



REACTOR
Microelectronics

RM6203 Application Information --12V_1A Adapter

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技术支持部
2010.12



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OUTLINE

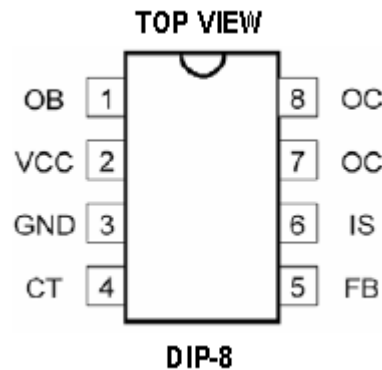
1. RM6203 Introduction
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一、RM6203 Description

The RM6203 is a kind of progressive overload and saturation current to prevent the function of switching power supply. It provides continuous output power up to 12W in the broad voltage range of 85V – 265V. Its optimized and highly reasonable circuit design has made it possible to minimize the total cost of the product. This power supply controller could be used in typical flyback circuit topology to constitute simple AC/DC converter. The internal initiating circuit of 6203 has been designed with a unique means of current sink to complete the startup using the amplifying function of the power switch tube. This will significantly reduce the power consumption of the start-up resistor; and when the output power becomes smaller, 6203 will automatically lower its operating frequency to enable very low standby power consumption.



PIN connection (top view)



Pin	Symbol	Function Description
1	OB	Base Pin of the Power Tube.(Enabling current input and connect to initiating resistance)
2	VCC	Power Supply Pin
3	GND	Ground Pin
4	CT	Oscillation Capacitance Pin.(Connect to timing capacitance)
5	FB	Feedback Pin
6	IS	Current Inspection Pin
7、8	OC	Output Pin(Connect to switching transformer)



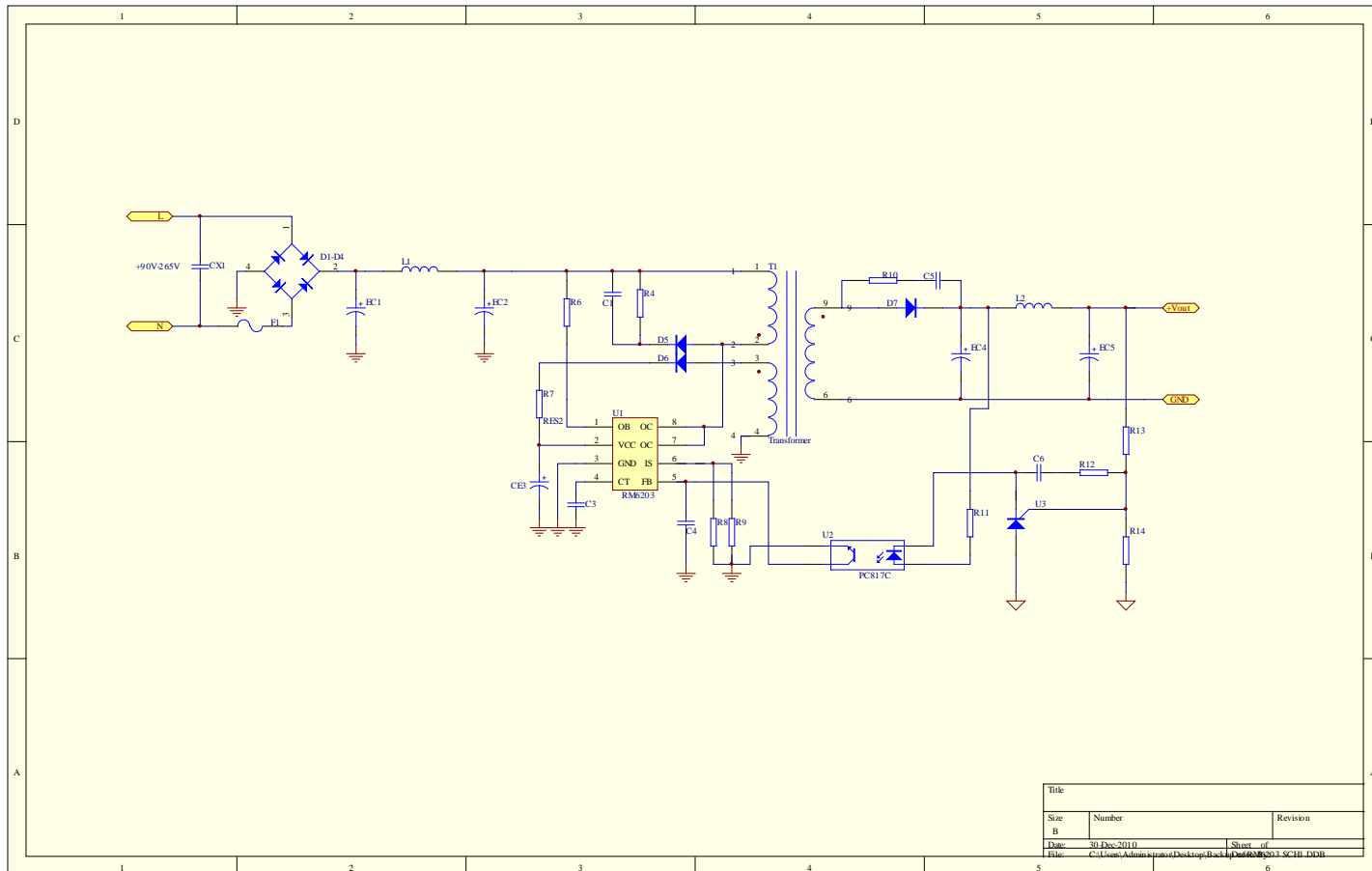
二、Electronical Characteristic Description

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Max. Withstanding Voltage of the Switching Tube		IOC=10mA	800			V
Reference Output Voltage	VREF	Io=1.0mA	2.4	2.5	2.6	V
Line Regulation		Vcc=5.5-9V		2	20	mV
Load Regulation		Io=0.1-1.2mA			3	%
Oscillating Frequency	F _{OSC}	Ct=680PF	56	61	67	KHz
Current Sampling Threshold	V _{CS}		0.55	0.60	0.65	V
Static Current	I _Q	Vcc=8V	2.8	3.0	3.2	mA
Start-up voltage			8.6	8.8	9.0	V
Oscillator Turn-off Voltage			4.4	4.6	4.8	V
Over-Voltage Limiting Threshold			9.5	10	10.5	V



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三、Application circuit





四、BOM LIST

P/N	Description	NO.	Package	Supplier
CX1	0.1uF 275V	1	DIP	
EC1EC2	10uF 400V	2	DIP	
EC3	47uF 25V	1	DIP	
EC4EC5	470uF 16V	2	DIP	
C1	102 2KV	1	DIP	
CY1	222 1KV	1	DIP	
C3	681 10V 0805	1	SMD	
C4	103 10V 0805	1	SMD	
C5	102 1KV 0805	1	SMD	
C6	104 16V 0805	1	SMD	
R4	100K 5% 0805	1	SMD	
R6	7.5R 1% 1/4W	1	DIP	
R7	0.6R 5% 0805	1	SMD	
R8、R9	2R 5% 0805	2	SMD	
R10	10R 5% 0805	1	SMD	
R11	0.5K 5% 0805	1	SMD	
R12	1K 5% 0805	1	SMD	
R13	3.9K 5% 0805	1	SMD	
R14	1K 5% 0805	1	SMD	
D1-D4	IN4007	4	DIP	
D5、D6	FR107	2	DIP	KED&bufan
D7	SR360	1	DIP	
L1	1mH	1	DIP	
L2	4.7uH 2A	1	DIP	
F1	1A 250V	1	DIP	
T1	transformer	1	DIP	
U1	RM6203	1	DIP	reactor
U2	PC817	1	DIP	
U3	TL431	1	DIP	



五、Transformer

RM6203(12V_1A)变压器参数

The diagram shows a transformer with a vertical core. The primary winding on the left has 5 turns, with pins 1, 2, 3, 4, and 5. The secondary winding on the right has 10 turns, with pins 10 and 6. The windings are separated by three layers of insulation tape.

三层绝缘胶带
Pin2 to pin1 55T 0.15mm双跟并绕
三层绝缘胶带
Pin4 to pin5 10T 0.3mm
三层绝缘胶带
Pin10 to pin6 16T 0.35mm
三层绝缘胶带
Pin3 to pin2 55T 0.15mm双跟并绕

Core:PC40EE19立式 $L_p \cong 1.3\text{mH}$



六、 Test Report-Test Condition and Test SPEC.

Description	MIN	TPY	MAX	Test Data	Result
Input					
Voltage Frequency	90V 50hz		265V 50hz		
Output					
Voltage	11.4V	12V	12.6V		PASS
OCP	1.5A		1.8A		PASS
Load regulation	-5%		5%		PASS
Power	11.4W	12W	12.6W	12.1 W	PASS
Efficiency					
Energy Star(5)				81.5%	PASS

Test Data



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Line Regulation

Test Condition: $V_{in}=110V-265V$, $I_{load}=0A$

$V_{in}(V)$	110	185	220	235	265
$V_{out}(V)$	12.1	12.1	12.1	12.1	12.1

Test Condition: $V_{in}=110V-265V$, $I_{load}=1A$

$V_{in}(V)$	110	185	220	235	265
$V_{out}(V)$	12.1	12.1	12.1	12.1	12.1

OCP

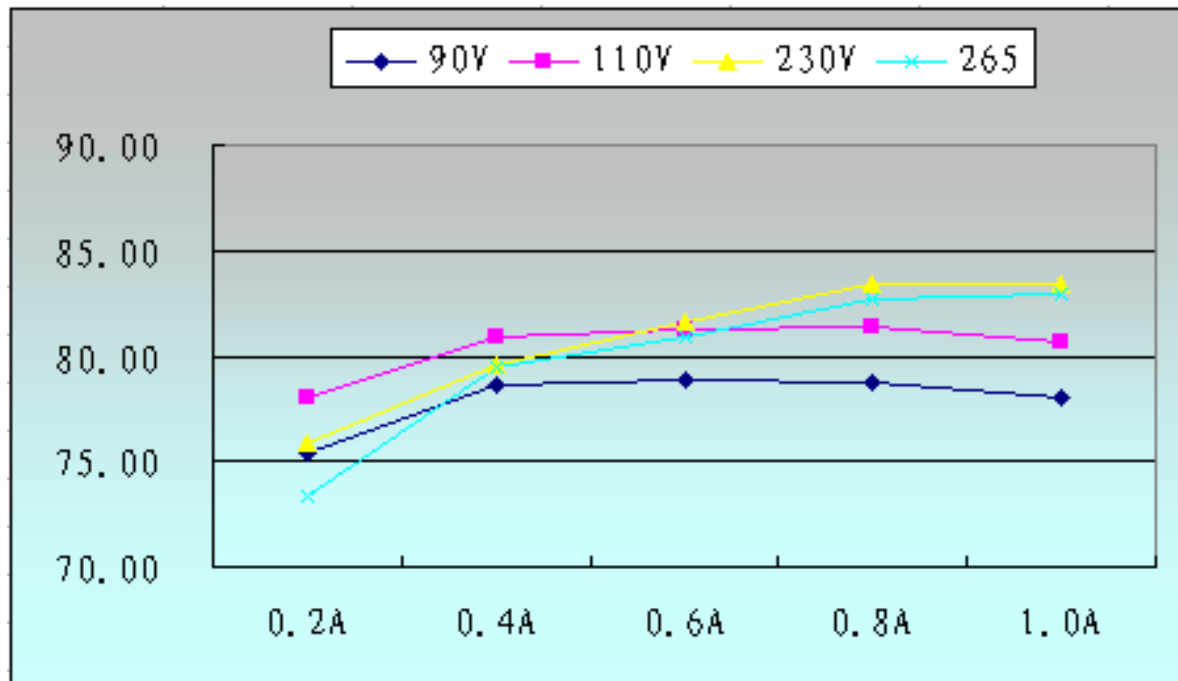
$V_{in}(V)$	90	115	185	220
OCP (A)	1.5	1.5	1.8	1.8
Result	PASS	PASS	PASS	PASS

Notice: $I_{ocp}=(1.3-1.8) I_{out(max)}$;



Test Data

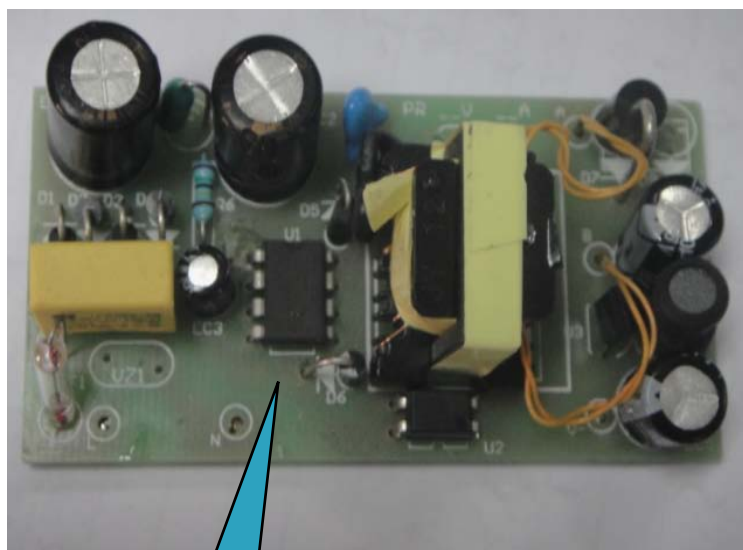
Efficiency



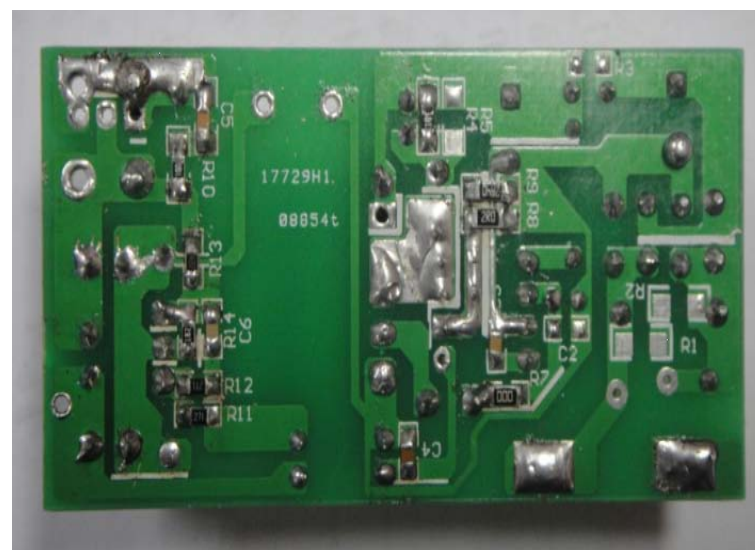


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DEMO Photo



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THE END