
GAU405P-15252 4ch Gate Drive Prototype Board

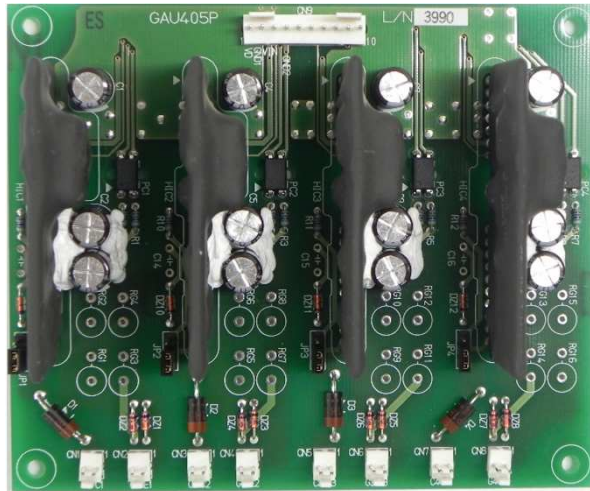


Image Photograph

Size : 120 x 100 x 44t

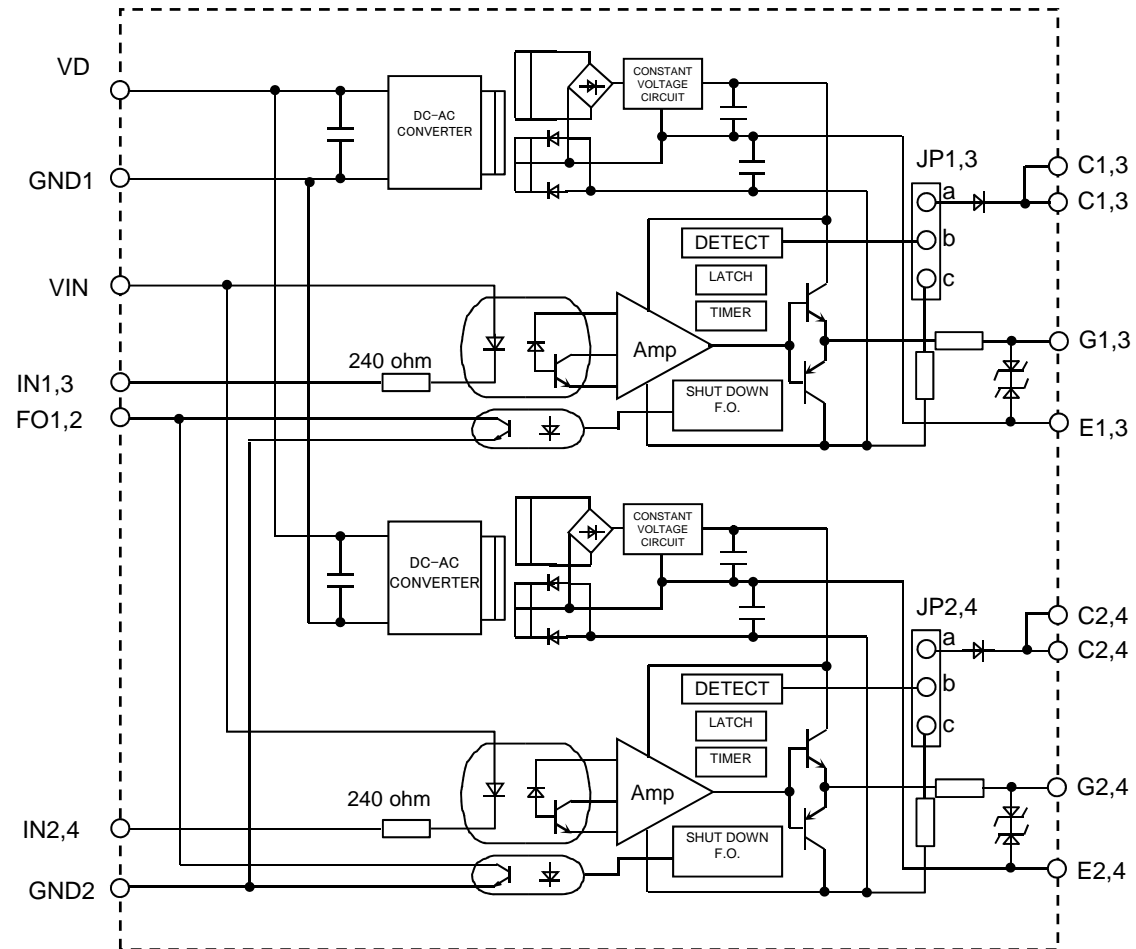
FEATURE

- >Built in the isolated DC-DC converter for gate drive
- >Output peak current is +/-5A(max)
- >Built in short circuit protection
- >Electrical isolation voltage is 2500Vrms (for 1 minute)
- >Two way power supply system for drivers and input signal (VD=15V , VIN=5V)
- >CMOS compatible input interface

Gate Driver : VLA551-01R

September. 2014

BLOCK DIAGRAM



Above block is built in GAU405P-15252 by 2 block.

JP1,2,3,4: DETECT Enable a-b short(at shipping), Disenable b-c short

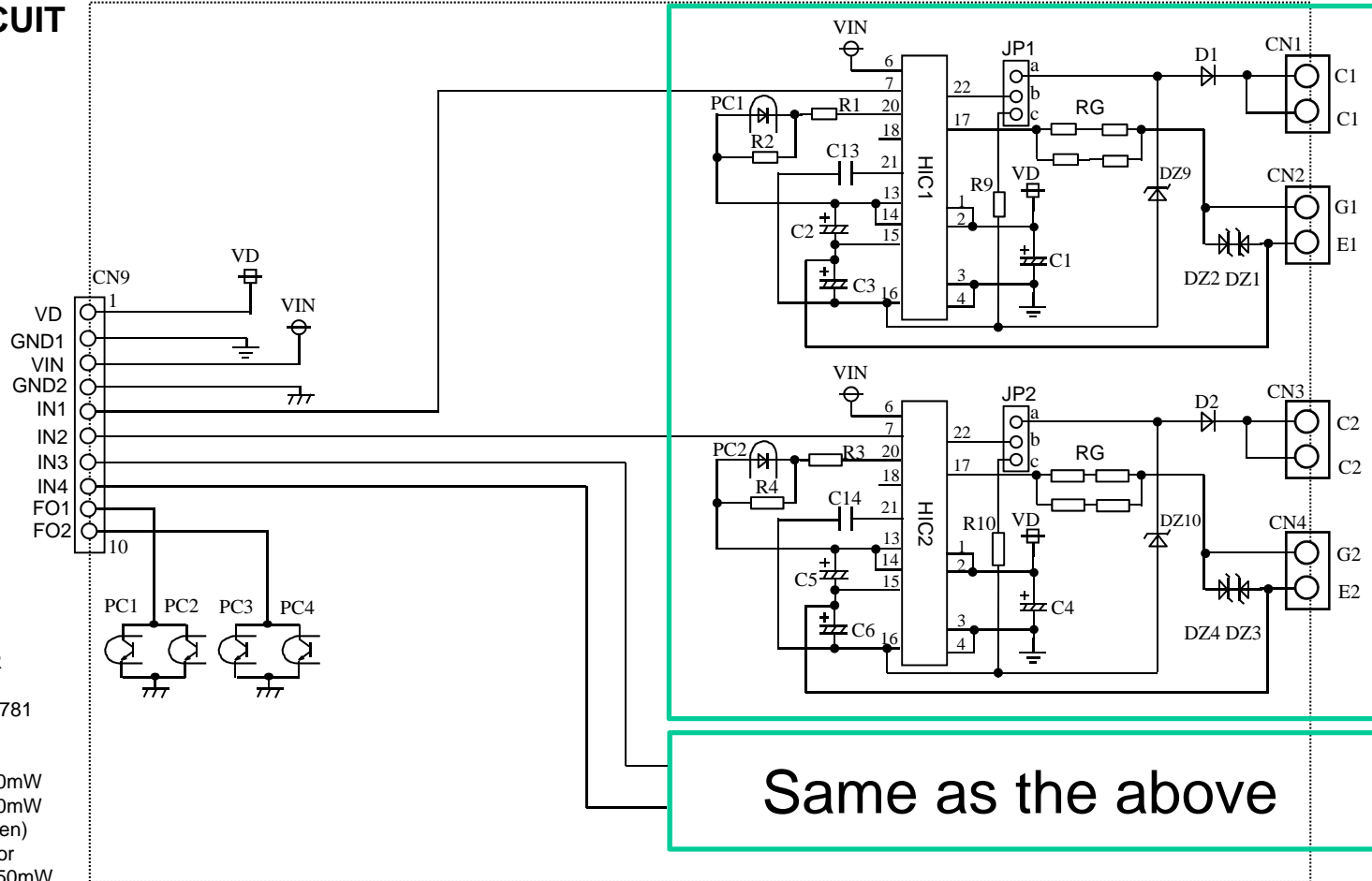
MAXIMUM RATINGS (unless otherwise noted, Ta=25C)

Symbol	Parameter	Conditions	Ratings	Unit
VD	Supply voltage	DC	-1 ~ 16.5	V
VI	Input signal voltage	Applied between VIN – IN1,2,3,4 50% Duty cycle , pulse width 1ms	-1 ~ +7	V
IOHP	Output peak current	Pulse width 2us	-5	A
IOLP			5	A
Viso	Isolation voltage	Sine wave voltage 60Hz, for 1min	2500	Vrms
Topr	Operating temperature	No condensation allowable	-20 ~ 70	deg C
Tstg	Storage temperature	No condensation allowable	-25 ~ 85	deg C
Idrive	Gate drive current	Gate average current (Per one circuit)	100	mA

ELECTRICAL CHARACTERISTICS (unless otherwise noted, Ta=25C, VD=15V)

Symbol	Parameter	Conditions	Limits			Unit
			Min	Typ	Max	
VD	Supply voltage	Recommended range	14.2	15	15.8	V
VIN	Pull-up voltage on input side	Recommended range	4.75	5	5.25	V
IIH	"H" input signal current	Recommended range	10	13	16	mA
f	Switching frequency	Recommended range	-	-	20	kHz
RG	Gate resistance	Recommended range	2	-	-	ohm
VOH	Plus bias voltage	-	14	15.3	16.5	V
VOL	Minus bias voltage	-	-5.5	-	-11	V
tPLH	"L-H" propagation time	IIH = 13mA	-	0.4	1	us
tPHL	"H-L" propagation time	IIH = 13mA	-	0.4	1	us
VSC	SC detect voltage	-	15	-	-	V

INNER CIRCUIT

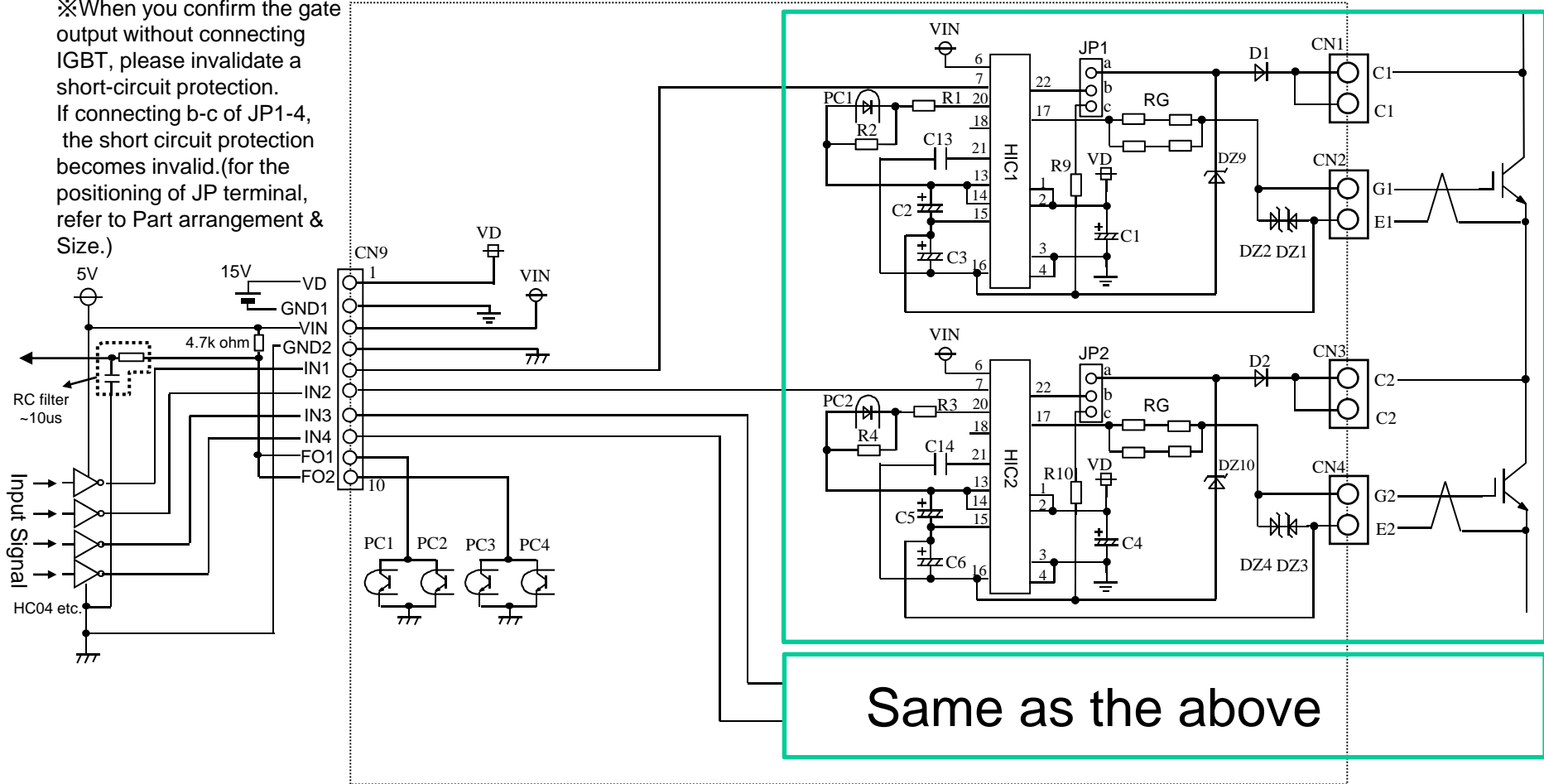


- HIC1 ~ 4 VLA551-01R (ISAHAYA)
- PC1 ~ 4 TLP785/TLP781 compatible (TOSHIBA)
- DZ1 ~ 8 Vz=18V, 500mW
- DZ9 ~ 12 Vz=30V, 500mW
- D1 ~ 4 RP1H(SanKen)
- RG Gate Resistor
- R1 ~ 12 4.7k ohm, 250mW
- CN1 ~ 8 5045-02A (molex)
- CN9 5045-10A(molex)
- C1 ~ 12 100uF,50V
- Low impedance
- JP1~4 RE-H032TD-1130 (JST)
- +JM-2BK-61(JST)

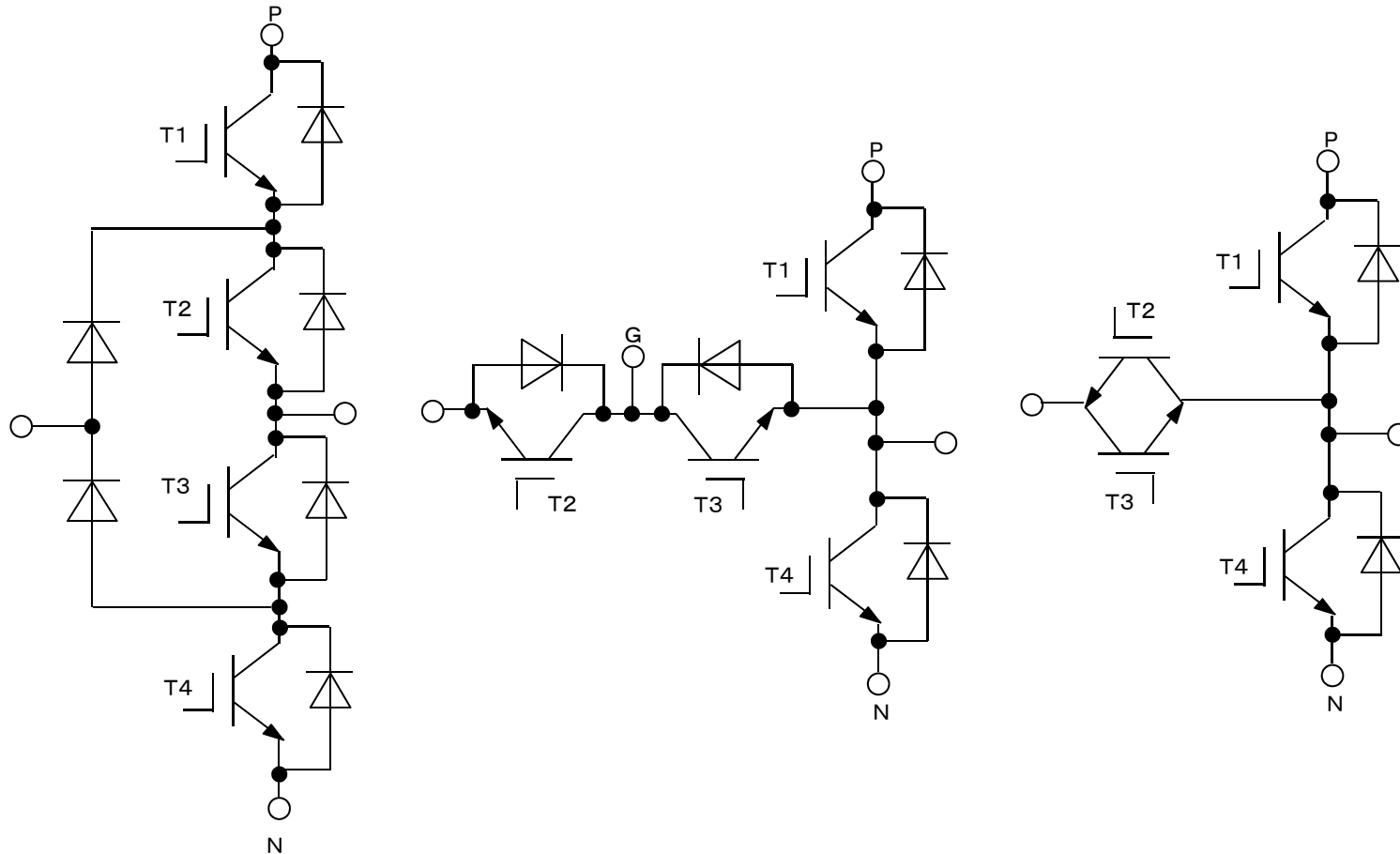
*1) Gate Resistor is not installed at the time of shipment. Please solder the chosen resistor.
 *2) C13-16 is not installed at the time of shipment. Please solder the chosen condenser if needed. (50V, ceramic)
 *3) JP1-4 : DETECT Enable a-b short (at shipping), Disable b-c short. (for the positioning of JP terminal, refer to Part arrangement & Size.)

APPLICATION EXAMPLE

※When you confirm the gate output without connecting IGBT, please invalidate a short-circuit protection.
If connecting b-c of JP1-4, the short circuit protection becomes invalid.(for the positioning of JP terminal, refer to Part arrangement & Size.)



Precaution for use of 3 level inverter application



※ Please disable short circuit protection function which the circuit driving T2 and T3. Then, the connection to collector terminal (C1,C2,C3 or C4) is unnecessary for the circuit disabled short circuit protection function.

JP1-4 : DETECT Enable a-b short(at shipping), Disenable b-c short .(for the positioning of JP terminal ,refer to Part arrangement & Size.)

Part arrangement & Size

