

RM6203 Application Information

-10x1W LED Driver

陕西亚成微电子有限责任公司
技术支持部
2010.12

OUTLINE



1. RM6203 Introduction
2. Electronical Characteristic Description
3. Application Circuit
4. BOM List
5. Transformer Parameter
6. Test Report

—、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 fly back 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 switching 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.

二、Electronical characteristic Description



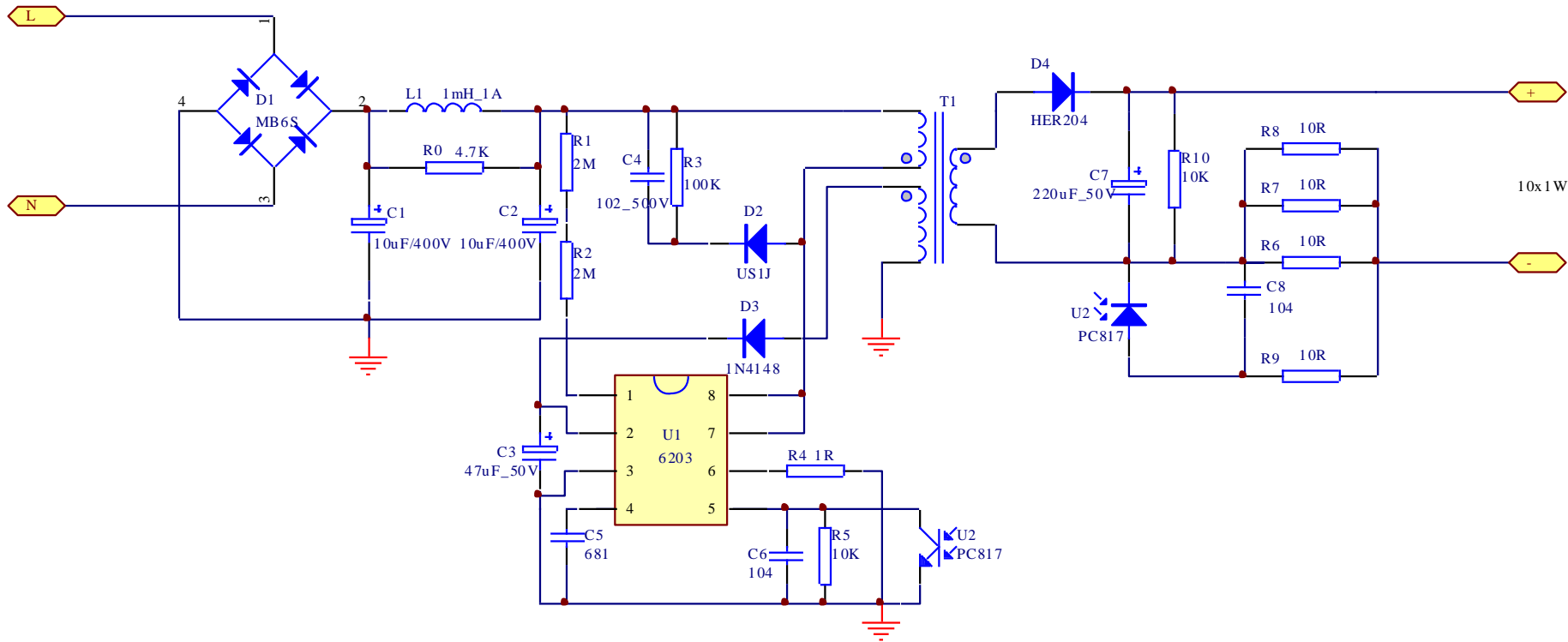
REACTOR
Microelectronics

Parameter	Symbol	Conditions	Min	Typ	Max	Units
Max. Withstanding Voltage of the Switching Tube		$I_{OC}=10\text{mA}$	800			V
Reference Output Voltage	V_{REF}	$I_o=1.0\text{mA}$	2.4	2.5	2.6	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}	$C_t=680\text{PF}$	56	61	67	KHz
Current Sampling Threshold	V_{CS}		0.55	0.60	0.65	V
Static Current	I_Q	$V_{CC}=8\text{V}$	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

三、Application Circuit



REACTOR
Microelectronics



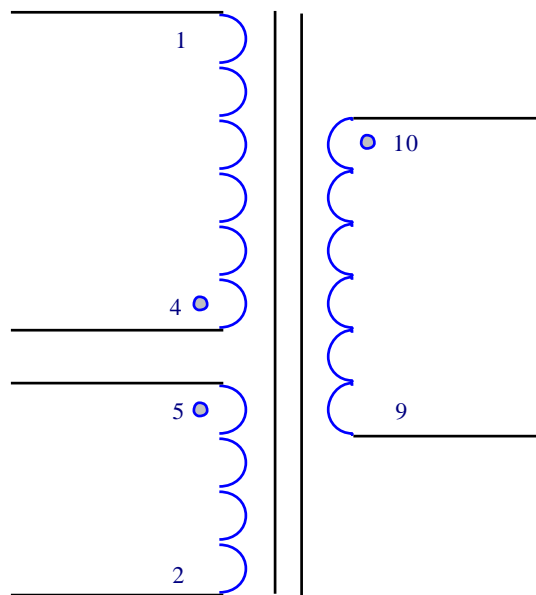


四、BOM LIST

P/N	Describe	NO	Package
C1, C2	10uF_X5R_400V	2	DIP
C3	47uF_X5R_25V	1	DIP
C4	102_X5R_1KV_0805	1	SMD
C5	681_X5R_50V_0805	1	SMD
C6, C8	104_X5R_50V_0805	2	SMD
C7	47uF_X5R_50V	1	DIP
D1	Z647	1	SMD
D2	ES1J	1	SMD
D3	1N4148	1	SMD
D4	HER204	1	DIP
L1	1mH	1	DIP
R0	4.7K_5%_0805	1	SMD
R1, R2	1.2M_5%_0805	2	SMD
R3	100K_5%_0805	1	SMD
R4	1R_1%_1206	1	SMD
R5, R10	10K_5%_0805	2	SMD
R6, R7, R8, R9	10R_1%_1206	4	SMD
R9	10R_1%_1206	1	SMD
U1	RM6203	1	SMD

五、Transformer

6203 (10X1W) 变压器线圈匝数(EE20)



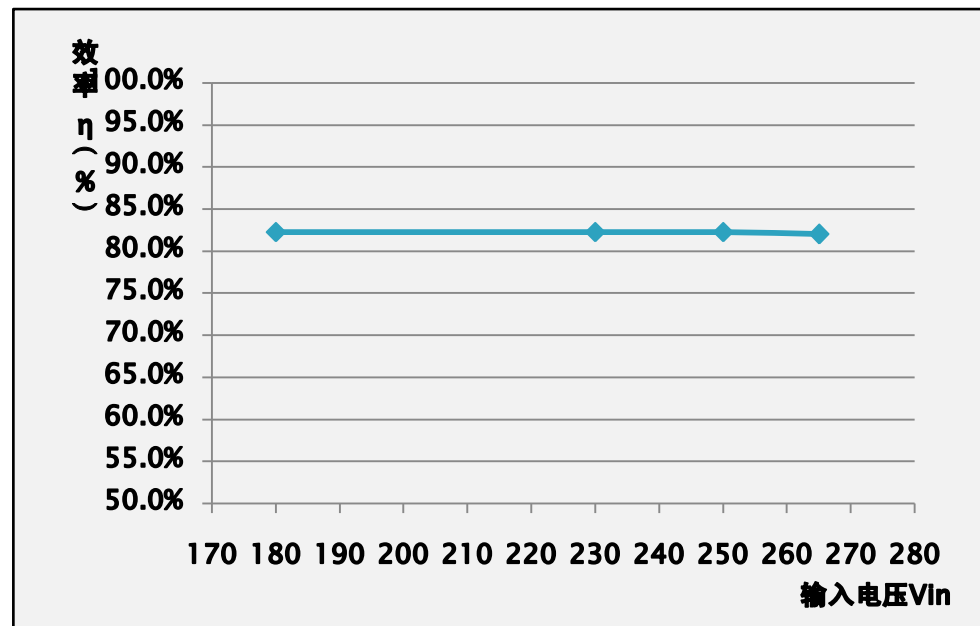
3层绝缘胶纸		
PIN5---PIN2	6T	0.21mm
3层绝缘胶纸		
PIN3---PIN1	45T	0.15mm*2
3层绝缘胶纸		
PIN10---PIN9	27T	0.35mm
3层绝缘胶纸		
PIN4---PIN3	45T	0.15mm*2
L:PIN1----PIN4		1.3mH

六、 Test Report-Test Condition and Test SPEC.

Description	MIN	TPY	MAX	Test Data	Result
Input					
Voltage	175V		265V	175V-265V	PASS
Frequency	60hz		60hz		
Power (Standby)			0.3W	0.28W	PASS
Output					
Voltage	32.8V		32.9V		PASS
Current	290mA		330mA	300mA	PASS
Power	9W		11W	9.87W	PASS
Efficiency					
Energy Star(5)				82.2%	PASS

Test Report-data

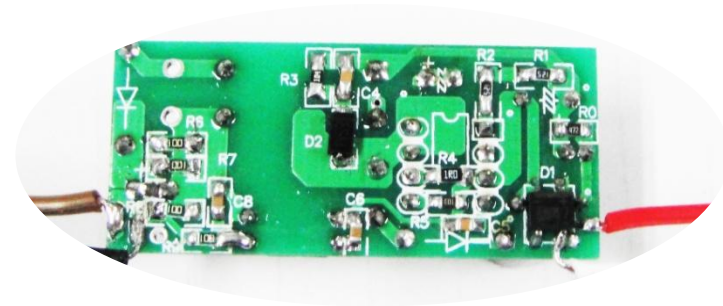
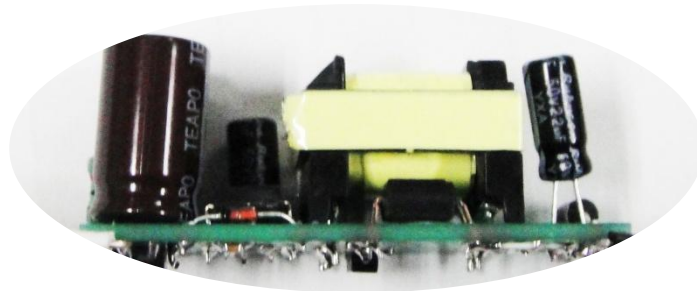
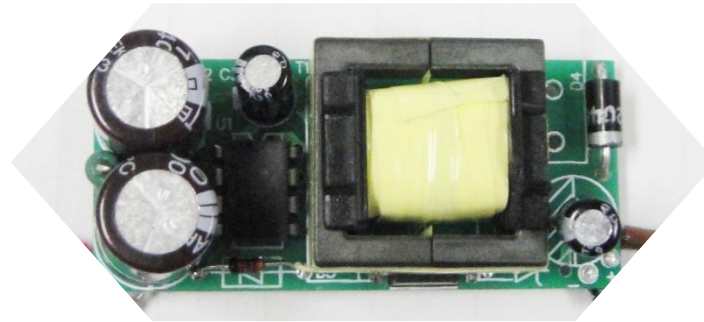
Efficiency	
Vin(v)	η (%)
180	82.3%
230	82.3%
250	82.3%
265	82.0%





REACTOR
Microelectronics

10W-LED Demo Board photo shows





REACTOR
Microelectronics

THE END