

High performance Off-line PWM Switching Power Controller—CSC7224

DESCRIPTION

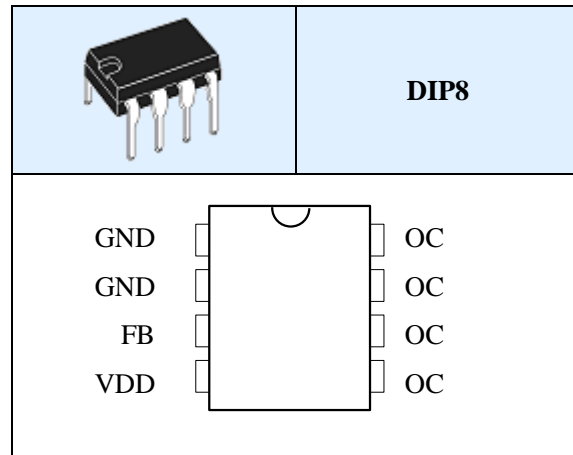
The CSC7224 is a high performance current mode Pulse Width Modulated (PWM) switching power converter, which meets the Green Environmental standards. It is widely used in economical switching power supply, such as Set-top Box, DVD, printer and LCD display, etc.

Available in DIP-8 Package.

FEATURES

- Very low external component required.
- Built-in 700V BJT.
- Built-in self-powered, without auxilliary winding.
- Output power 18W in input voltage 85V~265Vac .
- Built-in OVP, OCP, OTP.
- Frequency shuttling for EMI.
- No-load Power Consumption < 0.3W and When VIN = 220VAC, Power Consumption < 0.2W.

PIN CONFIGURATION




TYPICAL APPLICATION

- Power AC/DC adapters
- DVD/VCD/VCR power supply
- STB power supply
- Battery charger

PIN DESCRIPTION

PIN	SYMBOL	DESCRIPTION	PIN	SYMBOL	DESCRIPTION
1	GND	Ground	5	OC	The collector of internal power BJT
2			6		
3	COMP	Output Feedback	7		
4	VDD	Power Supply	8		

ORDERING INFORMATION

DEVICE	PACKAGE	MARKING	PACKING	
CSC7224	DIP8		Tube	20K/Small Box

BLOCK DIAGRAM

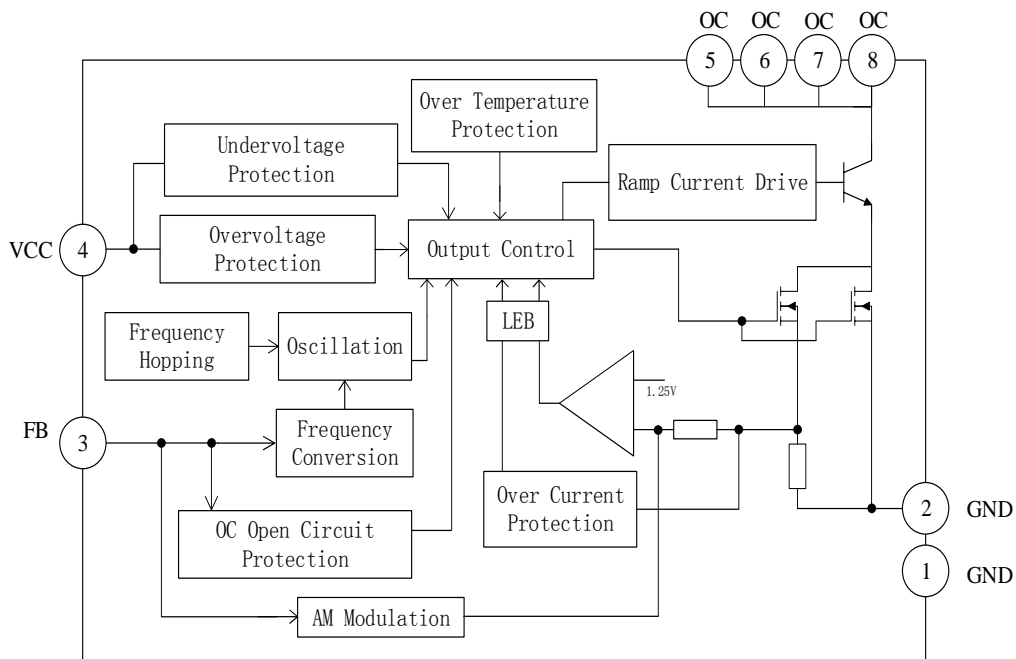


Figure.1 Functional block diagram of CSC7224

ABSOLUTE MAXIMUM RATINGS (TA=25°C)

PARAMETER	SYMBOL	VALUE	UNIT
VCC Pin Voltage	V_{cc}	-0.3~8.0	V
FB terminal voltage	V_{FB}	-0.3~8.0	V
OC terminal voltage	V_{OC}	-0.3~700	V
PN junction to ambient thermal resistance	θ_{JA}	85	°C/W
Operating Temperature	T_J	0 ~150	°C
Storage Temperature	T_{STG}	-55~150	°C
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°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
VCC Voltage Section						
Working Power Supply	V _{CC}	—	4	4.7	5.5	V
Start Threshold Voltage	V _{CC_ON}	—	4.6	4.9	5.2	V
Resart Volage	V _{CC_OFF}	—	3.2	3.5	3.8	V
Protect Voltage of VCC	V _{CC_OVP}	—	5.6	5.9	6.2	V
VCC charging current	I _{HV}	V _{ac} =85V~265V	0.4	0.7	1.3	mA
Starting Current	I _{START}	V _{CC} = V _{CC_ON} -1V	—	95	—	μA
Working Current	I _{CC}	V _{CC} = 5V V _{FB} =2.2V	—	30	45	mA
OSCILLATOR Section						
Frequency	f _{OSC}	V _{cc} =5V FB=1.5~2.5V	52	62	72	kHz
Current detection Section						
Output Limiting Current	I _S	—	1150	1350	1550	mA
FB Sense Section						
Threshold Voltage of Short Circuit Protection	V _{FB_SP}	—	1.15	1.33	1.50	V
Threshold Voltage of Frequency Conversion	V _{FB_PFM}	—	2.3	2.5	2.7	V
Threshold Voltage of Standby	V _{FB_START}	—	2.6	2.8	3.0	V
PWM Sense Section						
Maximum of Duty Cycle	D _{MAX}	—	—	—	70	%
Minimum of Duty Cycle	D _{MIN}	—	5	—	—	%
Leading Edge Blanking Time	T _{LEB}	—	—	300	—	nS
Minimum Opening Time	T _{onmin}	—	—	800	—	nS
Temperature protection Sense Section						
Thermal protection temperature	T _{SD}	—	—	140	—	°C
Power BJT Section						
Saturation Voltage of CE	V _{CE_SAT}	I _C =1A,I _B =0.25A	—	0.25	0.8	V
The Voltage of CB	V _{CBO}	I _C =0.1mA	700	—	—	V
The DC Current of Collector	I _{CE}	—	1.8	—	—	A

APPLICATION CIRCUIT

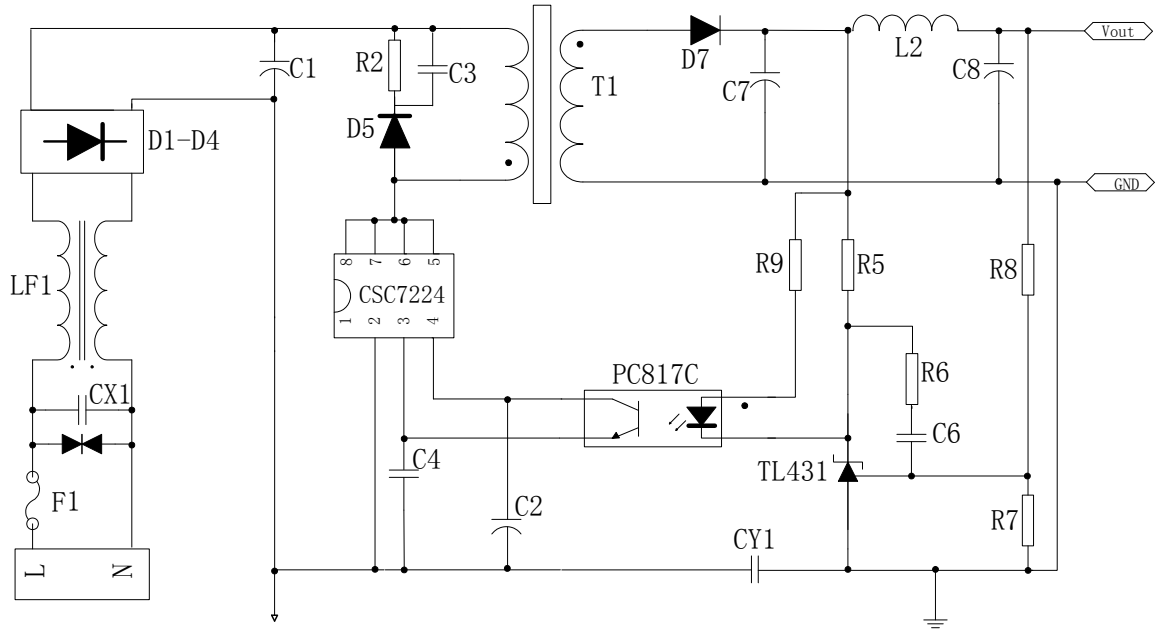
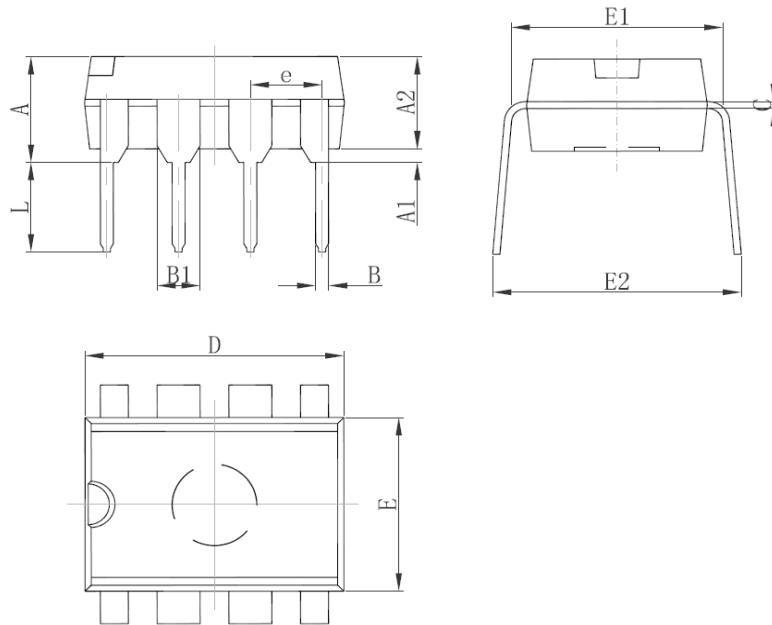


Figure.2 typical application diagram

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