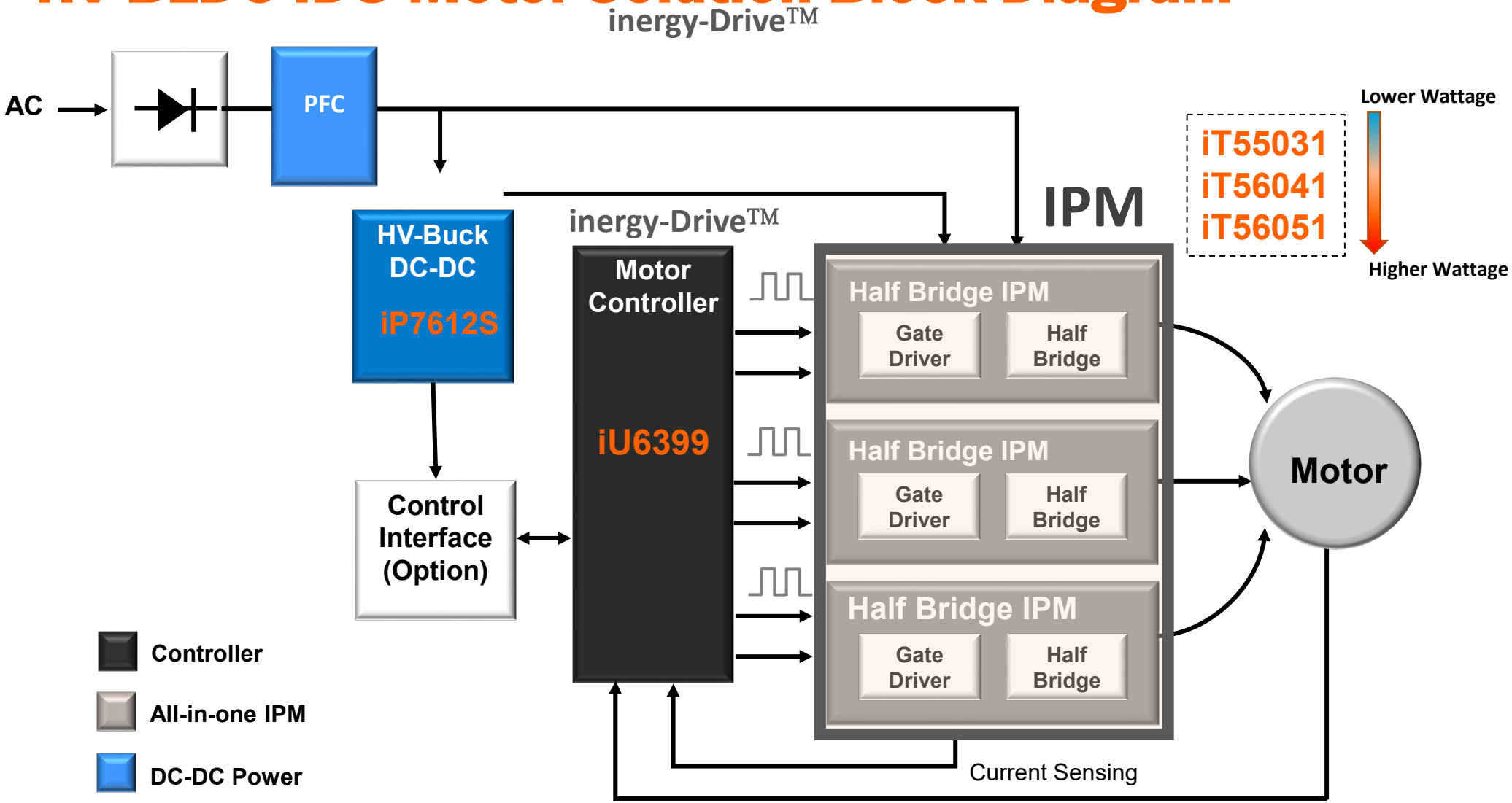
inergy BLDC HV FOC
inergy-Drive™

~120 W IDU Fan Solution

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HV BLDC IDU Motor Solution Block Diagram



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iP7612S HV Buck Converter

Features

- Fixed 60kHz switching frequency
- 9V to 38V wide range VCC voltage
- Wide AC input range from $85V_{AC}$ to $265V_{AC}$
- PWM with current mode control
- Auxiliary under voltage lock out with hysteresis
- High voltage start-up current source
- Excellent standby low power consumption
- Over-temperature, over-current and over voltage protection with auto-restart
- Integrated 730V MOSFET
- Burst mode under low load conditions

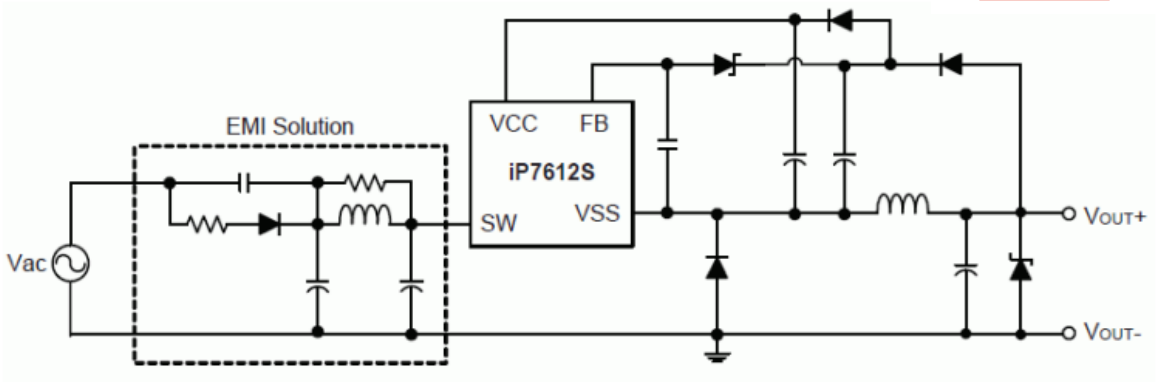
Applications

- Off line power supply for battery charger adapters
- Standby power supply for TV or monitors
- Auxiliary supply for motor control
- Air conditioner power supply
- Electromagnetic oven power supply

iP7612S

PDF

Application Circuit

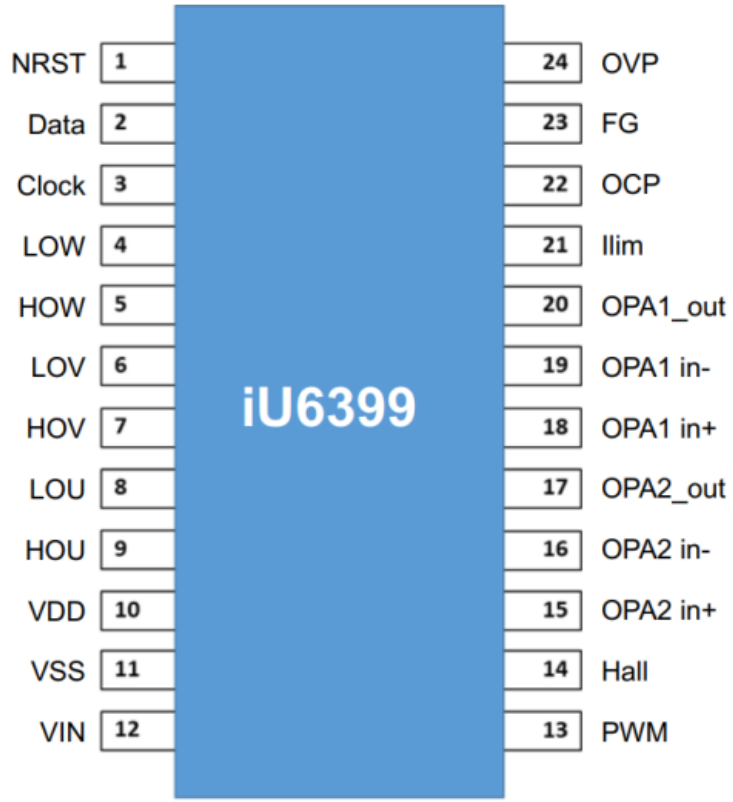


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iU6399 inergy Drive™ CODE-FREE

3-Phase FOC Controller

- 3-Phase FOC Controller
- Operation Voltage 5.5V~24V
- Embedded with 5V LDO
- Integrated Current Amplifiers x 2
- Control Functions
  - Support PWM duty / DC / Clock input
  - Adjustable PWM Frequency
  - Lead Angle
  - FG Output
  - Adjustable Start
- Built-in Protection
  - Over-Voltage
  - Over-Current
  - Current Limit
  - Auto Recovery



TSSOP-24

Pin No.	Function	Description
1	NRST	External RESET
2	Data	Data Input
3	Clock	Clock Input
4	LOW	PWM 3 Complementary Output
5	HOW	PWM 3 Output
6	LOV	PWM 2 Complementary Output
7	HOV	PWM 2 Output
8	LOU	PWM 1 Complementary Output
9	HOU	PWM 1 Output
10	VDD	Self Logic 5V Power
11	VSS	Ground
12	VIN	Power Input
13	PWM	PWM Input
14	Hall	Hall Input
15	OPA2 in+	OPAMP2 Positive Input
16	OPA2 in-	OPAMP2 Negative Input
17	OPA2_out	OPAMP2 Output
18	OPA1 in+	OPAMP1 Positive Input
19	OPA1 in-	OPAMP1 Negative Input
20	OPA1_out	OPAM1 Output
21	I_lim	Average Current Detection
22	OCP	Over Current Protection
23	FG	FG Output
24	OVP	Over Voltage Protection

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iT55031 3-Phase Intelligent Power Module

The **iT55031** is a three-phase, intelligence power module. It is composed of temperature sensor, MOSFET, gate driver and control logic which can provide minimal components of total BOM to save the total cost.
The iT55031 embedded **500V** HVIC gate driver with bootstrap diode. Built-in **3A/500V** fast recovery MOSFET to reduce switching loss. The gate driver sourcing / sinking current is fine tuned to lower the EMI.
The iT55031 is equipped TS (temperature sensor), UVLO (under voltage lockout) protections. Three independent low side MOSFET source paths for the current sensing application.

Features

- 3A/500V Fast Recovery MOSFET
- Floating Channel Designed for Bootstrap
- Operation to +600V
- Under Voltage (UVLO) Protection
- Bootstrap Diodes Built-in with Current Limiting Resistor
- Input interface: 3.3V, 5V Line
- 3-Phase Independent Current Detection
- Temperature Sensor
- Soft Driving for Low EMI
- Insulation Voltage Standing: 1500Vrms
- SOP23H Package
- UL 94V-0 Compound Material

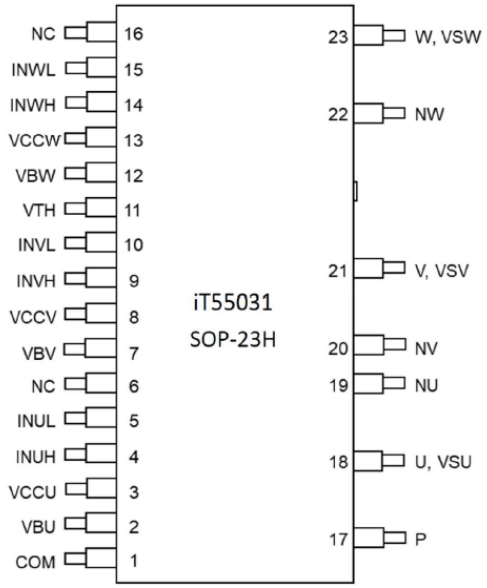


Fig.1 Pin Assignments (Top View)

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iT56041 3-Phase Intelligent Power Module

The **iT56041** is a three-phase, intelligence power module. It is composed of temperature sensor, MOSFET, gate driver and control logic which can provide minimal components of total BOM to save the total cost.
The iT56041 embedded 600V HVIC gate driver with bootstrap diode. Built-in **4A/600V** fast recovery MOSFET to reduce switching loss. The gate driver sourcing / sinking current is fine tuned to lower the EMI.
The iT56041 is equipped TS (temperature sensor), UVLO (under voltage lockout) protections. Three independent low side MOSFET source paths for the current sensing application.

Features

- 4A/600V Fast Recovery MOSFET
- Floating Channel Designed for Bootstrap Operation to +600V
- Under Voltage (UVLO) Protection
- Bootstrap Diodes Built-in with Current Limiting Resistor
- Input interface: 3.3V, 5V Line
- 3-Phase Independent Current Detection
- Temperature Sensor
- Soft Driving for Low EMI
- Insulation Voltage Standing: 1500Vrms
- SOP-23H Package
- UL 94V-0 Compound Material

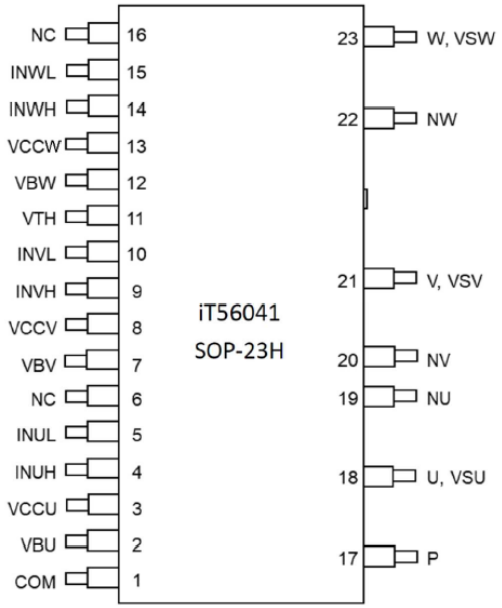


Fig.1 Pin Assignments (Top View)

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iT56051 3-Phase Intelligent Power Module

The iT56051 is a three-phase, intelligence power module. It is composed of temperature sensor, MOSFET, gate driver and control logic which can provide minimal components of total BOM to save the total cost. The iT56051 embedded 600V HVIC gate driver with bootstrap diode. Built-in 5A/600V fast recovery MOSFET to reduce switching loss. The gate driver sourcing / sinking current is fine tuned to lower the EMI. The iT56051 is equipped TS (temperature sensor), UVLO (under voltage lockout) protections. Three independent low side MOSFET source paths for the current sensing application.

Features

- 5A/600V Fast Recovery MOSFET
- Floating Channel Designed for Bootstrap Operation to +600V
- Under Voltage (UVLO) Protection
- Bootstrap Diodes Built-in with Current Limiting Resistor
- Input interface: 3.3V, 5V Line
- 3-Phase Independent Current Detection
- Temperature Sensor
- Soft Driving for Low EMI
- Insulation Voltage Standing: 1500Vrms
- SOP-23H Package
- UL 94V-0 Compound Material

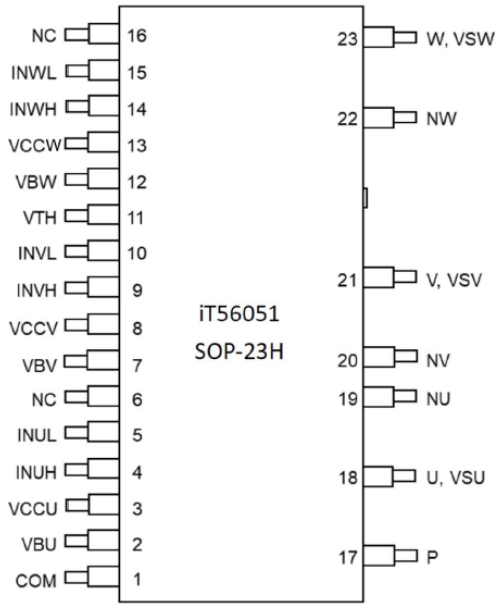
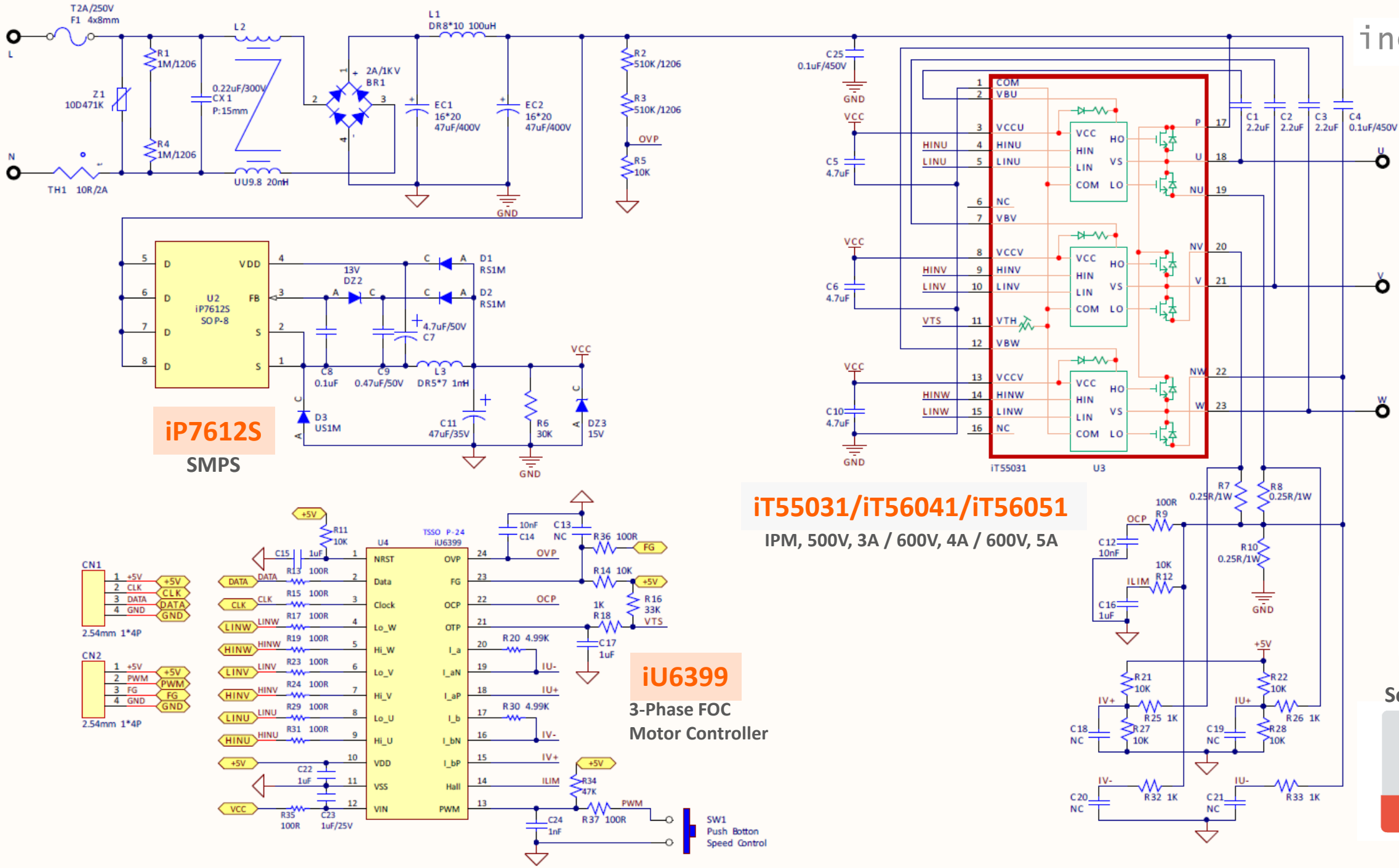


Fig.1 Pin Assignments (Top View)

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iT55031

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iT56041

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iT56051

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Schematic

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