AN33014UA
Evaluation Board Manual

Panasonic Corporation
Automotive & Industrial Systems Company
Semiconductor Business Division

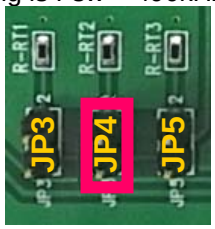
AN33014UA Evaluation board (front side)

This is a two layer circuit board. The front side is shown below. (The back side is shown on the next page.)

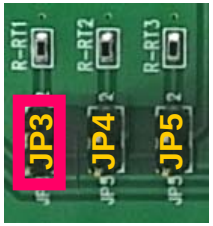
SYNC input terminal (external clock input)

RT resistor

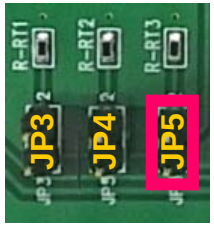
If JP4 is selected,
RT pin connected 130kW.
This setting is Fsw = 490kHz.



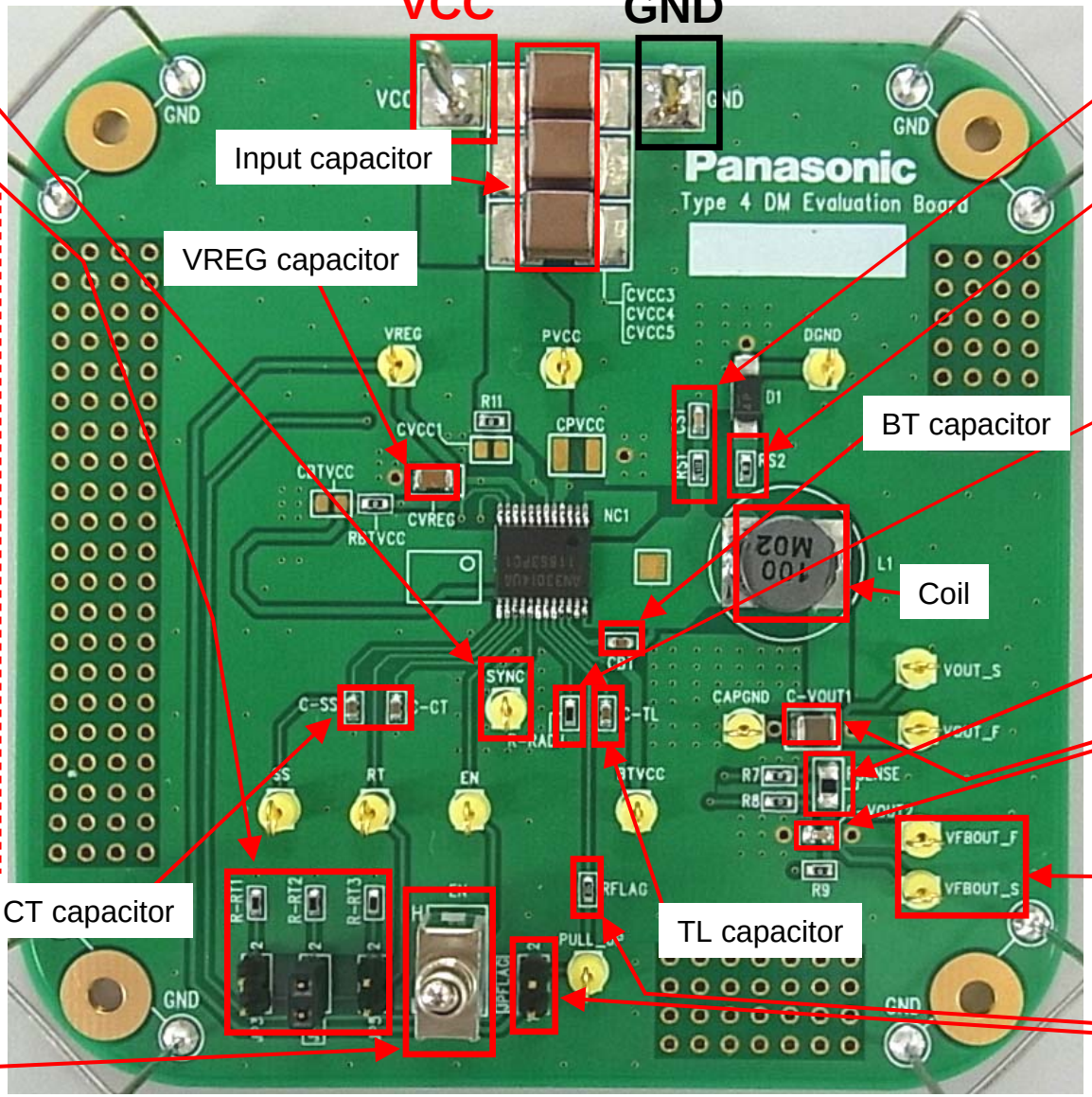
(below setting can select by JP3 or JP5)



Select JP3:
RT=22kW
→ Fsw = 2MHz



Select JP5:
RT=330kW
→ Fsw = 200kHz



Snubber circuit
Ferrite beads
MPZ1608S300A

R-RADJ
CFB adjusting resistor

RSENSE
Current detect resistor

C-VOUT1, 2
Output capacitor

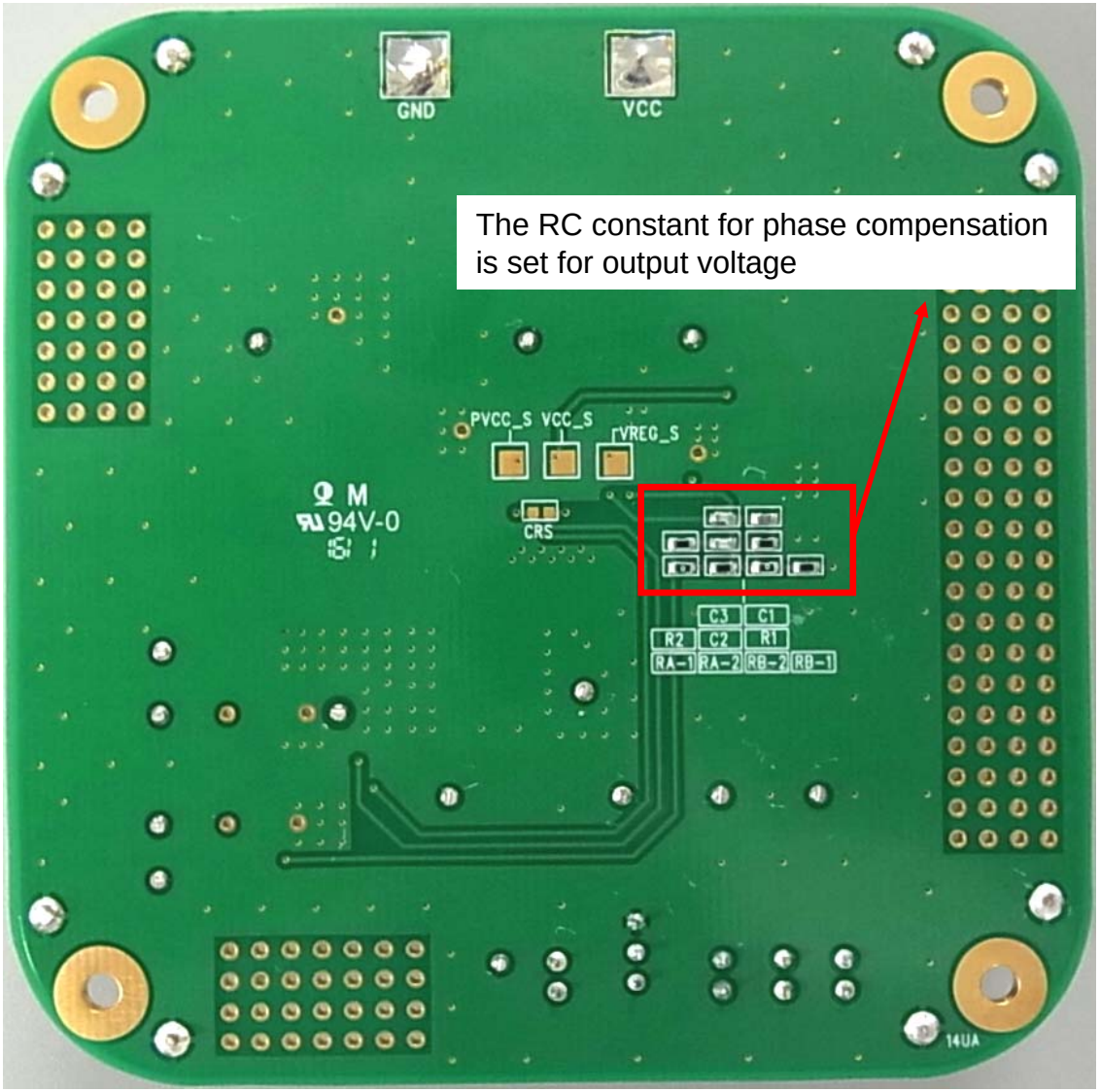
DCDC output pin (sense pin / force pin)
Output setting: 5V

JPFLAG
If you connect this jumper switch, the FLAG pin will be connected to VREG(4.9V) via a 200kΩ-register.

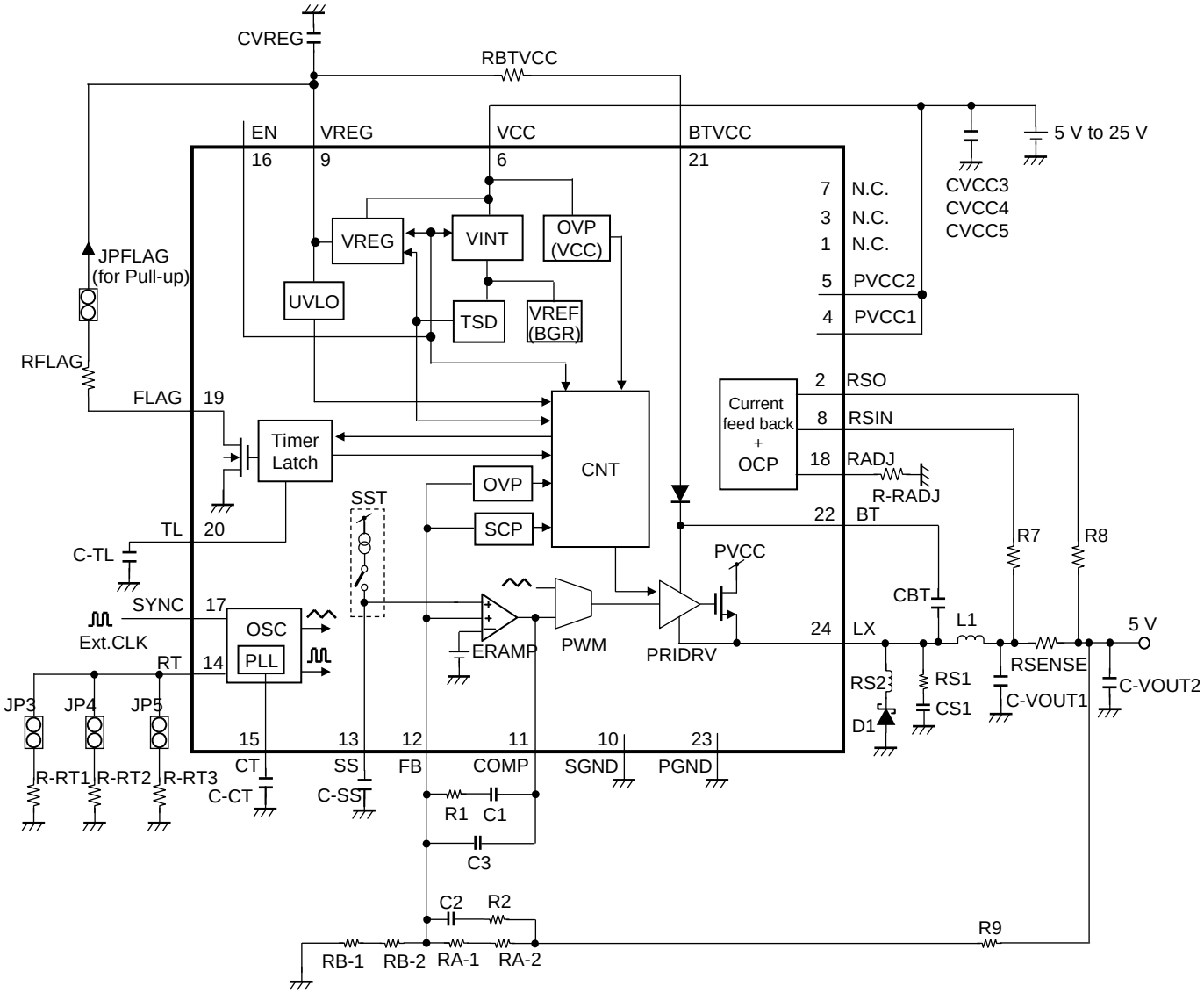
SW1
Enable control switch
Upper side (high): DCDC ON
Lower side (low): DCDC OFF

AN33014UA Evaluation board (back side)

This is a two layer circuit board. The back side is shown below. (The front side is shown on the previous page.)



AN33014UA Evaluation board (schematic)



AN33014UA Evaluation board (components)

The BOM of this board is shown below.

Table 1 : component on the evaluation board (reference)

Board Component Name	Part Name	Size	Value	Maker	Description
CBT	GCM188R11C104KA01J	JIS1608_[EIA0603]	0.1µF	Murata	Bootstrap Capacitor
C-CT	GCM188R11C104KA01J	JIS1608_[EIA0603]	0.1µF	Murata	LPF for PLL
C-SS	GCM188R11C104KA01J	JIS1608_[EIA0603]	0.1µF	Murata	Soft Start setting
C-TL	GCM188R11C104KA01J	JIS1608_[EIA0603]	0.1µF	Murata	Timer Latch setting
C1	GCM1882C1H222JA01J	JIS1608_[EIA0603]	2.2nF	Murata	Compensation Capacitor
C2	GCM1882C1H471JA01J	JIS1608_[EIA0603]	470pF	Murata	Compensation Capacitor
C3	GCM1882C1H270JA01J	JIS1608_[EIA0603]	27pF	Murata	Compensation Capacitor
CVREG	GCM188R71C105KA49J	JIS1608_[EIA0603]	1µF	Murata	VREG Capacitor
CVCC3, CVCC4, CVCC5	CKG57NX7R1H226MT	JIS5750[EIA2220]	22µF	TDK	Input Capacitor
C-VOUT1	TMK325C7226MM-T	JIS322_[EIA1210]	22µF	TAIYO,YUDEN	Output Capacitor
C-VOUT2	GCM188R11C104KA01J	JIS1608_[EIA0603]	0.1µF	Murata	Output Capacitor
L1	CDRH8D43-100NC	8.3(L) x 8.3(W)	10µH	SUMIDA	Inductor
D1	DB24416	3.8(L) x 2.4(W)	-	Panasonic	Schottky Diode
R1	ERA3AEB752V	JIS1608_[EIA0603]	R=7.5k	Panasonic	Compensation & Feedback Resistor
R2	ERA3AEB152V	JIS1608_[EIA0603]	R=1.5k	Panasonic	Compensation & Feedback Resistor
RA-1	ERA3AEB303V	JIS1608_[EIA0603]	R=30k	Panasonic	Compensation & Feedback Resistor
RB-1	ERA3AEB752V	JIS1608_[EIA0603]	R=7.5k	Panasonic	Compensation & Feedback Resistor
RA-2,RB-2	ERJ3GEY0R00V	JIS1608_[EIA0603]	R=0	Panasonic	for Evaluation
R-RADJ	ERA3AEB303V	JIS1608_[EIA0603]	R=30k	Panasonic	Current Feedback Adjustment Resistor
RFLAG	ERA3AEB204V	JIS1608_[EIA0603]	R=200k	Panasonic	Pull-up Resistor
R-RT1	ERA3AEB223V	JIS1608_[EIA0603]	R=22k	Panasonic	OSC Setting Resistor (Fsw = 2000kHz at selecting JP3)
R-RT2	ERA3AEB134V	JIS1608_[EIA0603]	R=130k	Panasonic	OSC Setting Resistor (Fsw = 490kHz at selecting JP4)
R-RT3	ERA3AEB393V	JIS1608_[EIA0603]	R=39k	Panasonic	OSC Setting Resistor (Fsw = 1370kHz at selecting JP5)
RSENSE	ERJ6BWFR050V	JIS2012_[EIA0805]	R=50m	Panasonic	Output Current Sense Resistor
R7,R8,R9,RBTVCC	ERJ3GEY0R00V	JIS1608_[EIA0603]	R=0	Panasonic	for Evaluation
CS1	GCM1882C1H332JA01J	JIS1608_[EIA0603]	3300pF	Murata	Snubber Circuit
RS1	ERA3AEB221V	JIS1608_[EIA0603]	R=220	Panasonic	Snubber Circuit
RS2	MPZ1608S300A	JIS1608_[EIA0603]	30 ohm at 100MHz	TDK	Ferrite Beads for EMI filter

Note: The specifications of the BOM are reference values. Other components might be mounted depending on target values of output voltage, frequency, etc.

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