



REACTOR
Microelectronics

RM6203 Application Information

--5V2A

陝西亞成微電子有限公司
技術支持部

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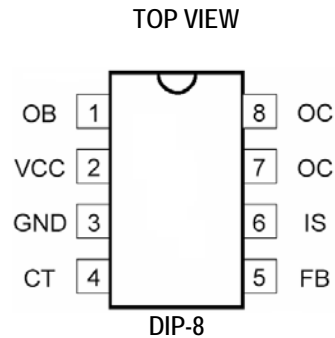


一、 RM6203 Description

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		Base Pin of the BJT.(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 capacitor)
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 BJT		$I_{oc}=10\text{mA}$	800			V
Line Regulation		$V_{cc}=5.5-9\text{V}$		2	20	mV
Load Regulation		$I_o=0.1-1.2\text{mA}$			3	%
Oscillating Frequency	F_{osc}	$C_t=680\text{PF}$	55	61	67	KHz
Static Current	I_q	$V_{cc}=8\text{V}$	3	3.2	3.4	mA
Start-up voltage			8.6	8.8	9	V
Oscillator Turn-off Voltage			4.4	4.6	4.8	V



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四、BOM LIST

P/N	Description	NO.	Package	Supplier
F1	250V 1A	1	DIP	
CX1	0.1uF 275V	1	DIP	
EC1、EC2	10uF 400V	2	DIP	
EC3	47uF 25V	1	DIP	
EC4、EC5	470uF 16V	2	DIP	
C1	1nF 1kv	1	DIP	
C3	680pF 0805	1	SMD	
C4	100nF 0805	1	SMD	
C5	1nF 0805	1	SMD	
C6	100nF 0805	1	SMD	
D1-D4	1N4007	4	DIP	
D5、D6	FR107	2	DIP	
D7、D8	SR360	2	DIP	
R4	100K 5% 0805	1	SMD	
R6	7.5M 5% 1/4W	1	DIP	
R7	0R 5% 0805	1	SMD	
R8	2.0R 1% 1206	1	SMD	
R9	2.4R 1% 1206	1	SMD	
R10	10R 5% 0805	1	SMD	
R11	110R 5% 0805	1	SMD	
R12	1.5K 5% 0805	1	SMD	
R13	1k 5% 0805	1	SMD	
R14	0.9K 5% 0805	1	SMD	
L1	色环电感1mH	1	DIP	
L2	10uH 3A	1	DIP	
T1	Transformer	1	DIP	
U1	RM6203	1	DIP	Reactor
U2	PC817	1	DIP	
U3	TL431	1	DIP	

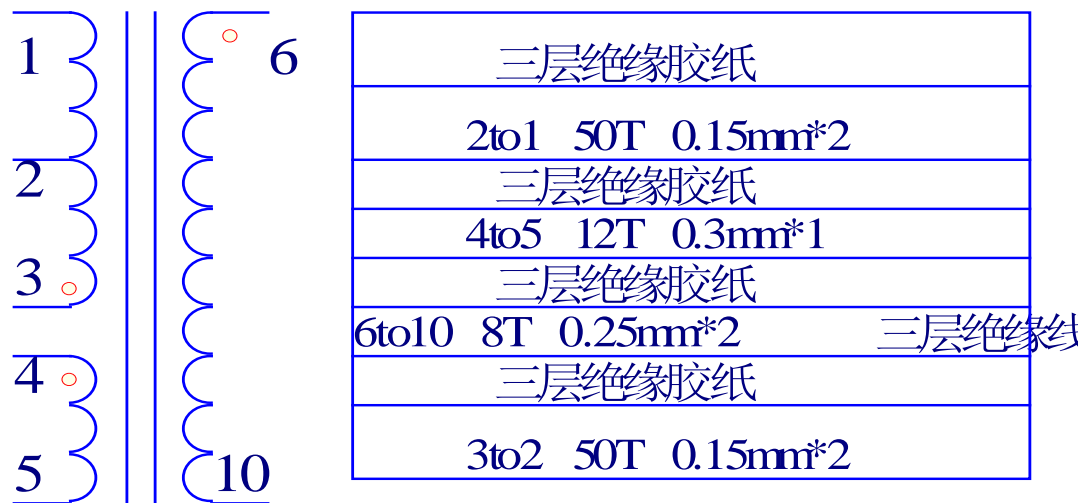
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五、Transformer

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RM6203 5V2A Transformer



core: PCEE19 立式, $L_p=1.3\text{mH}$;

六、 Test Report-Test Condition and Test SPEC.



Description	MIN	TPY	MAX	Test Data	Result
Input					
Voltage Frequency	90V 50hz		265V 60hz	90V-265V	PASS
Output					
Voltage	4.75V	5V	5.25V		PASS
OCP	2.6A		3.6A	2.7A-3.2A	PASS
Load regulation	-5%		5%	1.4%	PASS
Power		10W		10.06W	PASS
Efficiency					
Energy Star(5)				71.35%(avg.)	PASS



Test Data

Line Regulation

Test Condition: Vin=90V-265V, Iload=0A↵

Vin(V)↵	90↵	115↵	185↵	220↵	235↵	265↵
Vout (V)↵	5.09↵	5.09↵	5.09↵	5.09↵	5.09↵	5.09↵

Line regulation: $\leq 0.5\%$; LG (MAX): 2%; Result: PASS;

Test Condition: Vin=85V-265V, Iload=Iout(max)↵

Vin(V)↵	90↵	115↵	185↵	220↵	235↵	265↵
Vout (V)↵	5.03↵	5.03↵	5.03↵	5.03↵	5.03↵	5.03↵

Line regulation: $\leq 0.5\%$; LG (MAX): 2%; Result: PASS;

OCP

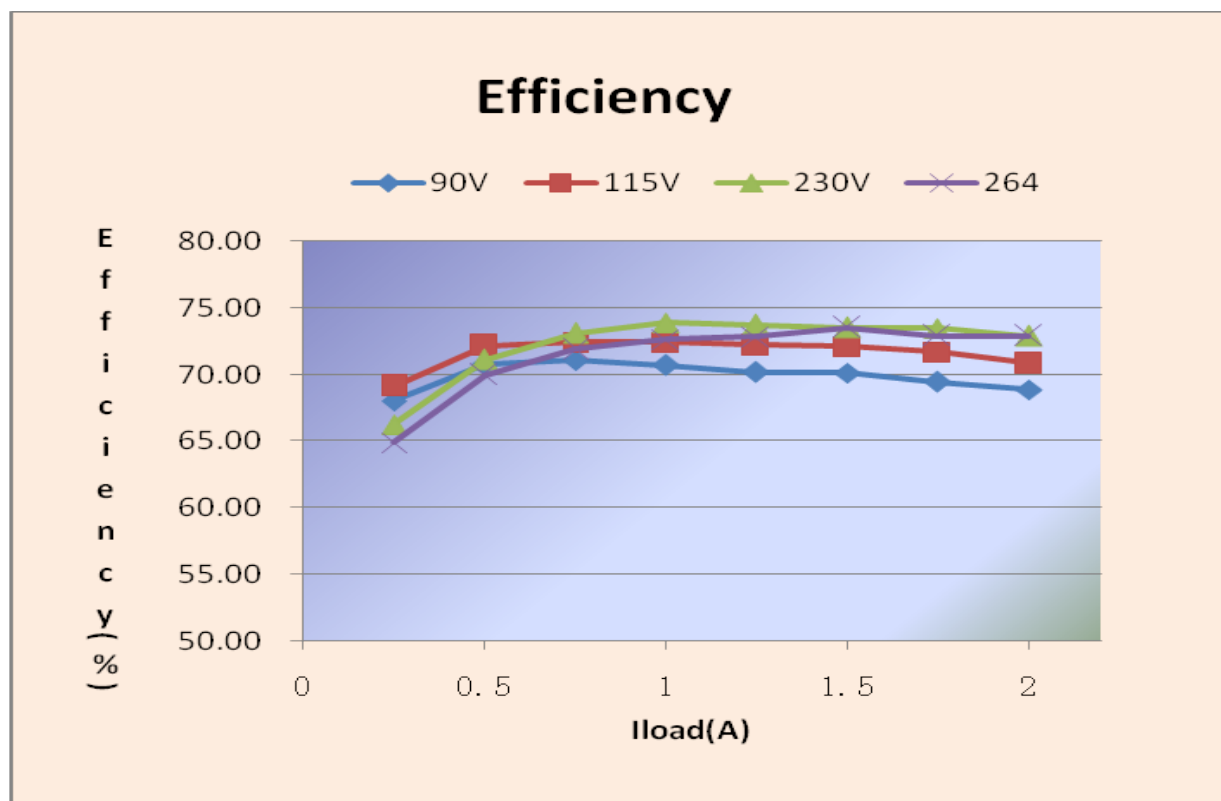
Vin(V)↵	90↵	115↵	185↵	220↵	265↵
OCP(A)↵	2.7↵	2.8↵	3.1↵	3.1↵	3.2↵
Result↵	PASS↵	PASS↵	PASS↵	PASS↵	PASS↵

Notice: Iocp=(1.3-1.8) Iout (max) ;↵



Test Data

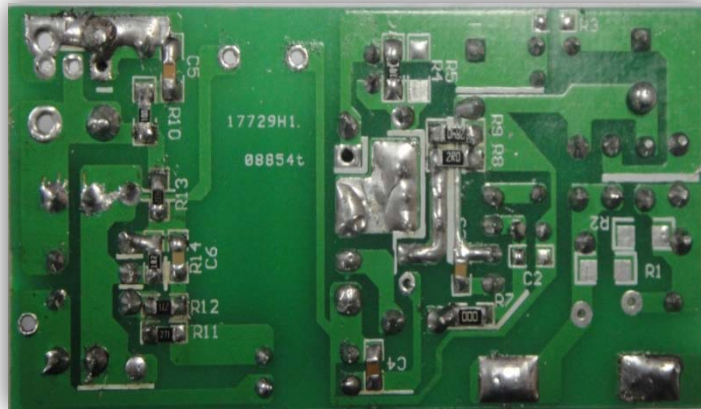
Efficiency





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DEMO Photo



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THE END