

## High performance Off-line PWM Switching Power Controller—CSC7225

### DESCRIPTION

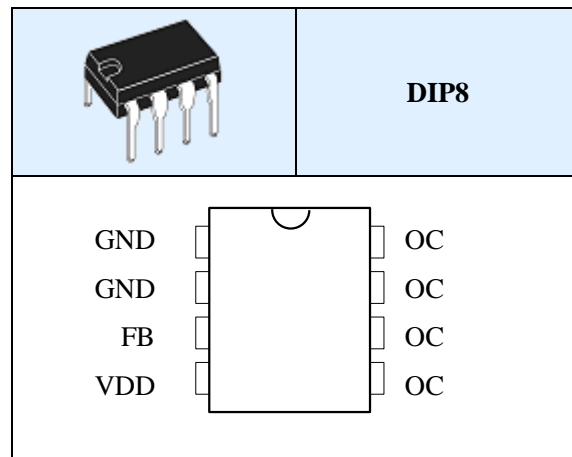
The CSC7225 is a high performance current mode Pulse Width Modulated (PWM) switching power converter, which meets the Green Environmental standards. It is widely used in economical switching power supply, such as Set-top Box, DVD, printer and LCD display, etc.

Available in DIP-8 Package.

### FEATURES

- Very low external component required.
- Built-in 700V BJT.
- Built-in self-powered, without auxilliary winding.
- Output power 24W 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	
CSC7225	DIP8		Tube	20K/Small Box

**BLOCK DIAGRAM**

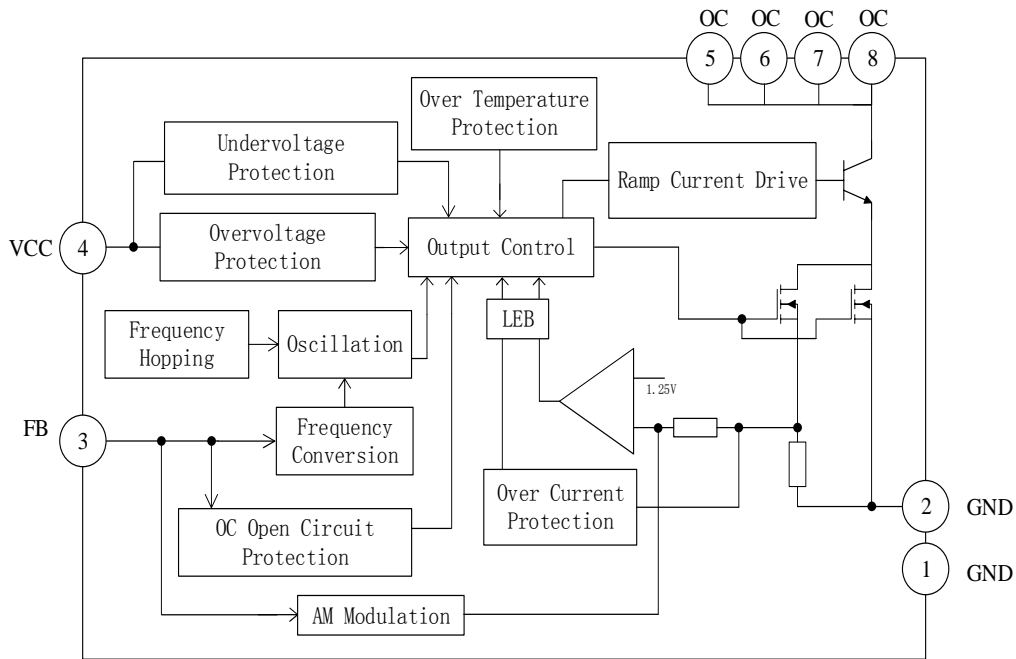


Figure.1 Functional block diagram of CSC7225

**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	$\theta_{JA}$	80	°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
<b>VCC Voltage Section</b>						
Working Power Supply	V <sub>CC</sub>	—	4	4.7	5.5	V
Start Threshold Voltage	V <sub>CC_ON</sub>	—	4.6	4.9	5.2	V
Resart Volage	V <sub>CC_OFF</sub>	—	3.2	3.5	3.8	V
Protect Voltage of VCC	V <sub>CC_OVP</sub>	—	5.6	5.9	6.2	V
VCC charging current	I <sub>HV</sub>	V <sub>ac</sub> =85V~265V	0.4	0.7	1.3	mA
Starting Current	I <sub>START</sub>	V <sub>CC</sub> = V <sub>CC_ON</sub> -1V	—	95	—	μA
Working Current	I <sub>CC</sub>	V <sub>CC</sub> = 5V V <sub>FB</sub> =2.2V	—	30	45	mA
<b>OSCILLATOR Section</b>						
Frequency	f <sub>OSC</sub>	V <sub>cc</sub> =5V FB=1.5~2.5V	52	62	72	kHz
<b>Current detection Section</b>						
Output Limiting Current	I <sub>S</sub>	—	1150	1350	1550	mA
<b>FB Sense Section</b>						
Threshold Voltage of Short Circuit Protection	V <sub>FB_SP</sub>	—	1.15	1.33	1.50	V
Threshold Voltage of Frequency Conversion	V <sub>FB_PFM</sub>	—	2.3	2.5	2.7	V
Threshold Voltage of Standby	V <sub>FB_START</sub>	—	2.6	2.8	3.0	V
<b>PWM Sense Section</b>						
Maximum of Duty Cycle	D <sub>MAX</sub>	—	—	—	70	%
Minimum of Duty Cycle	D <sub>MIN</sub>	—	5	—	—	%
Leading Edge Blanking Time	T <sub>LEB</sub>	—	—	300	—	nS
Minimum Opening Time	T <sub>onmin</sub>	—	—	800	—	nS
<b>Temperature protection Sense Section</b>						
Thermal protection temperature	T <sub>SD</sub>	—	—	140	—	°C
<b>Power BJT Section</b>						
Saturation Voltage of CE	V <sub>CE_SAT</sub>	I <sub>C</sub> =2A,I <sub>B</sub> =0.5A	—	0.3	1.0	V
The Voltage of CB	V <sub>CBO</sub>	I <sub>C</sub> =0.1mA	700	—	—	V
The DC Current of Collector	I <sub>CE</sub>	—	2.5	—	—	A

**APPLICATION CIRCUIT**

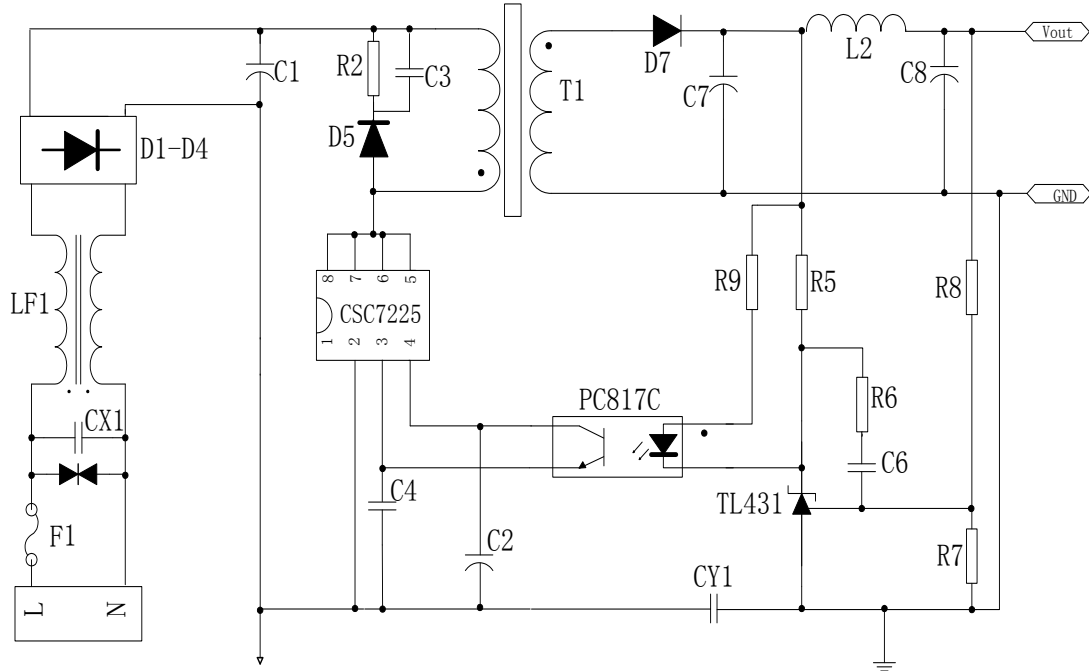
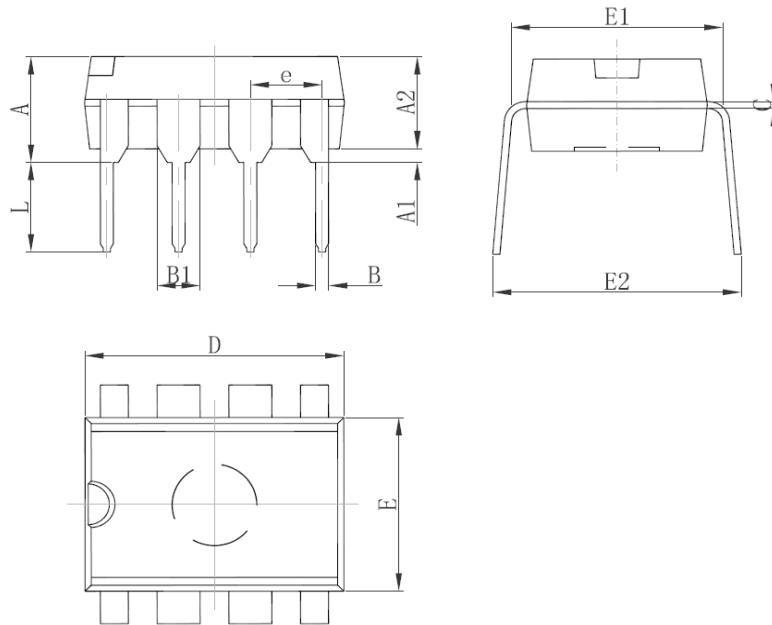


Figure.2 typical application diagram

**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