



# RM3253 Application Information

## --5V\_700mA( $\pm 5\%$ )

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技术支持部  
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# OUTLINE



1. RM3253 Introduction
2. Electrical Characteristic Description
3. Application Circuit
4. BOM List
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6. Test Report



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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

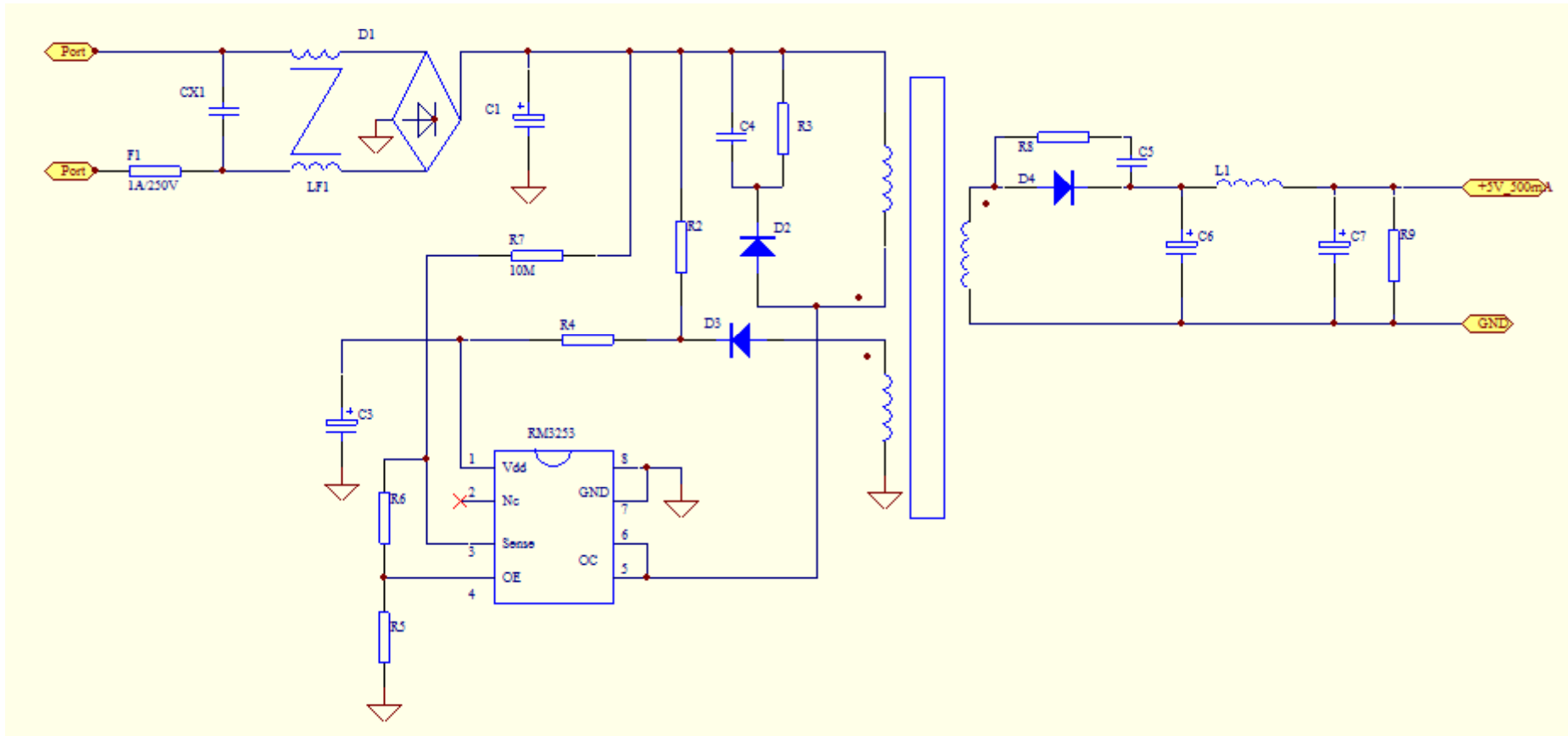


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## 二、Electronical characteristic Description

Item	Conditions	MIN.	TYP.	MAX.	Unit
<b>Supply Voltage</b>					
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
<b>Oscillator</b>					
Operation Frequency		45	50	55	KHZ
<b>Current Sensing</b>					
Leading Edge Blanking		250	300	350	nS
Current Sense Detection Voltage	VDD=15V	0.45	0.5	0.55	V

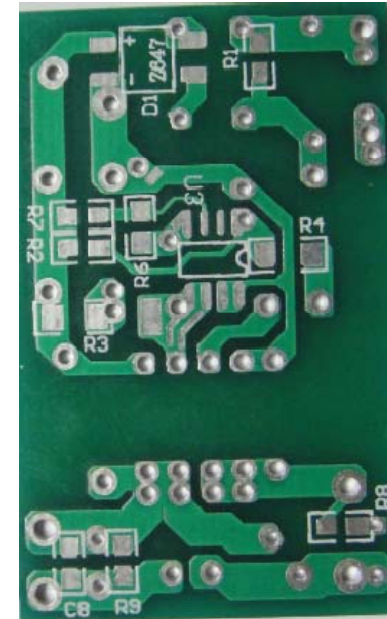
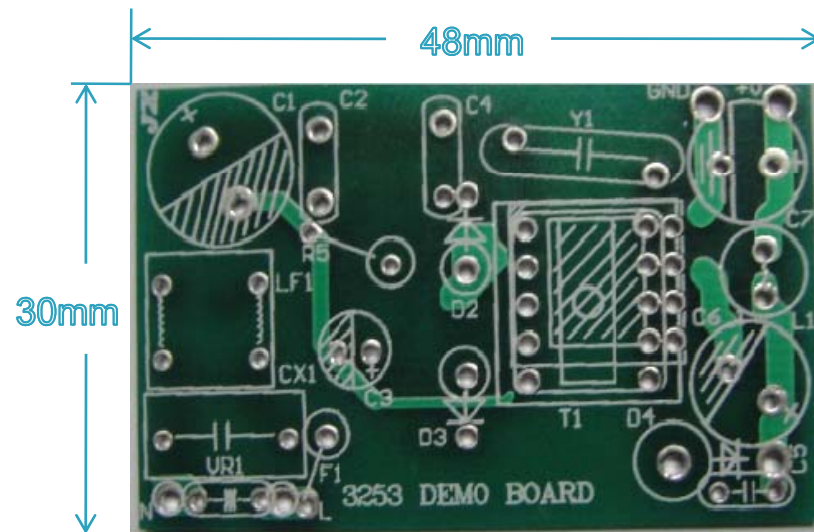
# ≡、Application Circuit



# PCB



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## 四、BOM LIST

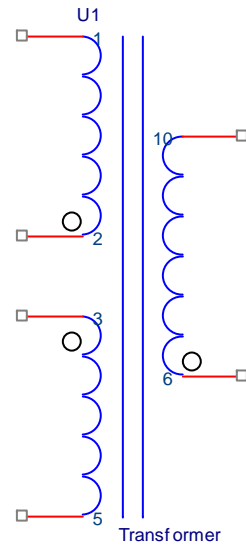
P/N	Description	NO.	Package	Supplier
CX1	0.1uF_275V	1	DIP	
C1	10uF_400V	1	DIP	
C3	1uF_50V	1	DIP	
C4、C5	1nF_1KV	2	DIP	
C6、C7	1000uF_10V	2	DIP	
R2	3.3M_5%_0805	1	SMD	
R3	200K_5%_0805	1	SMD	
R4	0R_5%_0805	1	SMD	
R5	1.3R_1%_1/2W	1	DIP	
R6	3.4K_5%_0805	1	SMD	
R7	10M_5%_0805	1	SMD	
R8	15R_5%_0805	1	SMD	
R9	270R_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	22uH_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\_700mA变压器参数



三层绝缘胶纸
PIN3 to PIN5 43T 0.15mm
三层绝缘胶纸
PIN6 to PIN10 12T 0.27mm
三层绝缘胶纸
PIN2 to PIN1 140T 0.15mm

Core: PC40EE13; Lm=3mH -/+5%;

## 六、 Test Report-Test Condition and Test SPEC.

Description	MIN	TPY	MAX	Test Data	Result
<b>Input</b>					
Voltage Frequency	90V 50hz		265V 60hz	85V-265V	PASS
<b>Output</b>					
Voltage Current Load regulation Power	4.85V 700mA -5%	5V  3.5W	5.15V  5%	3.3% 3.47W	PASS PASS PASS PASS
<b>Efficiency</b>					
Energy Star(5)				71%(avg.)	PASS

# Test Data

## Line Regulation

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

Vin(V) ↵	110↵	145↵	190↵	235↵	265↵
Vout(V) ↵	5.14↵	5.1↵	5.08↵	5.1↵	5.11↵

Line regulation: 1.2%; LG(SPEC.): ±3% Result: **PASS**;

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

Vin(V) ↵	110↵	145↵	190↵	235↵	265↵
Vout(V) ↵	5.14↵	5.09↵	5.06↵	5.08↵	5.09↵

Line regulation: 1.6%; Vout(MAX): ±3%; Result: **PASS**;

## OCP

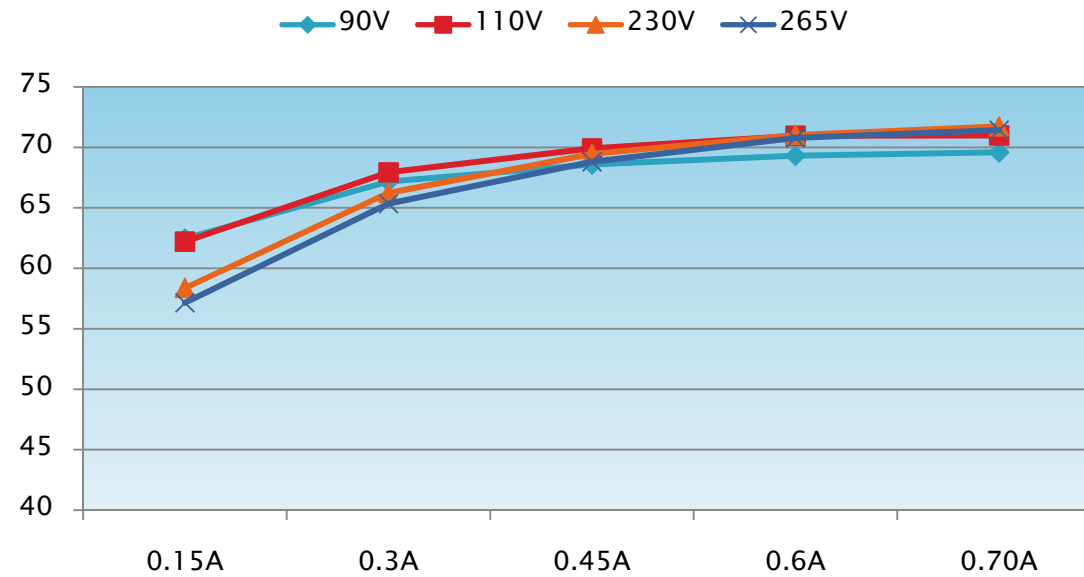
Vin(V) ↵	85V↵	110V↵	230V↵	265V↵
OCP(A) ↵	1.24↵	1.26↵	1.16↵	1.11↵
Result ↵	<b>PASS</b> ↵	<b>PASS</b> ↵	<b>PASS</b> ↵	<b>PASS</b> ↵

# Test Date

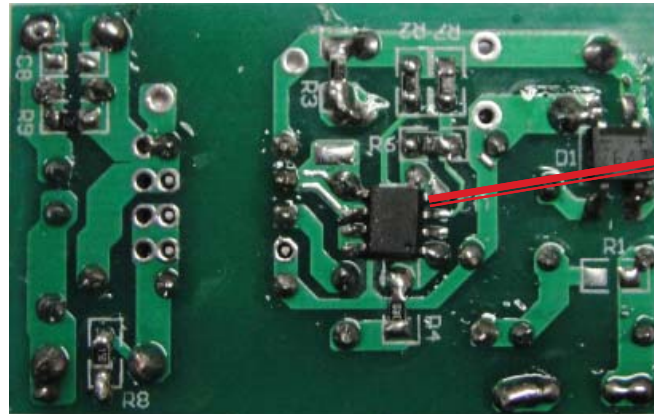
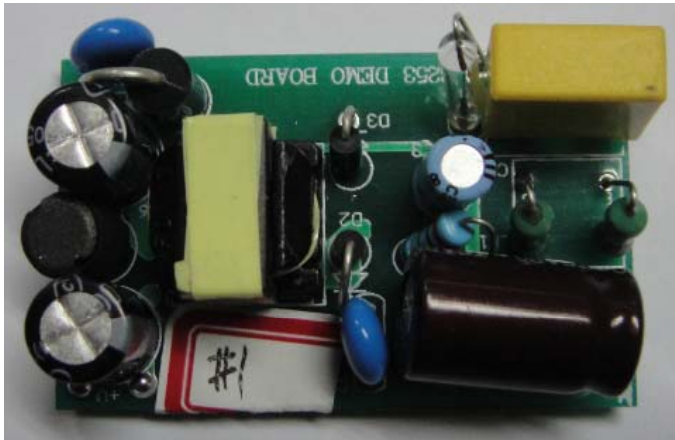


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## Efficiency



# Demo Photo



RM3253



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THE END