

Power Stage Demonstration of Buck Convertor Using GP65R45T4

Testing environment

DUT

GP65R45T4

Vds: 650V

Vgs: 12V

Id-max: 30A

Testing condition

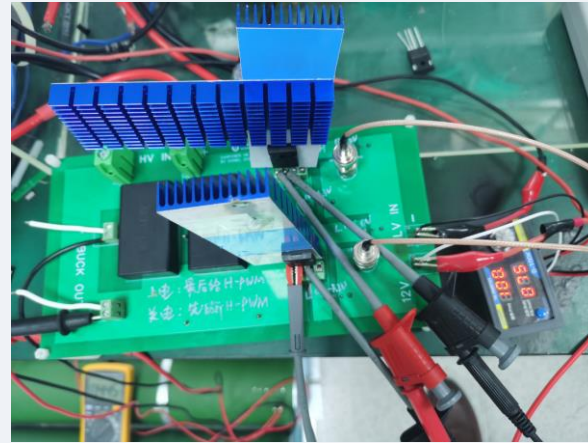
PWM freq: 100kHz

Vgs: 12V turn-on, 0V turn-off

load: 40R/10KW

Vbus: 200V-550V

Buck PCB



40R 10KW load resistors

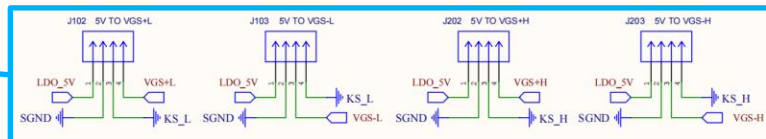
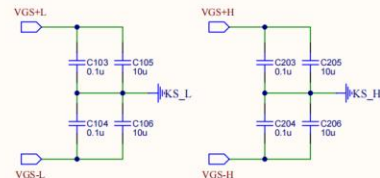
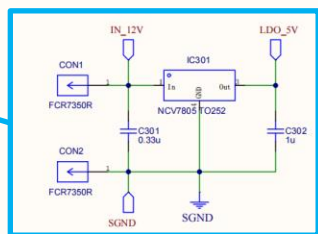
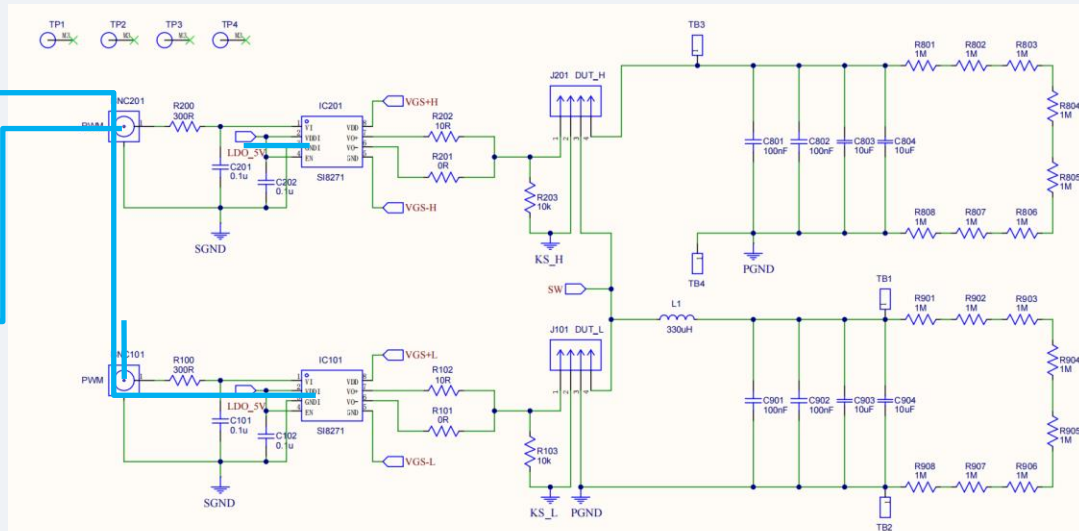


Isolated driver si8271

Complementary PWM

Isolated aux power
input: 12V

Isolated aux: turn-on 12V,
turn-off -3 to 0V



TITLE:	HB BUCK/BOOST	REV:	1.1
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Vbus=200V



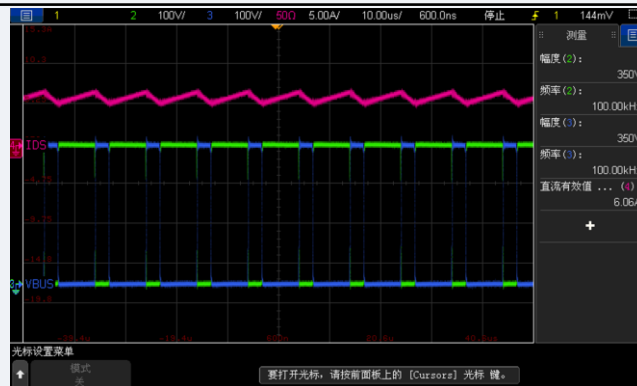
Vbus=250V



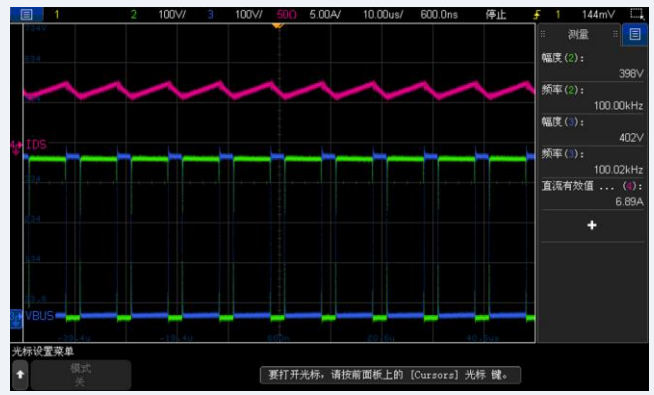
Vbus=300V



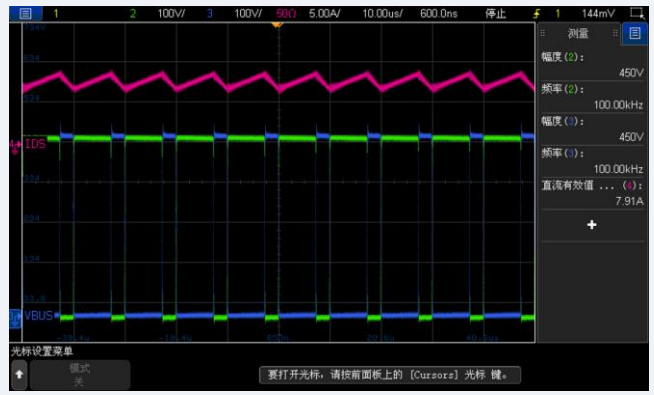
Vbus=350V



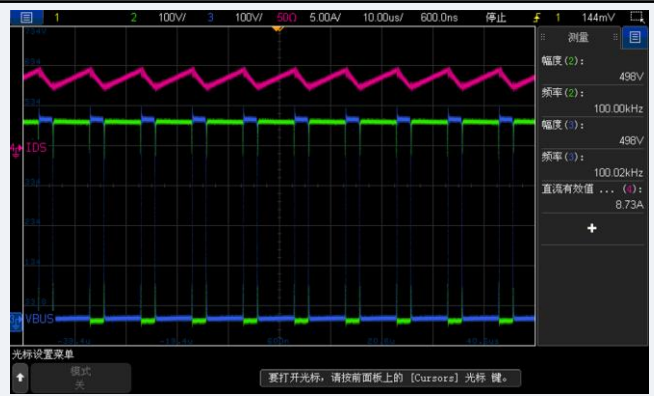
Vbus=400V



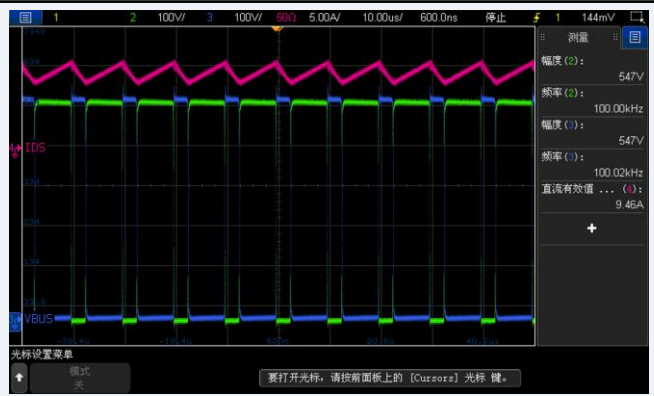
Vbus=450V



Vbus=500V



Vbus=550V



型号	输入电压 Vbus (V)	输入电流 Ibus (A)	输入功率 P1 (W)	驱动电压 Vg (V)	驱动电流 Ig (A)	驱动功率 P2 (W)	总功率 Pin (W)	输出电压 (W)	输出电流 (A)	负载 (R)	输出功率 Pout (W)	效率
GP65R45T4	200	2.81	562	12	0.2	2.4	564.4	147.2	3.68	40	541.70	95.98%
GP65R45T4	250	3.45	862.5	12	0.2	2.4	864.9	182	4.55	40	828.10	95.75%
GP65R45T4	300	4.1	1230	12	0.2	2.4	1232.4	218	5.45	40	1188.10	96.41%
GP65R45T4	350	4.7	1645	12	0.2	2.4	1647.4	252	6.3	40	1587.60	96.37%
GP65R45T4	400	5.2	2080	12	0.2	2.4	2082.4	284.8	7.12	40	2027.78	97.38%
GP65R45T4	450	6.1	2745	12	0.2	2.4	2747.4	327.2	8.18	40	2676.50	97.42%
GP65R45T4	500	6.6	3300	12	0.2	2.4	3302.4	356.4	8.91	40	3175.52	96.16%
GP65R45T4	550	7.1	3905	12	0.2	2.4	3907.4	386	9.65	40	3724.90	95.33%

在2000W-3000W区间效率最高, >97%。