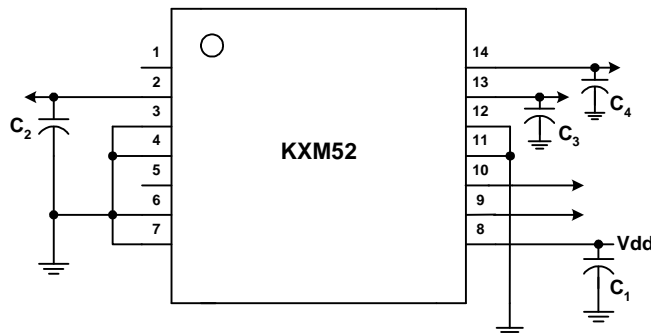


## Introduction

Kionix does not recommend hand soldering any of its DFN parts due to the small form factor of the DFN package. It is a distinct possibility that, in doing so, shorts will be created between pins. If hand soldering cannot be avoided, this guide specifies which pins can be shorted without compromising the operation of the accelerometer. (Ideally, none of the pins should be shorted, with the exception of Vdd and PS.)



Pin	Tri-Axis Function
1	DNC
2	Output X
3	GND
4	Reserved
5	Parity
6	Reserved
7	Reserved
8	Vdd
9	PS
10	Self Test
11	Reserved
12	GND
13	Output Y
14	Output Z

## Definitions

- C<sub>2</sub>, C<sub>3</sub>, C<sub>4</sub>** An external capacitor is used to set the -3dB filter point for each sensor output.
- DNC** Do not connect.
- f<sub>BW</sub>** Sensor bandwidth frequency needed in application (typ. 10Hz to 1500Hz). Bandwidth with a 0.1µF cap is 50 Hz nominal.
- Parity** Checks EEPROM for parity error.
- PS** Power shutdown pin. When the PS pin is connected to GND or left floating, the KXM52 is shutdown and drawing very little power. When the PS pin is tied to Vdd, the unit is fully functional.
- Reserved** For factory use; recommend grounding.
- Self Test** The output of a properly functioning part will increase by at least 1g when Vdd is applied

## Soldering Guidelines

Pin 9 (PS) must be powered by Vdd in order for the accelerometer to function. Pin 8 (Vdd) can be shorted to pin 9 in order that the part be functioning all of the time, or a timer can be used to switch pin 9 off and on, thereby saving power. To accomplish the latter, advanced power saving, you should not be hand soldering the part. Please refer to the Kionix web site for solder recommendations.

[http://www.kionix.com/Tech-Notes/DFN Mounting 050331\\_rev 2.pdf](http://www.kionix.com/Tech-Notes/DFN Mounting 050331_rev 2.pdf)

You can short pins 1 and 2. Internally pin 1 does nothing.

You can short pins 3 and 4. Pin 4 is an EEPROM programming line and should be tied to GND or left floating.

You can short pins 11 and 12. Pin 11 is an EEPROM programming line and should be tied to GND or left floating.

Pin 10 can be shorted to 11 and 12, but only if you are not using self test. Pulling pin 10 (self test) high will rail the part.

### Soldering Guidelines (cont'd)

You can short pins 5, 6 and 7. Parity is fairly useless for most applications. Pins 6 and 7 are data and clock lines used for programming the part and should be tied to GND or left floating.

Do not short pins 4 and 5. Pin 5 (parity) will go high with a single parity error. If pin 5 is high and is shorted to pin 4 (programming line), you might erase the programming codes in the EEPROM.

### In Summary

- 1) Do not solder pins 2 and 3 together. This would ground the X output.
- 2) Do not solder pins 9 and 10 together. This would bring self test high and keep the part constantly railed.
- 3) Keep pins 12, 13 and 14 free of any shorts. Pin 12 is ground, but it can be ignored if you use pin 3 for ground. Pin 13 is the Y output, and pin 14 is the Z output.