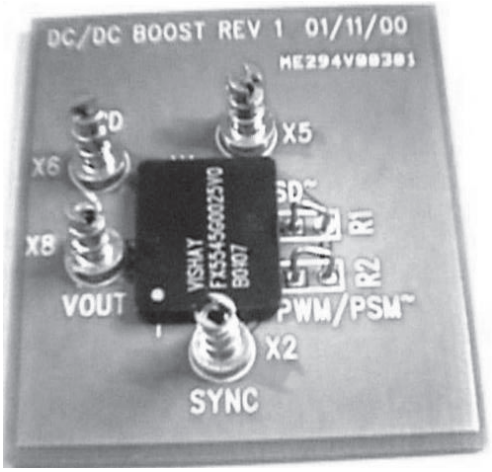
FunctionPAK Demonstration Board (DB)



FEATURES

- FunctionPAK is a synchronous Buck or a Boost converter with 2.5v to 6v Input voltage and internal frequency of 2MHz.
- The Buck DB is available at Vout = 1.8v or 2.7v or 3.3v and the Boost DB is available at Vout = 3.3v or 5v.
- The FunctionPAK is available at Vout = 1.5v to 3.6v for the Buck configuration and Vout = 3.3v to 6v for the Boost configuration.
- The PWM/PSM pin can be used to program the converter to operate in PWM or PSM mode.
- PWM is the normal pulse width modulation that keeps the output regulated through the load range, while the PSM mode offers better efficiency at light load to conserve power by skipping switching pulses. Notice the 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 Vin 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 Vout pin and GND pin on the demo board. Set the load current to 200mA or equivalent resistor value. After the converter is powered-up, output load current can be adjusted between 0 to 600mA (items 1 - 5), 0 to 1000mA (items 6 - 8), 0 to 1500mA (items 9 - 11; 19), 0 to 2000mA (item 20) 0 to 2500mA (items 12 - 14) and 0 to 3000mA (items 15 - 18).

*****3. Attach a dc power supply, with at least 3A current capability between the Vin to the GND pins on the demo board. The input voltage can be adjusted as written in the attached table.

4. Connect an oscilloscope GND to the GND pin, and the channel -1 probe to the Vout pin. Set the scope to 20MHz Band-Width limit and than 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 20mA. Then cut the jumper of the 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. 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 Vin pin).

***Note:** The testing wires connected to the Vin, Vout and GND pins must have a minimum cross section of 2.5mm^2

ORDERING INFORMATION

ITEM NUMBER	P/N	TYPE	OUTPUT VOLTAGE	INPUT VOLTAGE
1	FX5545G0011V8DB	Buck	1.8V	2.5V to 6.0V
2	FX5545G0012V7DB	Buck	2.7V	2.9V to 6.0V
3	FX5545G0013V3DB	Buck	3.3V	3.5V to 6.0V
4	FX5545G0023V3DB	Boost	3.3V	2.5V to 3.3V
5	FX5545G0025V0DB	Boost	5.0V	2.7V to 5.0V
6	FX5545G2013V3DB	Buck	3.3V	3.5V to 6.0V
7	FX5545G2025V0DB	Boost	5.0V	2.7V to 5.0V
8	FX5545G4025V0DB	Boost	5.0V	2.7V to 5.0V
9	FX5545G0051V8DB	Buck	1.8V	2.7V to 6.0V
10	FX5545G0052V5DB	Buck	2.5V	2.7V to 6.0V
11	FX5545G0053V3DB	Buck	3.3V	3.3V to 6.0V
12	FX5545G2051V8DB	Buck	1.8V	2.7V to 6.0V
13	FX5545G2052V5DB	Buck	2.5V	2.7V to 6.0V
14	FX5545G2053V3DB	Buck	3.3V	3.3V to 6.0V
15	FX5545G3051V8DB	Buck	1.8V	2.5V to 6.0V
16	FX5545G3052V5DB	Buck	2.5V	2.7V to 6.0V
17	FX5545G3053V3DB	Buck	3.3V	3.3V to 6.0V
18	FX5545G305ADJDB	Buck	ADJ	2.5V to 6.0V
19	FX5545G0065V0DB	Boost	5.0V	2.5V to 6.0V
20	FX5545G1065V0DB	Boost	5.0V	2.5V to 6.0V

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