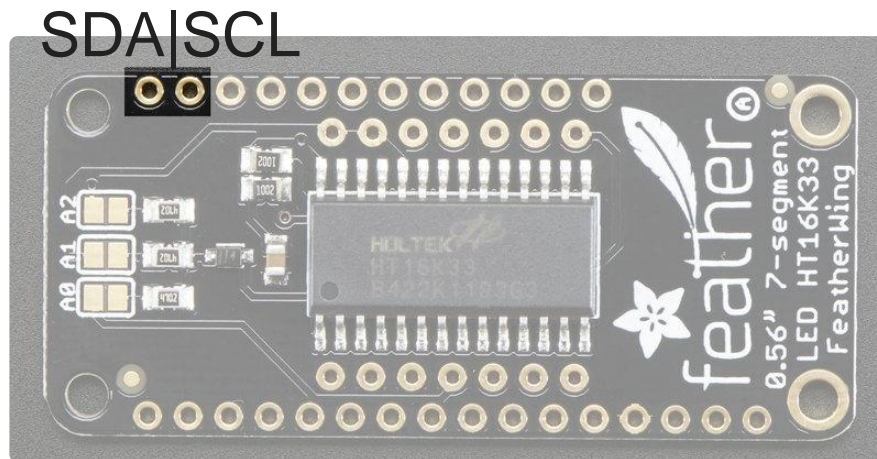
Power Pins



The LED matrix uses only the 3V and GND pins for power and logic. Current draw depends on how many LEDs are lit but you can approximate it as about 40mA for most uses. Check the PCB file/schematic to verify which pin is ground!

Note that the 3.3V power supply is a tiny bit lower than the forward voltage for the pure green, blue and white LED matrices but we didn't find any significant degradation in brightness. Really, they're still very bright.

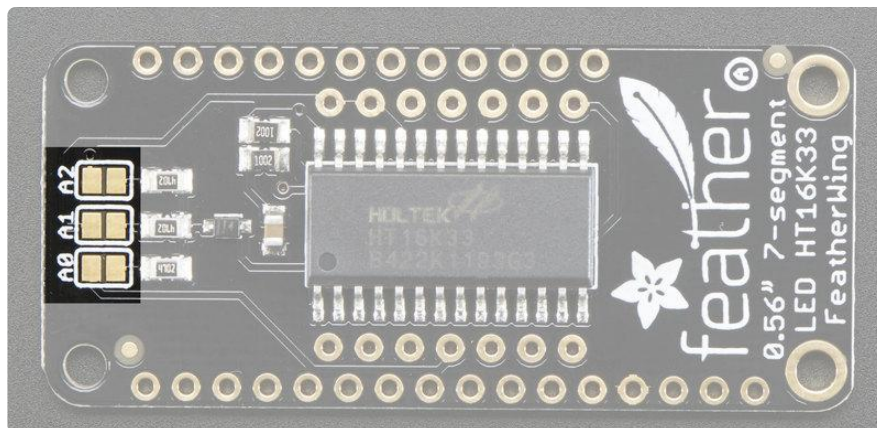
I2C pins



All LED control is done over I2C using the HT16K33 interface library. This means SDA and SCL must be connected, see above for those pins.

The default address is 0x70 but you can change the address to 0x71-0x77 by bridging solder onto the address pins.

Address Jumpers



Changing Addresses

You can change the address of a backpack very easily. Look on the back to find the two or three A0, A1 or A2 solder jumpers. Each one of these is used to hardcode in the address. If a jumper is shorted with solder, that sets the address. A0 sets the lowest bit with a value of 1, A1 sets the middle bit with a value of 2 and A2 sets the high bit with a value of 4. The final address is $0x70 + A2 + A1 + A0$. So for example if A