



RM3253 Application Information

--5V_500mA($\pm 5\%$)

陕西亚成微电子有限责任公司
技术支持部
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OUTLINE



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一、 RM3253 Description

The RM3253 switch Intergard Circuit cost effectively replace all power supplies, and up to 5W output power based on unregulated isolated linear transformer (50/60HZ). Unlike conventional PWM (pulse width modulation) controllers, they regulate the output voltage in a new method of off-time modulation control. The controller consists of a VCO (voltage control oscillator), Sense and logic circuit, VDD pin, under-voltage lockout circuit, protection for over-voltage, current limited circuit, leading edge blanking, over load protection and fault condition auto-restart. They are ideal low power AC/DC adapter/charger solution for portable devices, otherwise, its Built-in 800V high voltage BJT and minimal external componets.

Pin Connection (Top View)



Package	Function	Description
<p>SOP-8</p>	PIN 1: VDD	Power Supply
	PIN 2: NC	Not Connected
	PIN 3: Sense	Current sensor, it senses the voltage via a sensed resistor
	PIN 4: OE	Emmitter Pin of the power BJT switch.
	PIN 5、 6: OC	Output Pin(Connect to switching transformer)
	PIN 7、 8: GND	Ground



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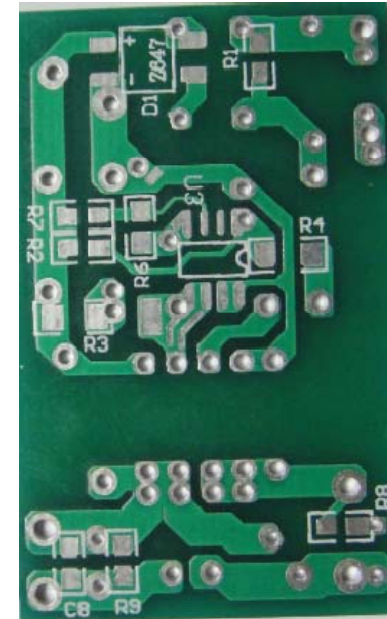
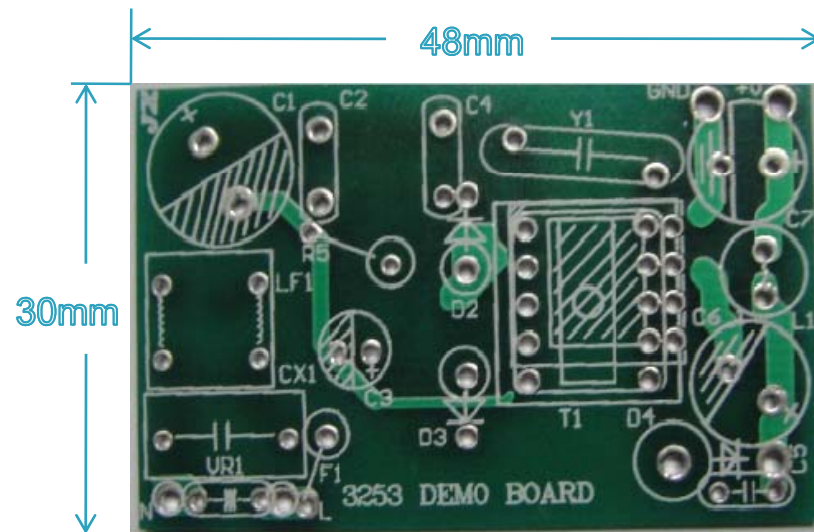
二、Electronical characteristic Description

Item	Conditions	MIN.	TYP.	MAX.	Unit
Supply Voltage					
Operation Voltage			21		V
Turn-on Threshold Voltage	VDD ON	11	12	13	V
Turn-off Threshold Voltage	VDD OFF	5.5	6	6.5	V
Over-voltage Thershold	Vovp		28	30	V
Oscillator					
Operation Frequency		45	50	55	KHZ
Current Sensing					
Leading Edge Blanking		250	300	350	nS
Current Sense Detection Voltage	VDD=15V	0.45	0.5	0.55	V

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四、BOM LIST

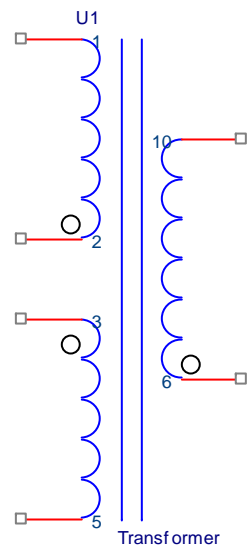
P/N	Description	NO.	Package	Supplier
CX1	0.1uF_275V	1	DIP	
C1	10uF_400V	1	DIP	
C3	1uF_50V	1	DIP	
C4、C5	1nF_1KV	2	DIP	
C6、C7	1000uF_10V	2	DIP	
R2	3.3M_5%_0805	1	SMD	
R3	165K_5%_0805	1	SMD	
R4	10R_5%_0805	1	SMD	
R5	1.5R_1%_1/2W	1	DIP	
R6	2.7K_5%_0805	1	SMD	
R7	7.5M_5%_0805	1	SMD	
R8	15R_5%_0805	1	SMD	
R9	221R_5%_0805	1	SMD	
D1	Z647	1	SMD	
D2、D3	FR107	2	DIP	
D4	SR360	1	DIP	
LF1	色环电感1mH	2	DIP	
L1	15uH_2A	1	DIP	
F1	1A_250V	1	DIP	
T1	transformer	1	DIP	
U1	RM3253	1	SMD	reactor

五、Transformer



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RM3253 5V_500mA变压器参数



三层绝缘胶纸
PIN3 to PIN5 44T 0.15mm
三层绝缘胶纸
PIN6 to PIN10 12T 0.27mm
三层绝缘胶纸
PIN2 to PIN1 180T 0.15mm

Core: PC40EE13; Lm=2.6mH +/-5%;

六、 Test Report-Test Condition and Test SPEC.

Description	MIN	TPY	MAX	Test Data	Result
Input					
Voltage Frequency	90V 50hz		265V 60hz	85V-265V	PASS
Output					
Voltage Current Load regulation Power	4.75V 500mA -5%	5V 2.5W	5.25V 5%	 3.2% 2.45W	PASS PASS PASS PASS
Efficiency					
Energy Star(5)				66.8%(avg.)	PASS

Test Data

Line Regulation

Test Condition: Vin=110V-265V, Iload=1/2Iout(max) ↵

Vin(V) ↵	110↵	145↵	190↵	235↵	265↵
Vout(V) ↵	5.0↵	4.96↵	4.93↵	4.91↵	4.91↵

Line regulation: 1.8%; LG(SPEC.): ±3% Result: **PASS** ↵

Test Condition: Vin=110V-265V, Iload=Iout(max) ↵

Vin(V) ↵	110↵	145↵	190↵	235↵	265↵
Vout(V) ↵	4.98↵	4.92↵	4.89↵	4.86↵	4.86↵

Line regulation: 2.4%; Vout(MAX): ±3%; Result: **PASS** ↵

OCP

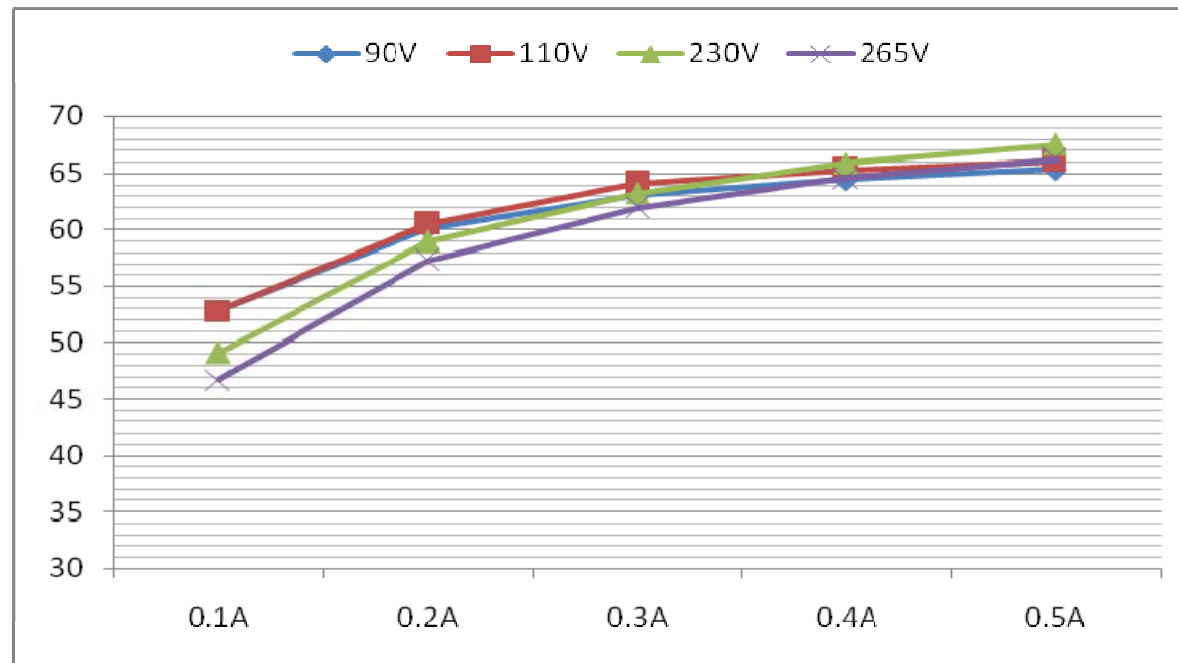
Vin(V) ↵	85V↵	110V↵	230V↵	265V↵
OCP(A) ↵	0.89↵	0.87↵	0.78↵	0.76↵
Result ↵	PASS ↵	PASS ↵	PASS ↵	PASS ↵

Test Date

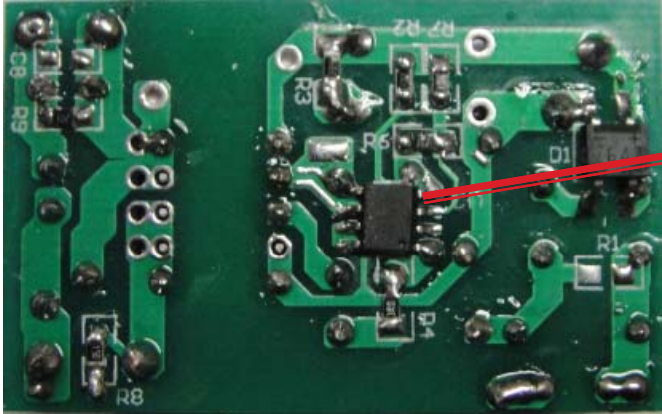
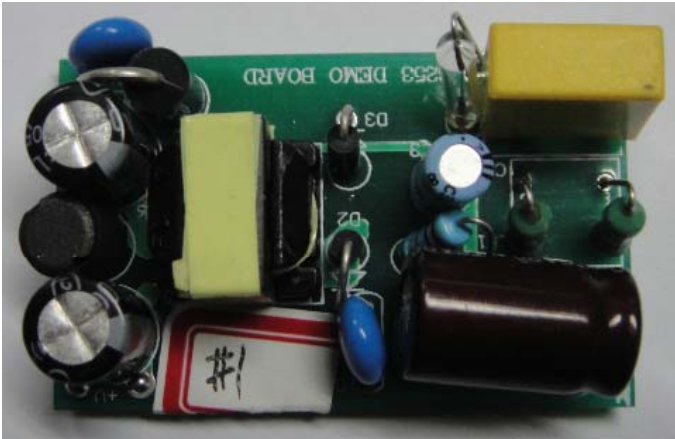


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Efficiency



Demo Photo



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THE END