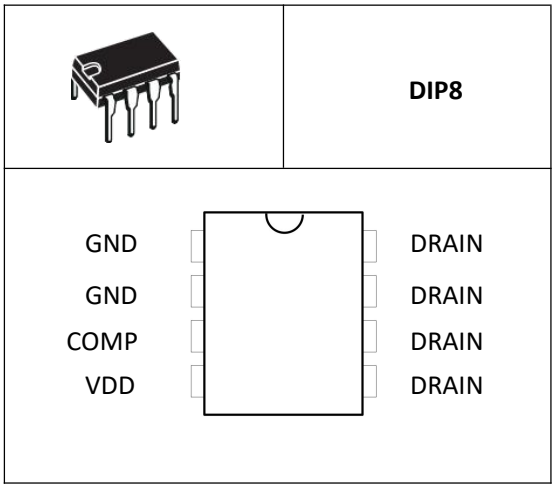
DESCRIPTION

CNVIPER22A is a high-performance off-line PWM switching power supply controller, which meets the requirement of green environmental protection. The circuit has built-in high-voltage start loop, soft start loop and multiple protection functions, with simplified application periphery and high reliability. Under certain operating conditions, the circuit can also be used as a non-isolated application scheme.

Available in DIP-8 Package.

CNVIPER22A can be widely used in all kinds of economical switching power supply.

PIN CONFIGURATION



FEATURES

① Build-in 800V power MOSFET
② Built-in high voltage start-up circuit
③ AC input voltage range:85V ~ 265V
④ Latch pulse width modulation, pulse current limiting detection
⑤ Soft start
⑥ Built-in over-load protection(OLP),over temperature protection(OTP),VDD over-voltage protection(OVP), output open/short circuit protection function
⑦ With functions of frequency modulation and vibrating frequency for low EMI
⑧ No-load power consumption is less than 0.15W

TYPICAL APPLICATION

① Small household application power supplies
② Electromagnetic oven power supplies
③ Used throughout the voltage range of 12W

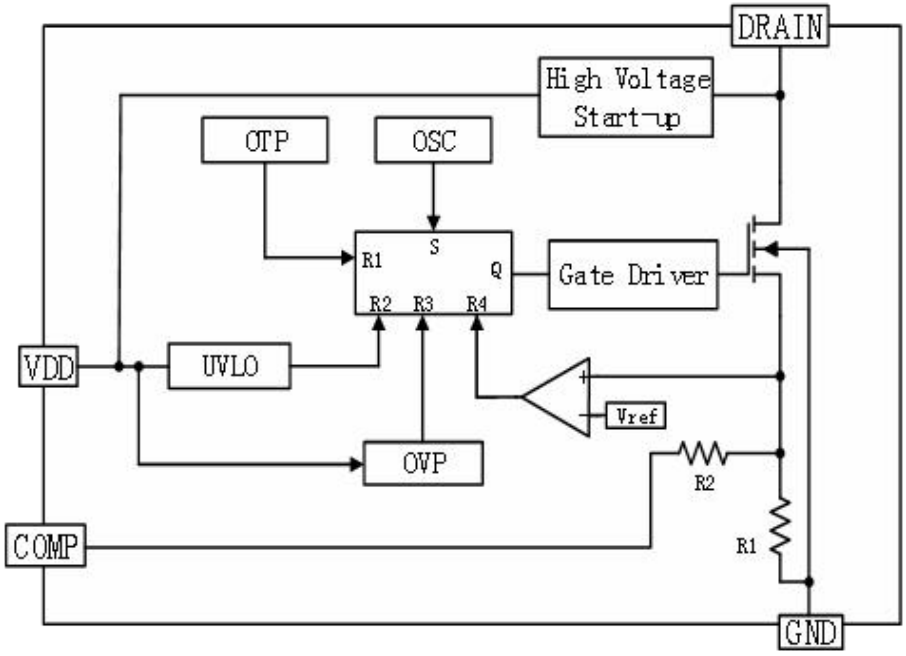
PIN DESCRIPTION

PIN	SYMBOL	DESCRIPTION	PIN	SYMBOL	DESCRIPTION
1.	GND	Ground	5.	DRAIN	Internal MOSFET drain
2.			6.		
3.	COMP	Output Feedback	7.		
4.	VDD	Power Supply	8.		

ORDERING INFORMATION

DEVICE	PACKAGE	MARKING	PACKING	
CNVIPER22A	DIP8	CNVIPER22A	Tube	10K/Small Box

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS（TA=25℃）

PARAMETER	SYMBOL	VALUE	UNIT
VDD Pin Voltage	V_{DD}	-0.3~45.0	V
COMP terminal voltage	V_{COMP}	-0.3~6.0	V
DRAIN terminal voltage	V_{DRAIN}	-0.3~800	V
PN junction to ambient thermal resistance	θ_{JA}	55	℃/W
Operating Temperature	T_J	-40~150	℃
Storage Temperature	T_{STG}	-55~150	℃
ESD(Human Body Model)	—	2	KV

Note： Instant maximum ratings specified will not cause permanent damage to the product, while long maximum ratings specified applied will do and may affect product reliability

ELECTRICAL CHARACTERISTICS（TA=25℃）

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
VDD Voltage Section						
Working power range	V_{DD}	—	10	—	35	V
Start-up Voltage	V_{DD_ON}	—	13	15	17	V
Shut Down	V_{DD_OFF}	—	7	8	9	V
VDD Restart Voltage	V_{DD_RST}	—	—	6.0	—	V
VDD Over-voltage Protection Voltage	V_{DD_OVP}	—	36	40	44	V
VDD Start-up Charging Current	I_{HV}	V_{AC}=85V~265V	—	1.25	—	mA
Start-up Current	I_{START}	V_{DD} = V_{DD_ON}-1V	—	300	—	μA
Operating Current	I_{CC}	V_{DD} = V_{DD_ON}+1V V_{COMP}=0.5V	—	3.5	6	mA
OSCILLATOR Section						
Initial Accuracy	OSC	—	58	65	70	kHz
Frequency Variation	F_D	—	—	±5	—	kHz
Current detection Section						
Output Limiting Current	IS	—	600	700	800	mA
COMP Sense Section						
COMP Shut Down	V_{COMP_SP}	—	1.1	1.2	1.3	V
COMP Pin Input Impedance	R_{COMP}	—	—	1.0	—	kΩ
Pulse width modulation Section						
Maximum Duty Cycle	D_{MAX}	—	—	—	90	%
Minimum Duty Cycle	D_{MIN}	—	5	—	—	%
Minimum Turn On Time	T_{LEB}	—	—	400	—	nS
Minimum Turn On Time	T_{onmin}	—	—	800	—	nS
Temperature protection Sense Section						
Thermal protection temperature	T_{SD}	—	—	150	—	°C
Thermal protection hysteresis temperature	T_{SD_DLY}	—	—	30	—	°C
Power MOSFET Section						
MOSFET Drain Source Voltage Withstand	V_{BVDSS}	V_{GS}=0V, I_D=0.25mA	800	—	—	V
MOSFET On Resistance	R_{dson}	I_D=1A	—	10	—	Ω

APPLICATION CIRCUIT

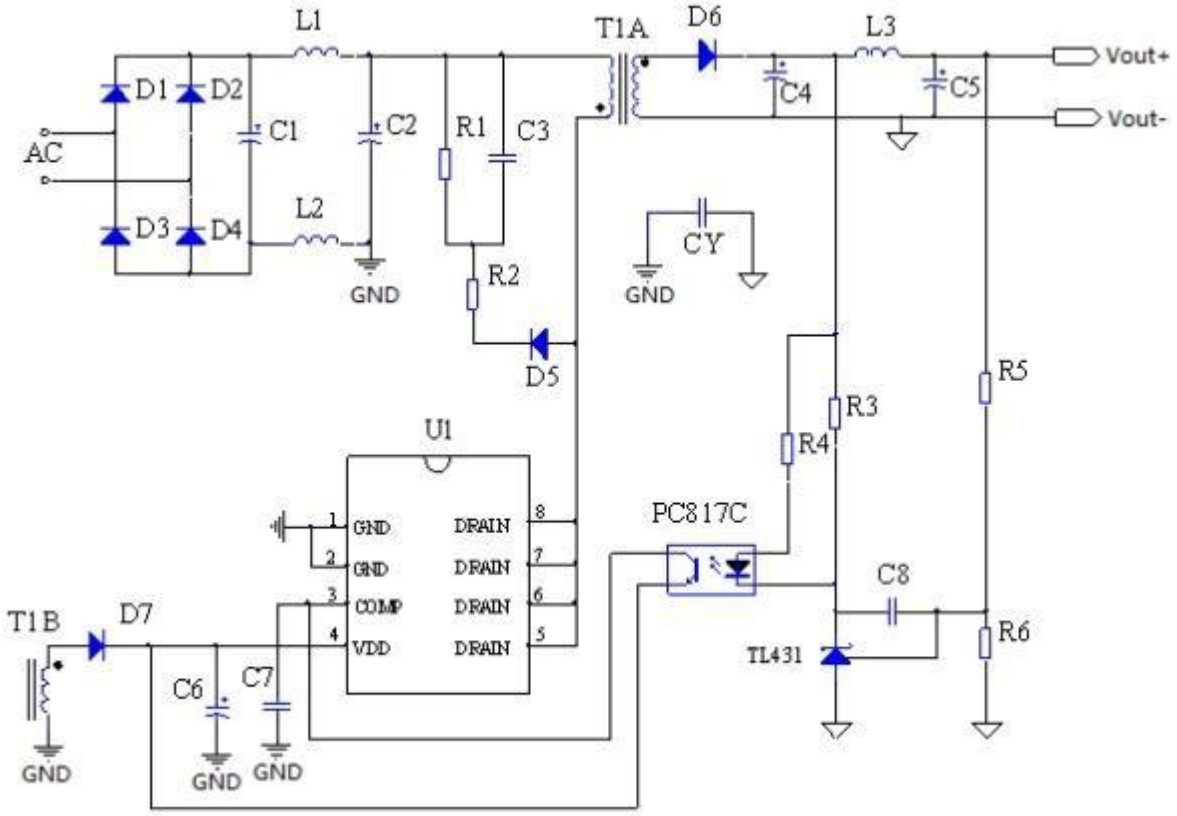
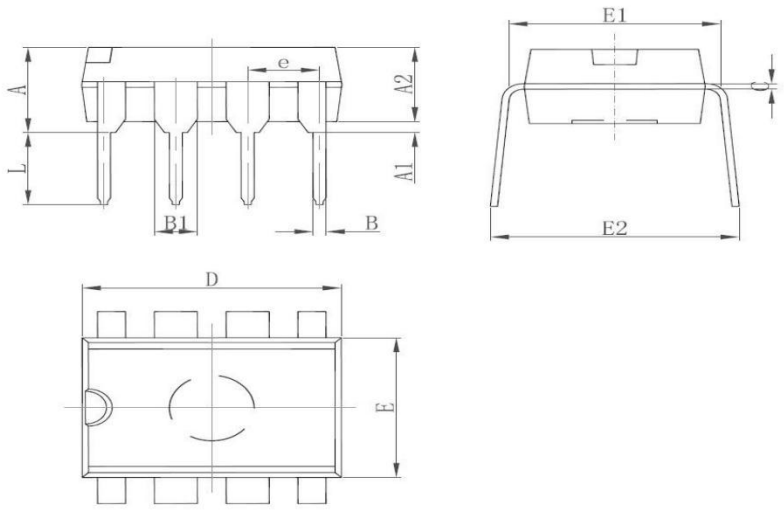


Figure.2 typical application diagram

OUTLINE DRAWING

DIP8



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	3.710	4.310	0.146	0.170
A1	0.510		0.020	
A2	3.200	3.600	0.126	0.142
B	0.380	0.570	0.015	0.022
B1	1.524(BSC)		0.060(BSC)	
C	0.204	0.360	0.008	0.014
D	9.000	9.400	0.354	0.370
E	6.200	6.600	0.244	0.260
E1	7.320	7.920	0.288	0.312
e	2.540(BSC)		0.100(BSC)	
L	3.000	3.600	0.118	0.142
E2	7.620	9.000	0.300	0.354

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