

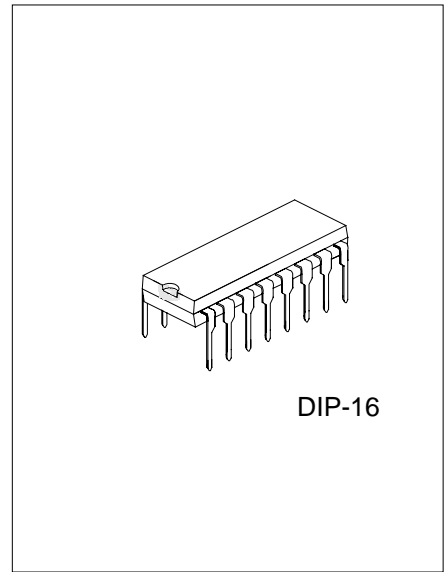
PWM CONTROLLER WITH SUPERVISORY CIRCUIT FOR SWITCHING POWER SUPPLY

DESCRIPTION

UTC 3521 PWM controller is designed for switching mode power supply for PCs etc. It provides all the functions similar to combinations of industrial 494 plus 3510 circuits.

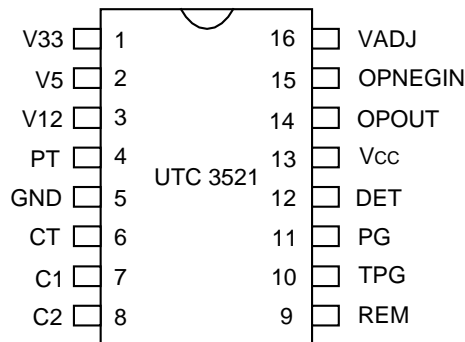
FEATURES

- * Over-voltage protection for 3.3V, 5V and 12V with delay
- * Under-voltage detection for 3.3V, 5V and 12V with delay
- * Remote ON/OFF function
- * Power good circuitry for PCs.



*Pb-free plating product number: 3521L

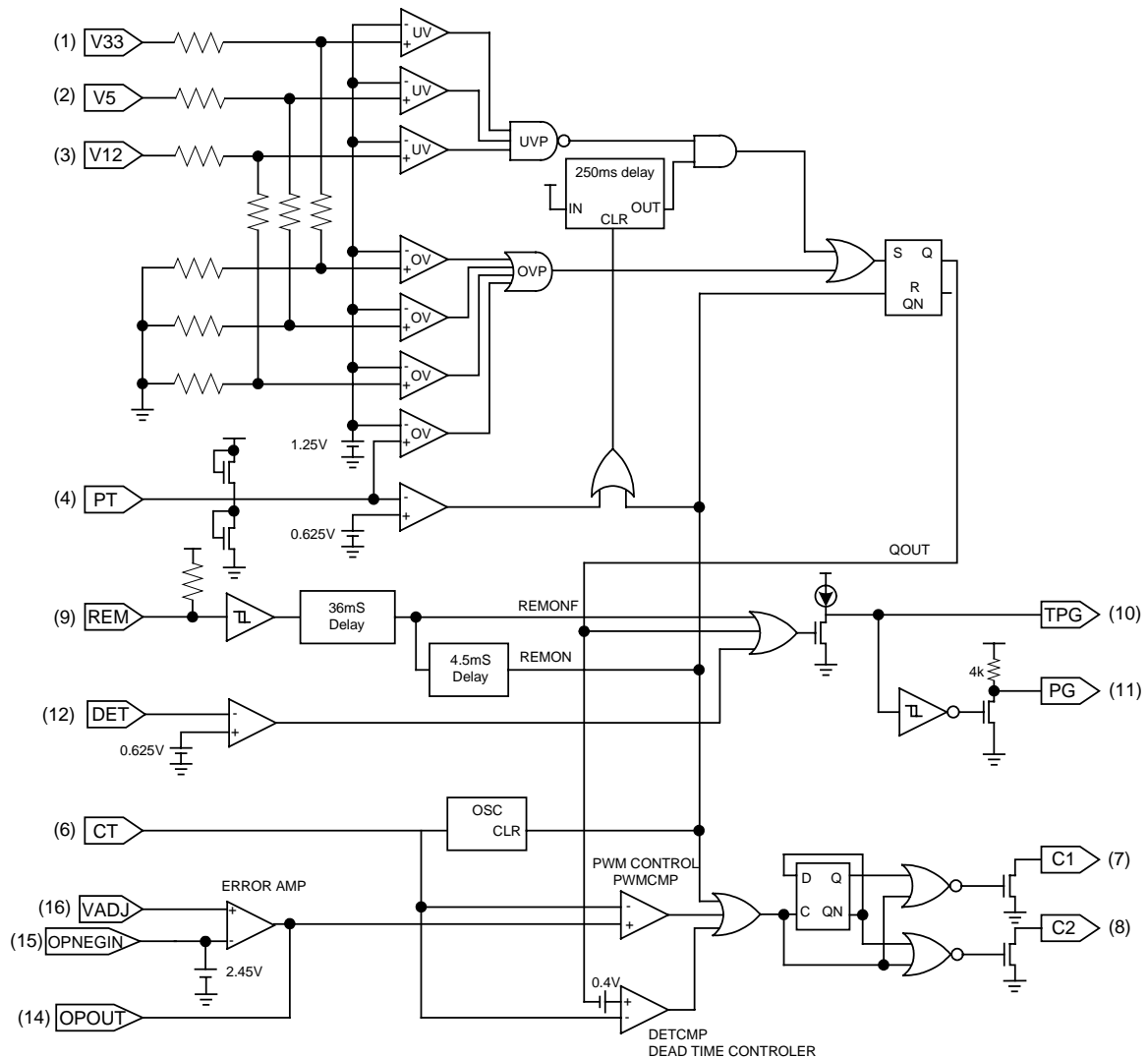
PIN CONFIGURATION



PIN DESCRIPTION

PIN NO.	PIN NAME	TYPE	FUNCTIONS
1	V33	I	OVP/UVI INPUT FOR 3.3V
2	V5	I	OVP/UVI INPUT FOR 5V
3	V12	I	OVP/UVI INPUT FOR 12V
4	PT	I	ADDITIONAL OVP PROTECTION
5	GND	P	GROUND
6	CT		CAP FOR OSCILLATION FREQUENCY
7	C1	O	OUTPUT 1
8	C2	O	OUTPUT 2
9	REM	I	REMOTE ON/OFF PIN.
10	TPG		POWER GOOD DELAY TIME SETTING
11	PG	O	POWER GOOD SIGNAL OUT.
12	DET	I	POWER GOOD SIGNAL DETECTION INPUT
13	VCC	P	SUPPLY VOLTAGE FOR IC
14	OPOUT	O	OP AMP OUTPUT
15	OPNEGIN	I	OP AMP NEGATIVE INPUT
16	VADJ	I	VOLTAGE ADJUST PIN

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

(Vcc=5.5V, unless otherwise noted.)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	Vcc	5.5	V
Drain output voltage	Vcc1, Vcc2	5.5	V
Drain output current	Icc1, Icc2	200	mA
Power Dissipation	PD	200	mW
Operating Temperature	Topr	-10 ~ +70	
Storage Temperature	Tstg	-65 ~ +150	

ELECTRICAL CHARACTERISTICS

(Ta=25 , Vcc =5V, unless otherwise noted.)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
DEAD TIME CONTROL SECTION						
Input Threshold Voltage	V _{thdt}	ZERO DUTY CYCLE MAX. DUTY CYCLE		3.0 0.1	3.3	V
ERROR AMP SECTION						
Close Loop Voltage Gain		0.5V ~ 3.5V		65		dB
Cross Over Point		0dB		320		KHz
Opneg Bias Voltage		OPNEG OPEN	2.38	2.45	2.52	V
OUTPUT SECTION						
Output Saturation Voltage	V _{dssat}	I _d =200mA		1.1	1.3	V
Drain Off-State Current	I _{doff}	V _{cc} =V _d =V _s =0V		2	10	μA
Rising Time	T _r			100	200	ns
Falling Time	T _f			50	200	ns
PROTECTION SECTION						
Over Voltage Protection (OVP)	V ₃₃		3.8	4.1	4.3	V
	V ₅		5.8	6.2	6.6	
	V ₁₂		4.41	4.64	4.90	
	P _T		1.2	1.25	1.3	
Under Voltage Protection (UVP)	V ₃₃		1.78	1.98	2.18	V
	V ₅		2.70	3.00	3.30	
	V ₁₂		2.11	2.37	2.63	
UVP Disable Voltage	P _T		0.55	0.62	0.68	V
UVP Delay Time	T _{d,uvp}		100	250	500	ms
REMOTE ON/OFF SECTION						
REM High Input Voltage	V _{remh}		2.0			V
REM Low Input Voltage	V _{reml}				0.8	V
REM Pull High Voltage	V _{remo}		2.0		5.25	V
REM Delay Time	T _{rem}		30	36	42	ms
REM Off Delay Time	T _{off}		3.5	4.5	5.5	ms
POWER GOOD SECTION						
Detecting Input Voltage	V _{det}		0.55	0.62	0.68	V
PG Output Pull-up Resistor	R _{pup.pg}			4		K
PG Output Load Resistor	R _{pg}		0.5	1	2	K
Charging Current For TPG	I _{chg.tpg}			30		μA
PG Delay Time	T _{d.pg}	C=2.2 μF	100	250	500	ms
Output Saturation Voltage	V _{sat.pg}	I _{pg} =10mA		0.2	0.4	V
TOTAL DEVICE						
Standby Supply Current	I _{cc}			10	20	mA
OSCILLATION SECTION						
Oscillation Frequency	F _{osc}	C _T =2200P	50		60	KHz
Frequency Change With TEMP.	F _{osc/T}	C _T =2200P		2		%

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