

UCD3xxx Layout Instructions

TI HPI/Digital Power

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Layout Instructions

1. UCD3xxx Control Card is recommended to have two Grounds, AGND and DGND
 - a) AGND plane should be on a different layer and right under UCD3xxx
 - b) UCD3xxx Power Pad should be tied to AGND plane by at least 4 vias.
 - c) AGND plane should be just big enough to connect to all components' AGNDs by vias.
 - d) Power GND, PGND, can be independent or combined with Digital Ground)
2. Each pin of 3.3VD and 3.3VA should have a local 0.1uF cap placed near to the pin
3. BPCAP's decoupling (2.2uF typically) MUST be connected to DGND
4. Power Pad should be grounded to AGND
5. All analog signal's filter cap should be tied to AGND (If UCD7201 or UCD7100 driver is on control card, filter cap for CS (Current Sensing) pin is an exception. It can be tied to DGND for easy layout)
6. All digital signals, such as GPIO, PMBus and PWM should reference to DGND.
7. RESET signal's cap can be connected to either DGND or AGND.

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8. All filter caps and decoupling caps should be placed close to UCD3xxx as much as you can (resistors can be placed a little bit far away)
9. DGND and AGND net-short resistor MUST be placed right between one UCD3xxx's DGND pin and one AGND pin and tied to DGND plane and AGND plane solidly by two paralleled vias or one big via for each terminal.
- 10 If UCD7201 or UCD7100 is on control card and there is PGND (Power Ground), net-short resistor should be tied to DGND plane and PGND Plane solidly by multi vias and the net-short should be near to the driver IC. Power Pad of the IC should be tied to DGND