



偉詮電子股份有限公司
Weltrend Semiconductor, Inc.

WT7512

PC POWER SUPPLY SUPERVISOR

Data Sheet

REV. 1.10

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新竹市科學工業園區工業東九路24號2樓
2F, No. 24, Industry E. 9th RD., Science-Based Industrial Park, Hsin-Chu, Taiwan
TEL:886-3-5780241 FAX:886-3-5794278.5770419
Email:support@weltrend.com.tw

GENERAL DESCRIPTION

The WT7512 provides protection circuits, power good output (PGO), fault protection latch (FPL_N), and a protection detector function (PDON_N) control. It can minimize external components of switching power supply systems in personal computer.

The Over / Under Voltage Detector (OVD / UVD) monitors 3.3V, 5V, 12V input voltage level. When OVD or UVD detect the fault voltage level, the FPL_N is latched HIGH and PGO go low. The latch can be reset by PDON_N go HIGH. There is 2.4mS delay time for PDON_N turn off FPL_N.

When OVD and UVD detect the right voltage level, the power good output (PGO) will be issue.

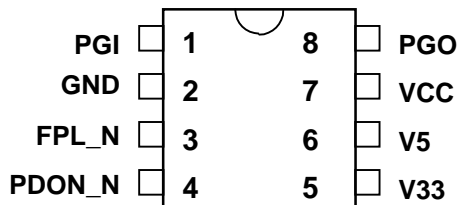
The WT7512 is similar to WT7510. It added under voltage detector of 12V and the short power-on protection. And the delay time 1.2mS is changed to 2.4mS.

FEATURES

- The Over / Under Voltage Detector (OVD / UVD) monitors 3.3V, 5V, 12V input voltage level.
- Both of the power good output (PGO) and fault protection latch (FPL_N) are Open Drain Output.
- 75 / 300 ms time delay for UVD.
- 300 ms time delay for PGO.
- 38 ms for PDON_N input signal De-bounce.
- 73 us for internal signal De-glitches.
- 2.4 ms time delay for PDON_N turn-off FPL_N.

PIN ASSIGNMENT AND PACKAGE TYPE

Pin assignment

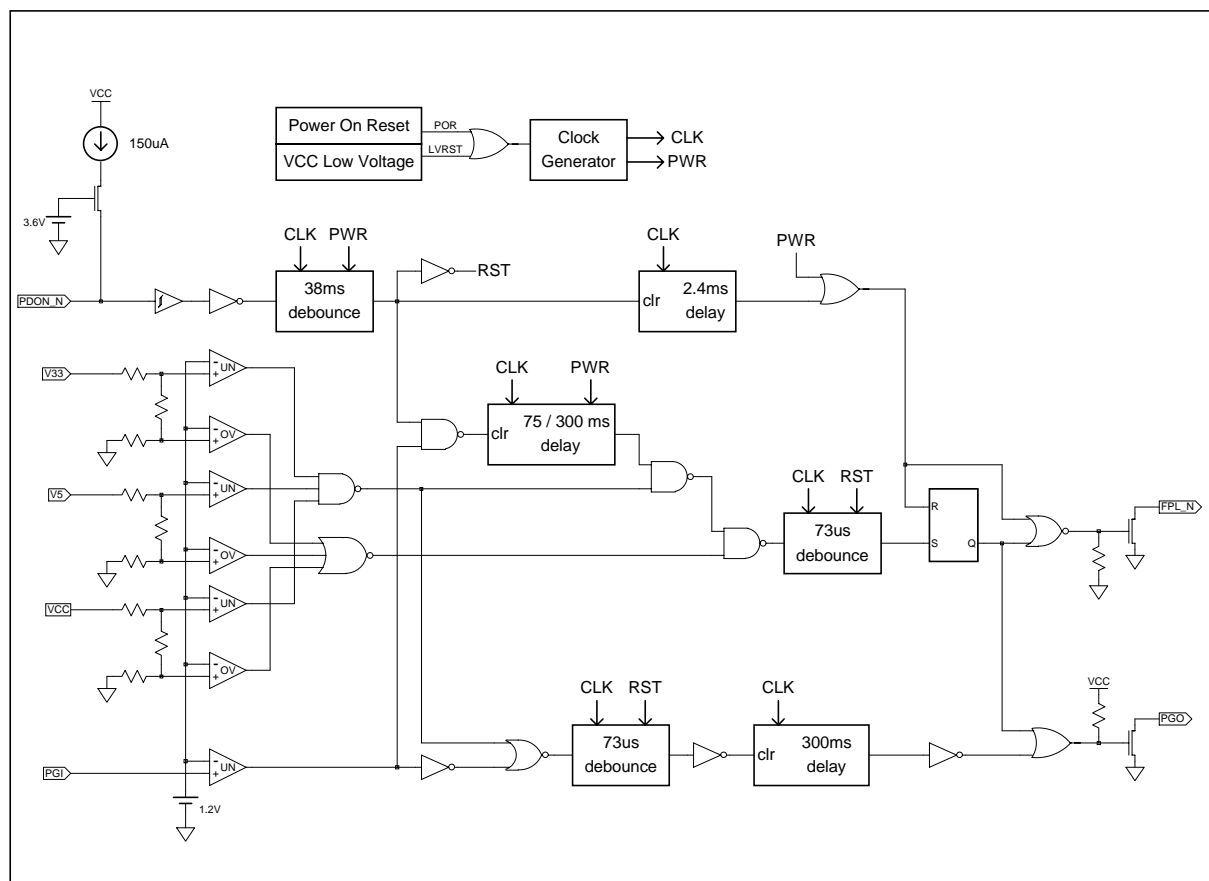


Package type	ORDERING INFORMATION
8-Pin Plastic DIP	WT7512-N080WT-12
8-Pin Plastic SOIC	WT7512-S080WT-12

PIN DESCRIPTION

Pin No.	Pin Name	TYPE	Description
1	PGI	I	power good input pin
2	GND	P	Ground
3	FPL_N	O	fault protection latch output pin(open drain output)
4	PDON_N	I	protection detector function ON/OFF control input pin
5	V33	I	3.3V input pin
6	V5	I	5V input pin
7	VCC	I	Supply voltage / 12V input pin
8	PGO	O	power good output pin(open drain output)

BLOCK DIAGRAM



RECOMMENDED OPERATING CONDITIONS

Parameter		Conditions	Min.	Typ.	Max.	Unit
Supply voltage, VCC			4	12	15	V
Input voltage	PDON_N, V5, V33, PGI				7	V
Output voltage	FPL_N				15	V
	PGO				7	V
Operating temperature			-40		125	°C
Output sink current	FPL_N				30	mA
	PGO				10	mA
Supply voltage rising time			1			ms

ELECTRICAL CHARACTERISTICS, at Ta=25°C and V_{CC}=5V.
Over Voltage Detection

Parameter		Condition	Min.	Typ.	Max.	Unit
Over voltage threshold	V33		3.7	3.9	4.1	V
	V5		5.7	6.1	6.5	V
	Vcc / V12		12.8	13.4	13.9	V
I _{LEAKAGE}	Leakage current (FPL_N)	V(FPL_N) = 5V	5			uA
V _{OL}	Low level output voltage (FPL_N)	I _{sink} 10mA	0.3			V
		I _{sink} 30mA	0.7			

PGI and PGO

Parameter		Condition	Min.	Typ.	Max.	Unit
Under voltage threshold	V33		2.55	2.69	2.83	V
	V5		4.1	4.3	4.47	V
	V _{CC} / V12		8.8	9.3	9.8	V
Input threshold voltage(PGI)			1.16	1.20	1.24	V
I _{LEAKAGE}	Leakage current(PGO)	PGO = 5V	5			uA
V _{OL}	Low level output voltage(PGO)		0.4			V

PDON_N

Parameter	Condition	Min.	Typ.	Max.	Unit
Input pull-up current	PDON_N= 0V		150		uA
High-level input voltage		2.4			V
Low-level input voltage				1.2	V

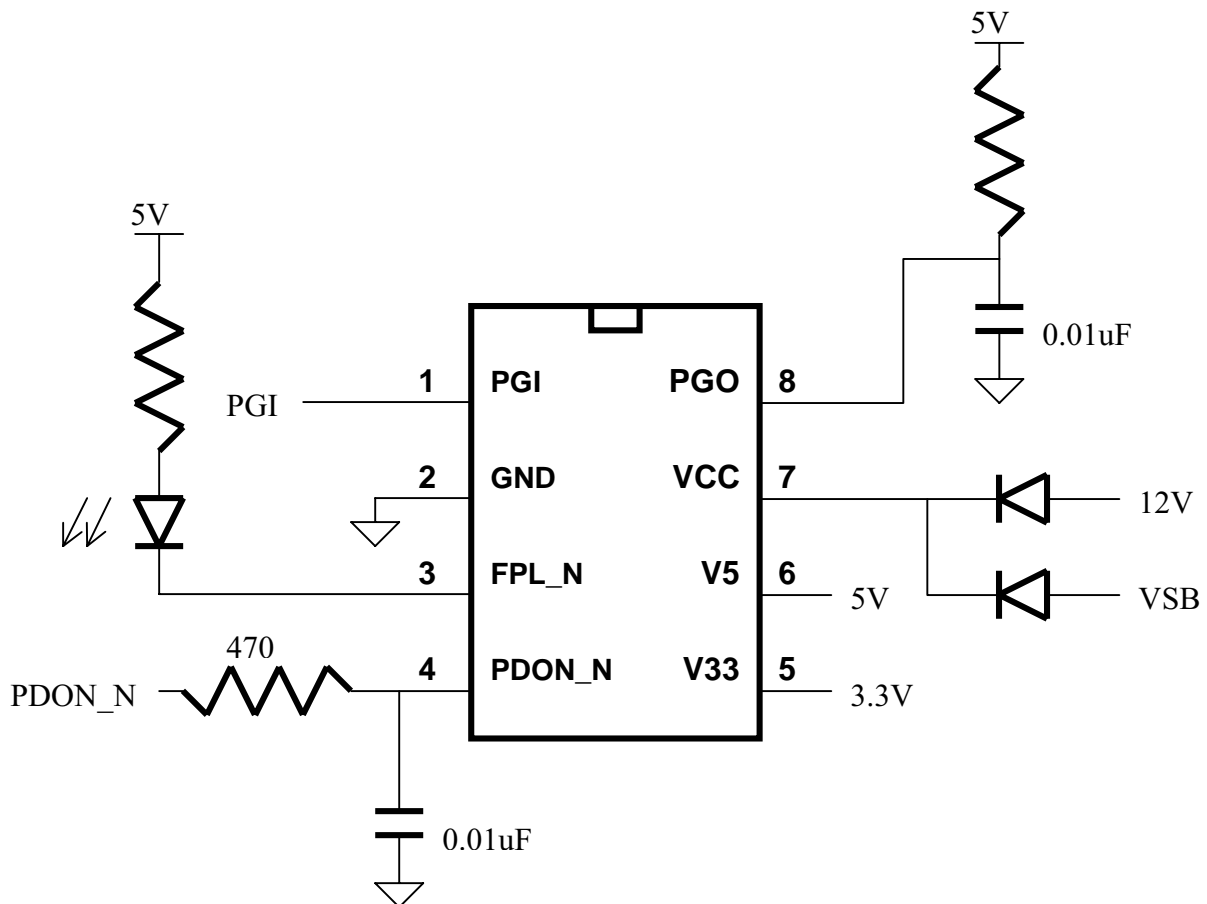
TOTAL DEVICE

Parameter	Condition	Min.	Typ.	Max.	Unit
I _{CC} Supply current	PDON_N= 5V			1	mA
V _{CC} low voltage			3		V

SWITCHING CHARACTERISTICS, V_{CC}=5V

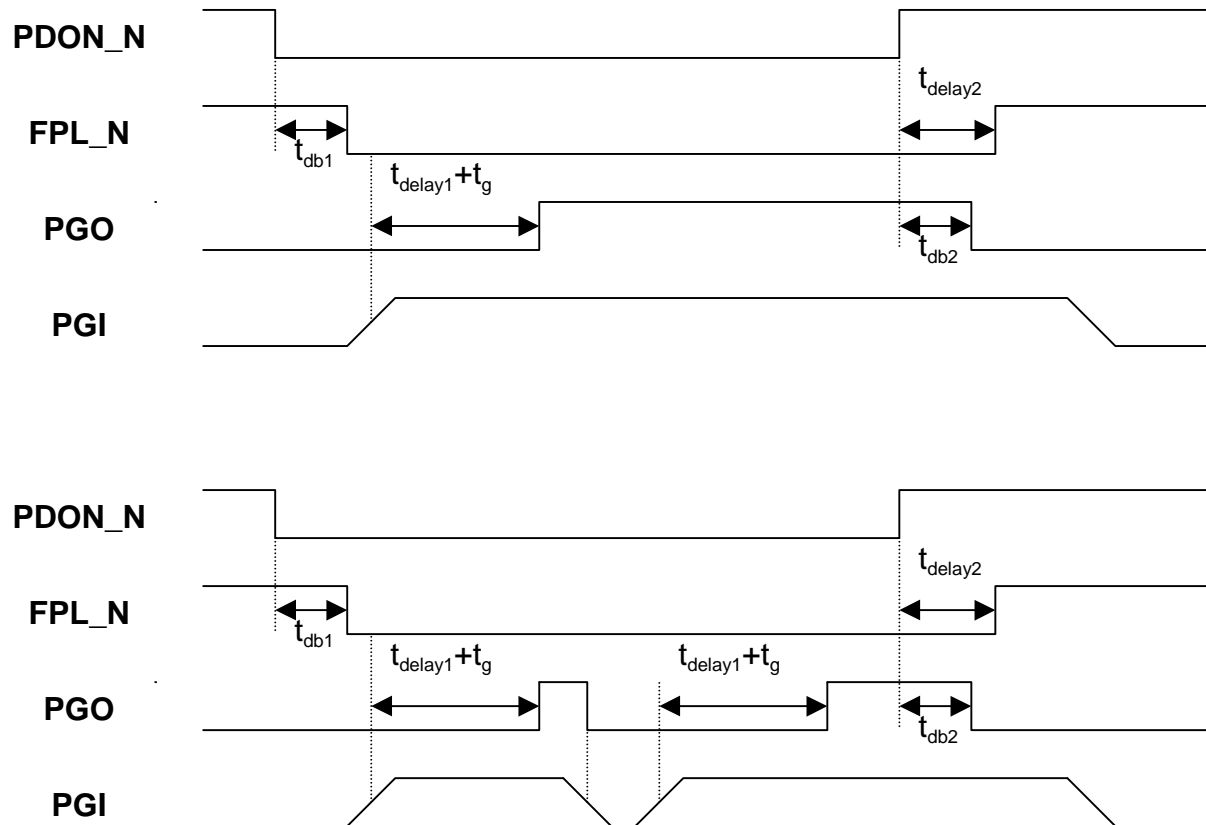
Parameter		Condition	Min.	Typ.	Max.	Unit
t _{db1}	De-bounce time (PDON_N)		32	38	61	mS
t _{delay1}	Delay time (PGI to PGO)		200	300	490	mS
t _{db2}	De-bounce time (PDON_N)		32	38	61	mS
t _g	De-glitch time		63	73	120	uS
t _{delay2}	PDON_N to FPL_N delay time		t _{db2} +2.0	t _{db2} +2.4	t _{db2} +3.8	mS
t _{delay3}	Internal UVD delay time	FPL_N go low & every time PGI > 1.2V	65	75	122	mS
		the first time power on & FPL_N go low & PGI < 1.2V	260	300	488	mS

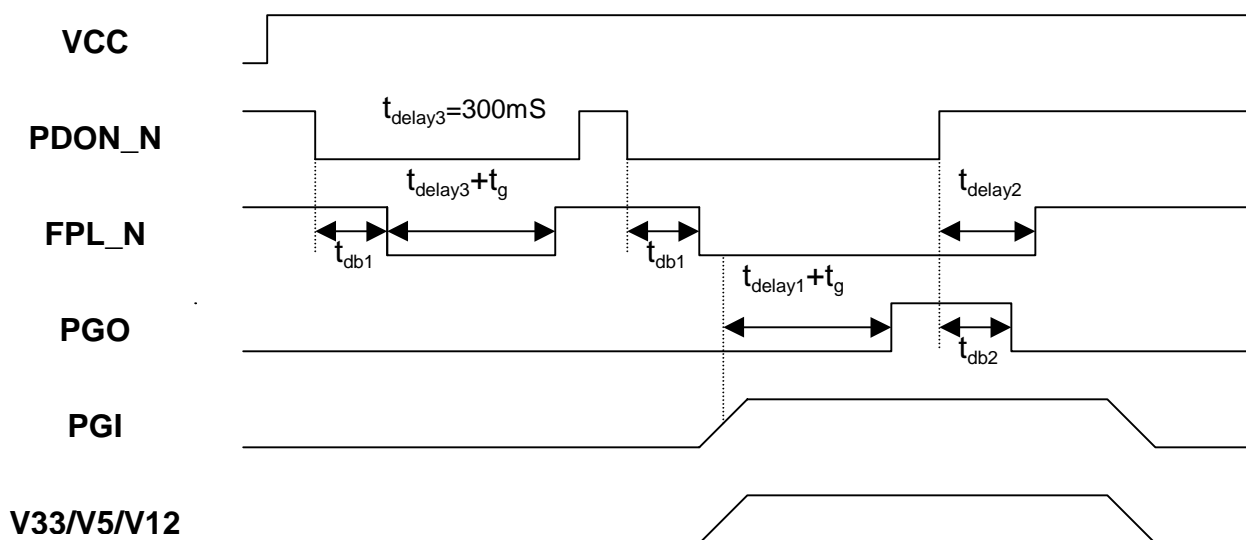
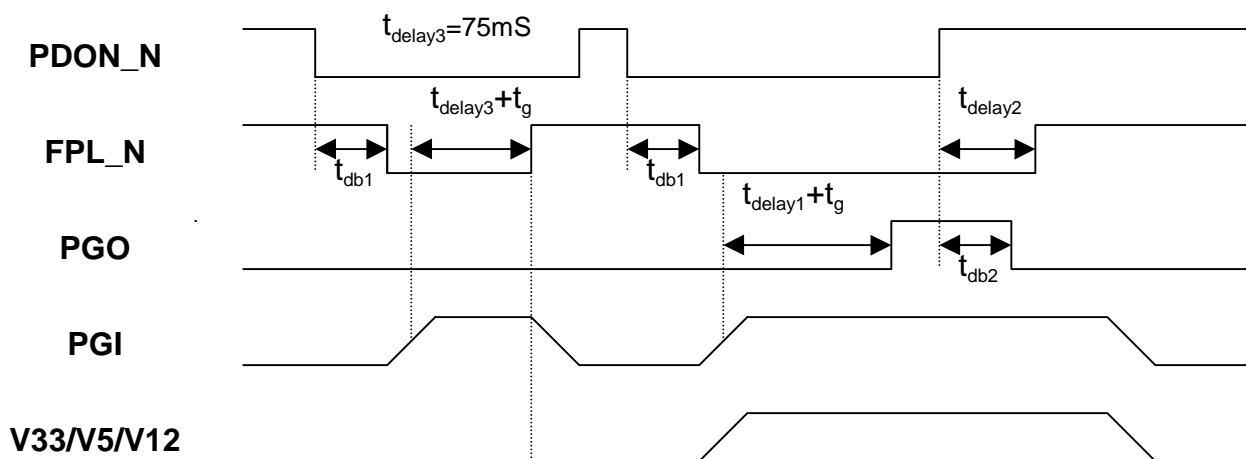
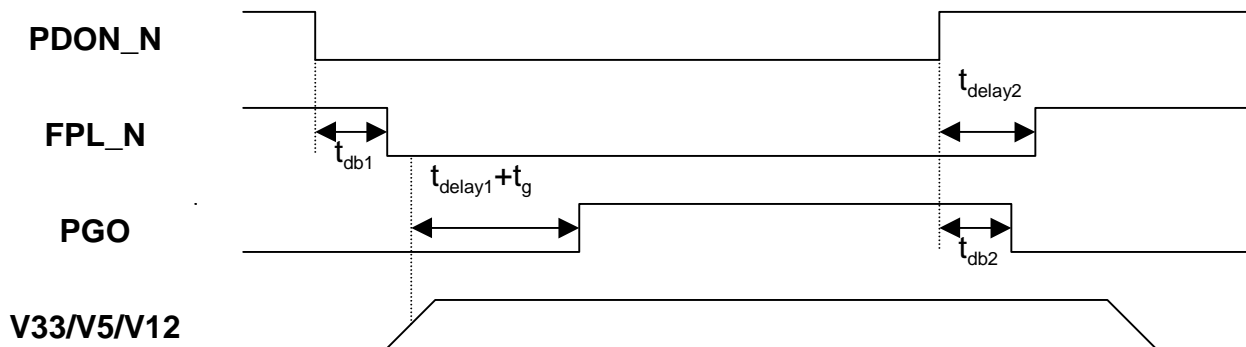
APPLICATION CIRCUIT



APPLICATION TIMMING

1.) PGI (UNDER_VOLTAGE) :



2.) V33, V5, V12 (UNDER_VOLTAGE) :


3.) V33, V5, V12 (OVER_VOLTAGE) :
