1. General Description

The AP1050 is a pre-driver for a 3-phase brushless motor with built-in power supplies, which operates motor drive voltage in range of 8V to 36V. It incorporates a step-down DC-DC converter and LDOs to generate the power supply that the motor drive system requires. The bootstrap circuit is embedded and it enables to use N type MOSFET for both low side and high side.

2. Features

- Motor Drive Voltage 8V~36V
- Buck DC-DC 10V/500mA, Built-in FET, Synchronous rectification type
- LDOE 3.3V/200mA (For external circuit and DVDD connection)
- LDOA 5.0V (For AVDD connection)
- VREG 4.83V (For internal analog circuit)
- LDOD 1.88V (For internal digital circuits)
- With Power Good signal output
- Pre-Driver Built-in bootstrap circuit for high side driver
- With Dead Time Control function
- PWM Controller 13 bit setting, PWM waveform mode switching
- VGA +17dB~28dB, 3dB step, 2ch same setting
- ADC 12bit, 2ch
- 4-wire serial interface CSB, SCK, SDI, SDO
- PWM cycle input / output INT
- Protection function Undervoltage detection (VIN, VDC, VREG, LDOE, LDOA, LDOD)
  Overvoltage detection (VIN, VDC, LDOE, LDOA, LDOD)
  Overcurrent detection (Buck DC-DC, Pre-Driver)
  Built-in thermal shutdown circuit (TSD)
- Overcurrent protection (OCP)
- Error output 1-Output (ERRB)
- Operation Temperature Range -40~105°C (Tj max=150°C)
- Package 48-pin QFN (7 x 7mm)
3. Block Diagram

Figure 1. Block Diagram
4. Package

4.1 External dimensions (Preliminary)
- 48-pin QFN (Unit : mm)

4.2 Marking

- AP1050: Market No.
- ABYWWCD: Date Code
- Pin #1 Indication

Date code (7 digit)
A: Wafer Lat# (last 1 digit)
B: FAB Revision#
Y: Year code (last 1 digit)
WW: Week code
C: Foundry code
D: Assembly code
This product brief is a preliminary version. If you would like more information, please consult our sales representative or our dealer sales representative.