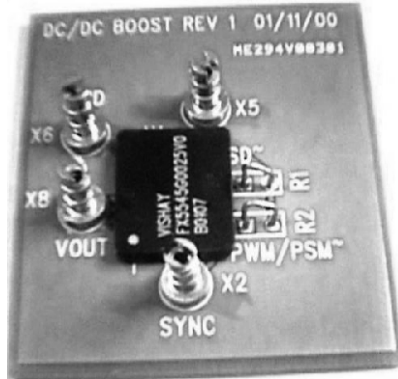


FunctionPAK® Demonstration Board (DB)



FEATURES

- FunctionPAK® is a synchronous Buck or a Boost converter with 2.5 V to 6 V input voltage.
- The Buck DB is available at V_{out} = adjustable only and the Boost DB is available at V_{out} = adjustable only.
- The FunctionPAK is available at V_{out} = 0.8 V to 4.5 V for the Buck configuration and V_{out} = 3.3 V to 6 V for the Boost configuration.
- The PWM/ \overline{PSM} pin can be used to program the converter to operate in PWM or \overline{PSM} mode.
- PWM is the normal pulse width modulation that keeps the output regulated through the load range, while the \overline{PSM} mode offers better efficiency at light load to conserve power by skipping switching pulses. Notice the \overline{PSM} only gain efficiency advantage at light load and can only deliver certain load current before output drops out of regulation.

TEST SET-UP AND OPERATION

1. Visually inspect that jumpers from the V_{in} pin are connected to pins SD (Shut Down), PWM and SYNC (Synchronization).
2. Attach an electronic load set to either resistive or current mode between V_{out} pin and GND pin on the demo board. Set the load current to 200 mA or equivalent resistor value. After the converter is powered-up, output load current can be adjusted between 0 to 300 mA (items 22, 23), 0 to 600 mA (items 1 - 3, 24), 0 to 1 A (items 4, 25), 0 to 1.5 A (items 5 - 7, 26), 0 to 2 A (items 27), 0 to 2.5 A (items 8 - 10, 28), 0 to 3 A (items 11 - 15, 21) and 0 to 4 A (items 16 - 20).¹⁾
3. Attach a DC power supply, with at least 3 A current capability between the V_{in} to the GND pins on the demo board. The input voltage can be adjusted as written in the attached table.¹⁾
4. Connect an oscilloscope GND to the GND pin, and the channel -1 probe to the V_{out} pin. Set the scope to 20 MHz Band-Width limit and then set the coupling to AC. The waveform that appears is the ripple measurement.
5. In order to test the DB in PSM, adjust the load to 20 mA. Then cut the jumper of the \overline{PSM} and connect it to the GND. Notice the reduction of the input current.
6. The synchronization of the external clock is easily accomplished by connecting the external clock into the SYNC pin. When connecting an external clock, disconnect jumper 3. Logic high to low transition synchronizes the clock. The external clock frequency must be within 1.2 to 1.5 times the internal clock frequency. (If not used, the SYNC pin must be connected to V_{in} pin).

ORDERING INFORMATION

ITEM NUMBER	P/N	TYPE	OUTPUT VOLTAGE	INPUT VOLTAGE
1	FX5545G201ADJDB	Buck	ADJ	2.5 V to 6.0 V
2	FX5545G005ADJDB		ADJ	2.5 V to 6.0 V
3	FX5545G205ADJDB		ADJ	2.5 V to 6.0 V
4	FX5545G305ADJDB		ADJ	2.5 V to 6.0 V
5	FX5545G008ADJDB		ADJ	2.5 V to 6.0 V
6	FX5545G108ADJDB		ADJ	2.5 V to 6.0 V
7	FX5545G402ADJDB	Boost	ADJ	2.5 V to 5.0 V
8	FX5545G006ADJDB		ADJ	2.5 V to 5.0 V
9	FX5545G206ADJDB		ADJ	2.5 V to 5.0 V

Note

- 1) The testing wires connected to the V_{in} , V_{out} and GND pins must have a minimum cross section of 2.5 mm².