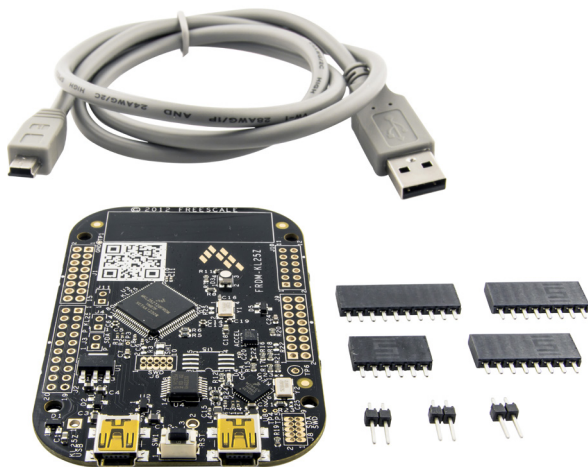


# Eval Basic Kit

## Kinetis KL25Z Freedom Platform



### Description:

The Freescale Freedom development platform is a low-cost evaluation and development platform featuring Freescale's newest ARM® Cortex™-M0+ based Kinetis KL25Z MCUs

### Specifications:

|                       |                 |
|-----------------------|-----------------|
| Silicon Manufacturer  | : Freescale     |
| Core Architecture     | : ARM           |
| Core Sub-Architecture | : Cortex - M0+  |
| Silicon Core Number   | : MKL2          |
| Silicon Family Name   | : Kinetis - KL2 |

### Features:

- KL25Z128VLK4-Cortex-M0+ MCU with:
  - 128kB flash, 16kB SRAM
  - Up to 48MHz operation
  - USB full-speed controller
- OpenSDA-sophisticated USB debug interface
- Tri-color LED
- Capacitive touch "slider"
- Freescale MMA8451Q accelerometer
- Flexible power supply options
  - Power from either on-board USB connector
  - Coin cell battery holder (optional population option)
  - 5V to 9V<sub>VIN</sub> from optional IO header
  - 5V provided to optional IO header
  - 3.3V to or from optional IO header
- Reset button
- Expansion IO form factor accepts peripherals designed for Arduino™-compatible hardware

### Kit Contents:

| Description                            | Qty | Part Number    |
|----------------------------------------|-----|----------------|
| Samtec Socket, 2.54mm, 1 × 6 Pos       | 1   | SSW-106-01-T-S |
| Samtec Socket, 2.54mm, 1 × 8 Pos       | 2   | SSW-108-01-T-S |
| Samtec Socket, 2.54mm, 1 × 10 Pos      | 1   | SSW-110-01-T-S |
| Samtec Header, 2.54mm, THT VERT, 2 Pos | 3   | TSW-102-07-T-S |
| Multicomp Mini USB cable               | 1   | SPC20060       |
| Freescale Freedom Platform             | 1   | FRDM-KL25Z     |

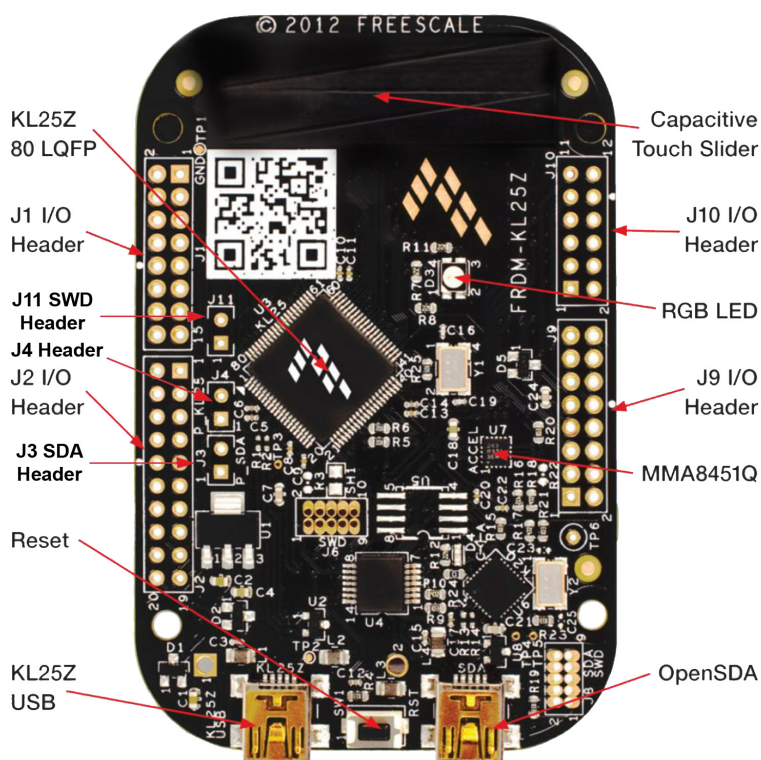
### Ordering Information

| Description                                              | Part Number            |
|----------------------------------------------------------|------------------------|
| Eval Basic Kit, Kinetis KL25Z Freescale Freedom Platform | FRDMKL25Z BASIC BUNDLE |



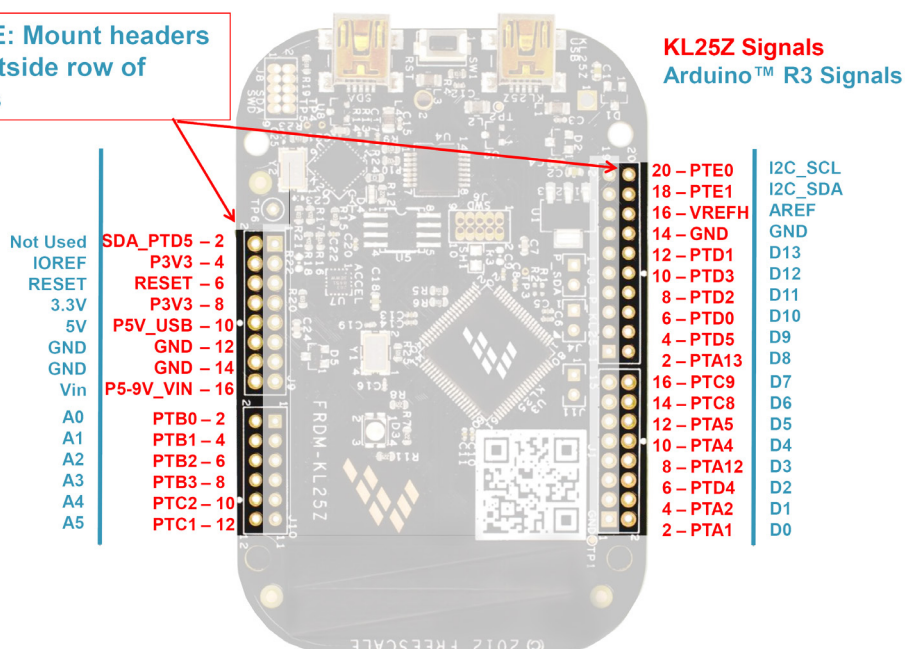
# Eval Basic Kit

## Kinetis KL25Z Freedom Platform



### FRDM-KL25Z Single Row/Arduino Header Layout

**NOTE:** Mount headers to outside row of holes



# Eval Basic Kit

## Kinetis KL25Z Freedom Platform



### Attaching Single Row Headers to the Freedom Platform

This special bundle includes headers that can be soldered to the board to give you access to additional Arduino™-compatible hardware – commonly referred to as “Shields”.

To attach the single row headers to the Freedom Platform, please reference the “FRDM-KL25Z Single Row/Arduino Header Layout” diagram. Attaching these headers to the outside row of I/O holes on the board give you access to the unlimited potential of access to peripherals designed for Arduino™-compatible hardware. Using optional dual row headers are also acceptable, but are not needed to use Arduino™-compatible hardware/ shields.

| Header                | Positions on Board |
|-----------------------|--------------------|
| SAMTEC SSW-106-01-T-S | J10                |
| SAMTEC SSW-108-01-T-S | J1,J9              |
| SAMTEC SSW-110-01-T-S | J2                 |
| SAMTEC TSW-102-07-T-S | J3, J4, J11 *      |

\* Three of these headers have been included for additional/ advanced features that are available on positions J3, J4, and J11 and are not necessary for use with Arduino™-compatible hardware/ shields . Details of their functionality can be found in the Freedom Platform documentation.

# Arduino Motor Shield



The **Arduino Motor Shield** is based on the L298 ([datasheet](#)), which is a dual full-bridge driver designed to drive inductive loads such as relays, solenoids, DC and stepping motors. It lets you drive two DC motors with your Arduino board, controlling the speed and direction of each one independently. You can also measure the current absorption of each motor, among other features. The shield is TinkerKit compatible, which means you can quickly create projects by plugging TinkerKit modules to the board.

This shield have **two separate channels**, called **A** and **B**, that each use 4 of the Arduino pins to choose the rotation **direction**, **vary the speed**, **fast brake** or **sense the current** that is flowing through the motor. In total there are 8 pins in use on this shield. You can use each channel separately to drive two DC motors or combine them to drive one bipolar stepper motor. The shield can supply 2 amperes per channel, for a total of 4 amperes maximum.

This shield has the 1.0 standard pinout that consist in 4 additional pins: 2 of them placed near the AREF pin, that are used for TWI communication, and the other 2 are placed near the RESET pin. The IOREF pin is used to adapt the shield to the board on which is mounted. The last one is not connected and is reserved for future uses.

## Technical Specifications

|                                      |                                                       |
|--------------------------------------|-------------------------------------------------------|
| Operating Voltage                    | 5V to 12V                                             |
| Motor controller                     | L298P, Drives 2 DC motors or 1 stepper motor          |
| Max current                          | 2A per channel or 4A max (with external power supply) |
| Current sensing                      | 1.65V/A                                               |
| Free running stop and brake function |                                                       |