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# AN33017UA

## Evaluation Board Manual

**Panasonic Corporation**  
**Automotive & Industrial Systems Company**  
**Semiconductor Business Division**

# AN33017UA 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)

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

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

**FLAG**  
This pin can check FLAG output.

**SW2: TL\_CTRL control switch**

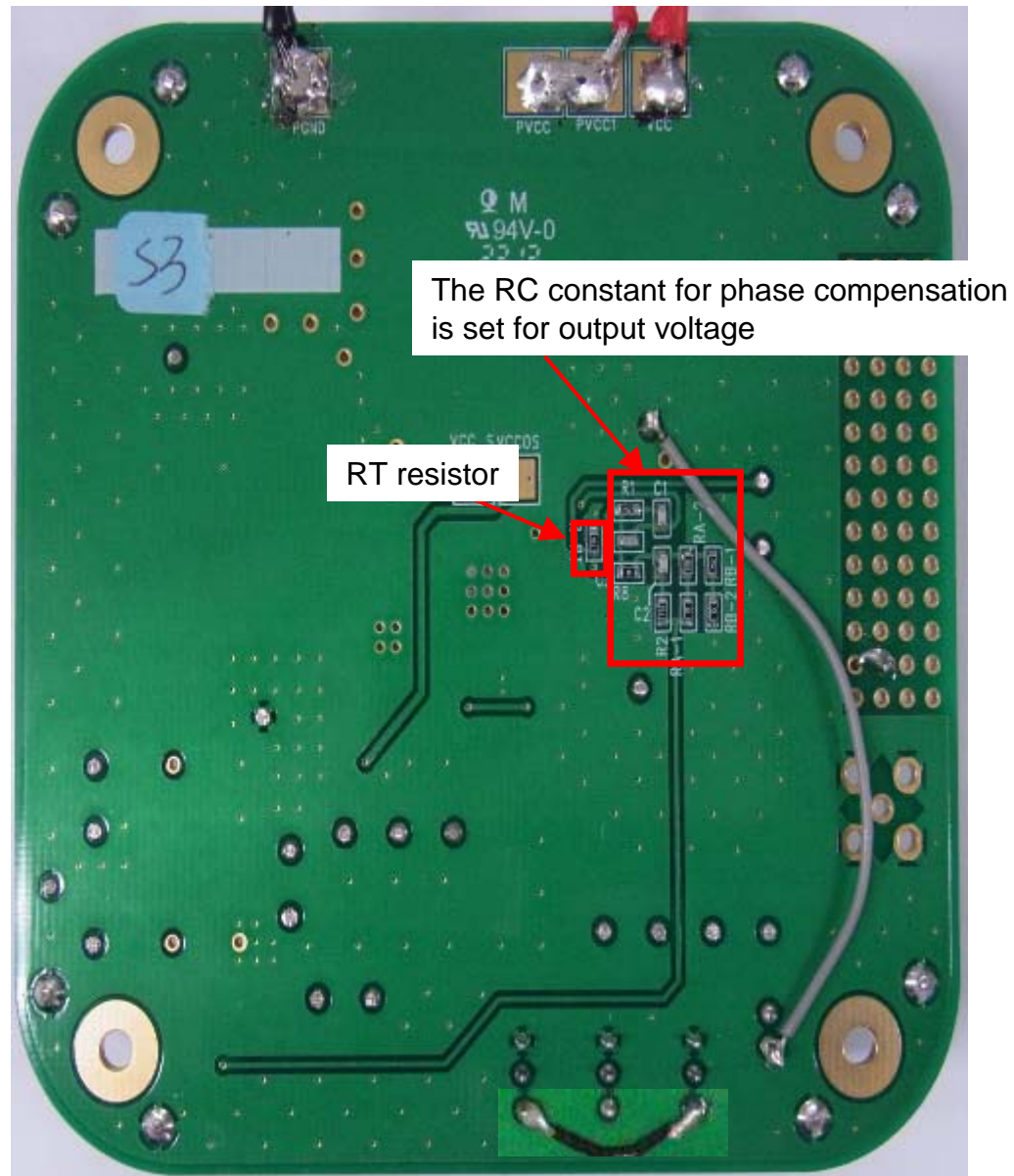
TL_CTRL Pin connection	The condition that IC keep SCP or OCP over setting time by TL		
	FLAG Pin	DCDC Operation	DCDC Return method
(Upper side: High) Connect to VREG	Pull- down	Continue	After release abnormal state, IC is continue to operate.( Howe ver, FLAG pin keep Pull-down state)
(Lower side: Low) Connect to GND	Pull- down	Stop	IC is reset by EN pin.

**VCC**  
**GND**  
Input capacitor  
SBD  
VREG capacitor  
SS, CT capacitor  
Snubber circuit  
Coil  
BT capacitor  
Current detect resistor (R\_SENSE)  
TL capacitor  
DCDC output capacitor  
Load Resistor  
DCDC output  
TL\_CTRL pin  
EN pin  
TEST(OCPDET) pin

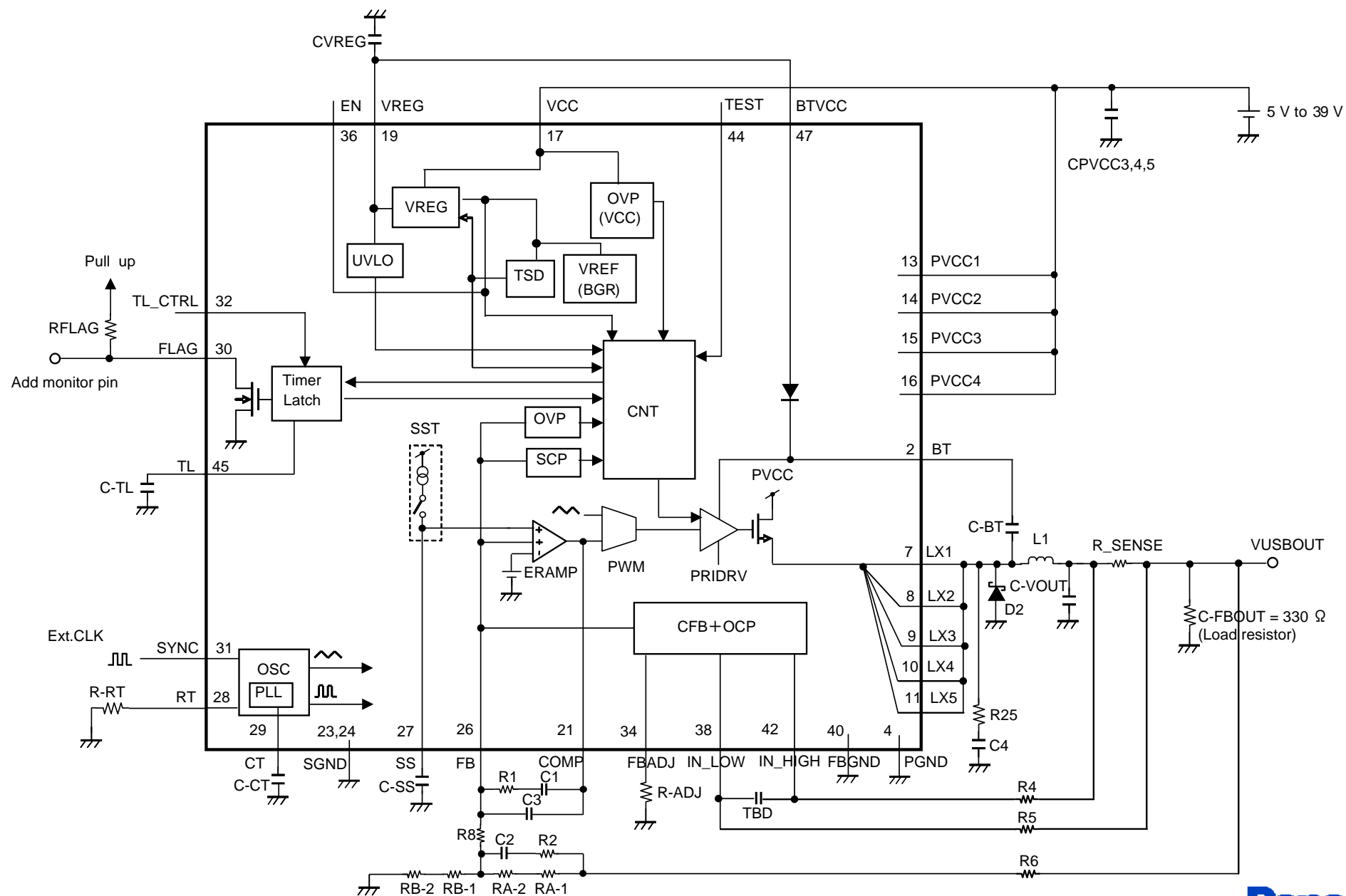
**SW3: OCPDET switch**  
If the difference voltage between  
R\_SENSE is exceed below value,  
FLAG output change H $\rightarrow$ L.  
Upper side (high) :75mV  
(1.5A@50m $\Omega$ )  
Lower side (low) :125mV  
(2.5A@50m $\Omega$ )

## AN33017UA 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.)



# AN33017UA Evaluation board (schematic)



# AN33017UA Evaluation board (components)

The BOM of this board is shown below.

Switching frequency set 490kHz (R\_RT=130kΩ), Over current set 2.5A (TEST pin = Low).

**Table 1 : component on the evaluation board (reference)**

Board Component Name	Part Name	Size	Value	Maker	Description
C-BT,C-CT,C-SS,C-TL	GCM188R11C104KA01J	JIS1608_[EIA0603]	0.1uF	Murata	Setting Capacitor
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
C4	GRM188B11H472KA01	JIS1608_[EIA0603]	4700pF	Murata	Snubber Capacitor
CVREG	GCM188R71C105KA49J	JIS1608_[EIA0603]	1uF	Murata	VREG Capacitor
CPVCC3,4,5	CKG57NX7R1H226MT	JIS5750_[EIA2220]	22uF	TDK	Input Capacitor
C-VOUT	TMK325C7226MM-T	JIS3225_[EIA1210]	22uF	TAIYO,YUDEN	Output Capacitor
L1	CDRH8D43-100NC	8.3(L) x 8.3(W)	10uH	SUMIDA	Inductor
IC1	AN33017UA	9.0(L) x 9.0(W)	-	Panasonic	1ch DCDC Converter
D2	DB24602	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
R25	ERJ8GEYJ151V	JIS1608_[EIA0603]	R=150	Panasonic	Snubber Resistor
RA-2	ERA3AEB303V	JIS1608_[EIA0603]	R=30K	Panasonic	Compensation & Feedback Resistor
RA-1	ERJ3GEY0R00V	JIS1608_[EIA0603]	R=0	Panasonic	Compensation & Feedback Resistor
RB-1	ERA3AEB752V	JIS1608_[EIA0603]	R=7.5K	Panasonic	Compensation & Feedback Resistor
RB-2	ERJ3GEY0R00V	JIS1608_[EIA0603]	R=0	Panasonic	Compensation & Feedback Resistor
RFLAG	ERA3AEB204V	JIS1608_[EIA0603]	R=200K	Panasonic	Pull-up Resistor
R-RT	ERA3AEB134V	JIS1608_[EIA0603]	R=130K	Panasonic	OSC Setting Resistor
R-ADJ	ERA3AEB123V	JIS1608_[EIA0603]	R=12K	Panasonic	CFB Adjust Resistor
R4, R5, R6, R8	ERJ3GEY0R00V	JIS1608_[EIA0603]	R=0	Panasonic	0 ohm Resistor (for evaluation)
C-FBOUT	ERJ3GEYJ331	JIS1608_[EIA0603]	R=330	Panasonic	Load Resistor
R_SENSE	ERJ8BWF050V	JIS3216_[EIA1206]	R=50m	Panasonic	OCP Sense Resistor

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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