



REACTOR
Microelectronics

RM3253 Application Information

--5V500mA($\pm 3\%$)

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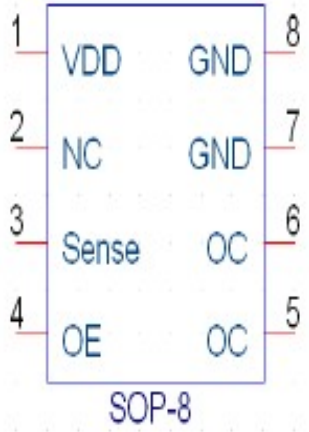


一、RM3253 Description

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 components .



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

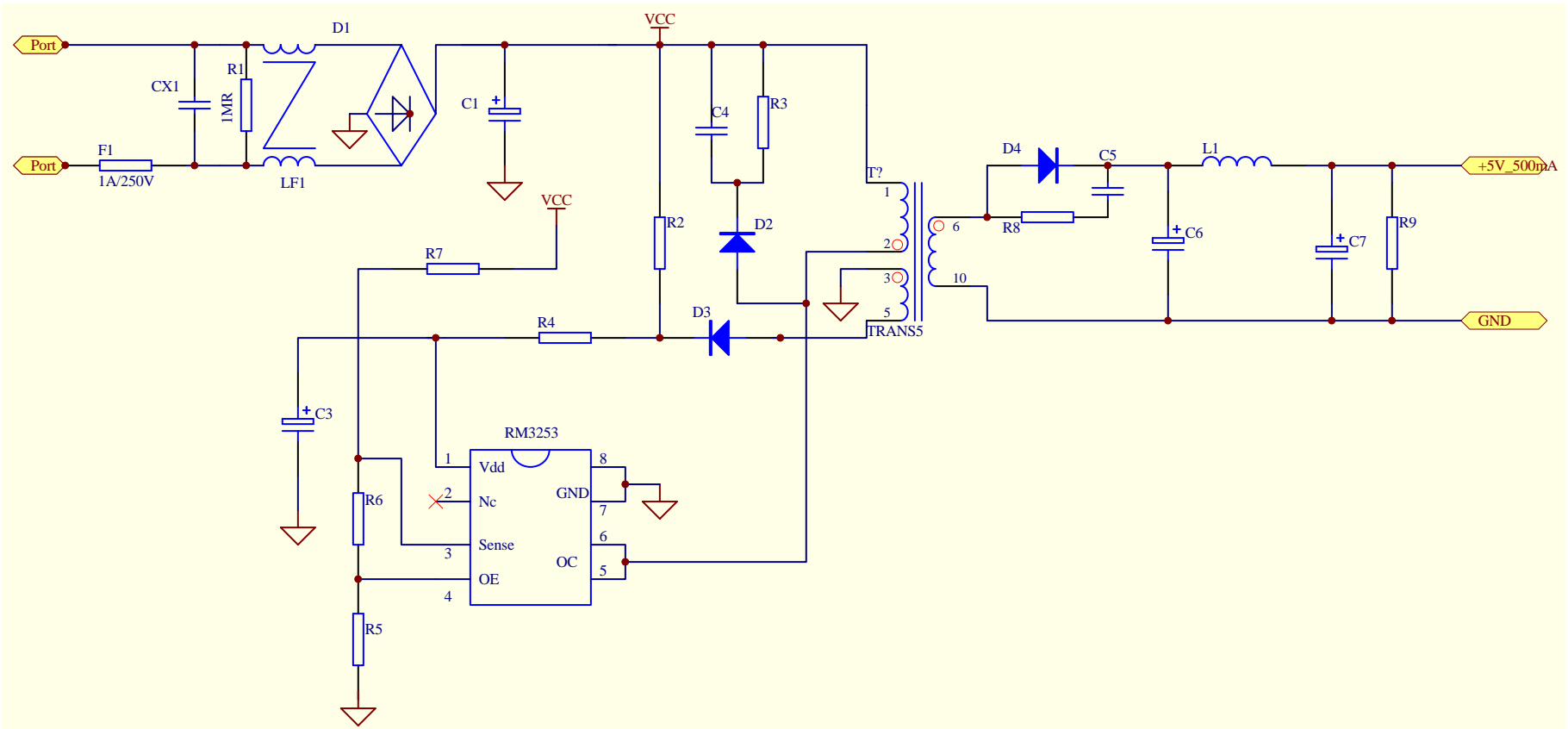


二、Electronical Characteristic Description

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



三、Application circuit



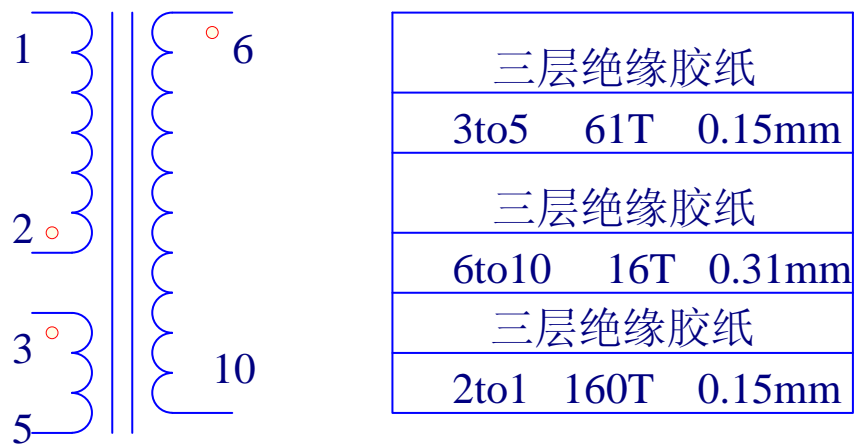


四、BOM LIST

P/N	Description	NO.	Package	Supplier
CX1	0.1uF 275V	1	DIP	
C1	10uF 400V	1	DIP	
C3	1uF 50V	1	DIP	
C4、C9	1nF 1KV	2	DIP	
C6、C7	1000uF 10V	2	DIP	
R2	3M 5% 0805	1	SMD	
R3	100K 5% 0805	1	SMD	
R4	0R 5% 0805	1	SMD	
R5	1.8R 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	220R 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

RM3253(5V_500mA)变压器参数



Core:PC40EE13立式, $L_p=3.5\text{mH}$;



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	4.85V	5V	5.15V		PASS
Current	500mA				PASS
Load regulation	-3%		3%	2%	PASS
Power		2.5W		2.485W	PASS
Efficiency					
Energy Star(5)				69.18%(avg.)	PASS



Test Data

Line Regulation

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

Vin(V)	90	115	185	220	235	265
Vout (V)	5.05	5.05	5.04	5.04	5.04	5.04

Line regulation: 0.2% ; LG (MAX) : ±2% ; Result: **PASS** ;

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

Vin(V)	90	115	185	220	235	265
Vout (V)	4.99	4.98	4.95	4.95	4.95	4.96

Line regulation: 0.8% ; LG (MAX) : ±2% ; Result: **PASS** ;

OCP

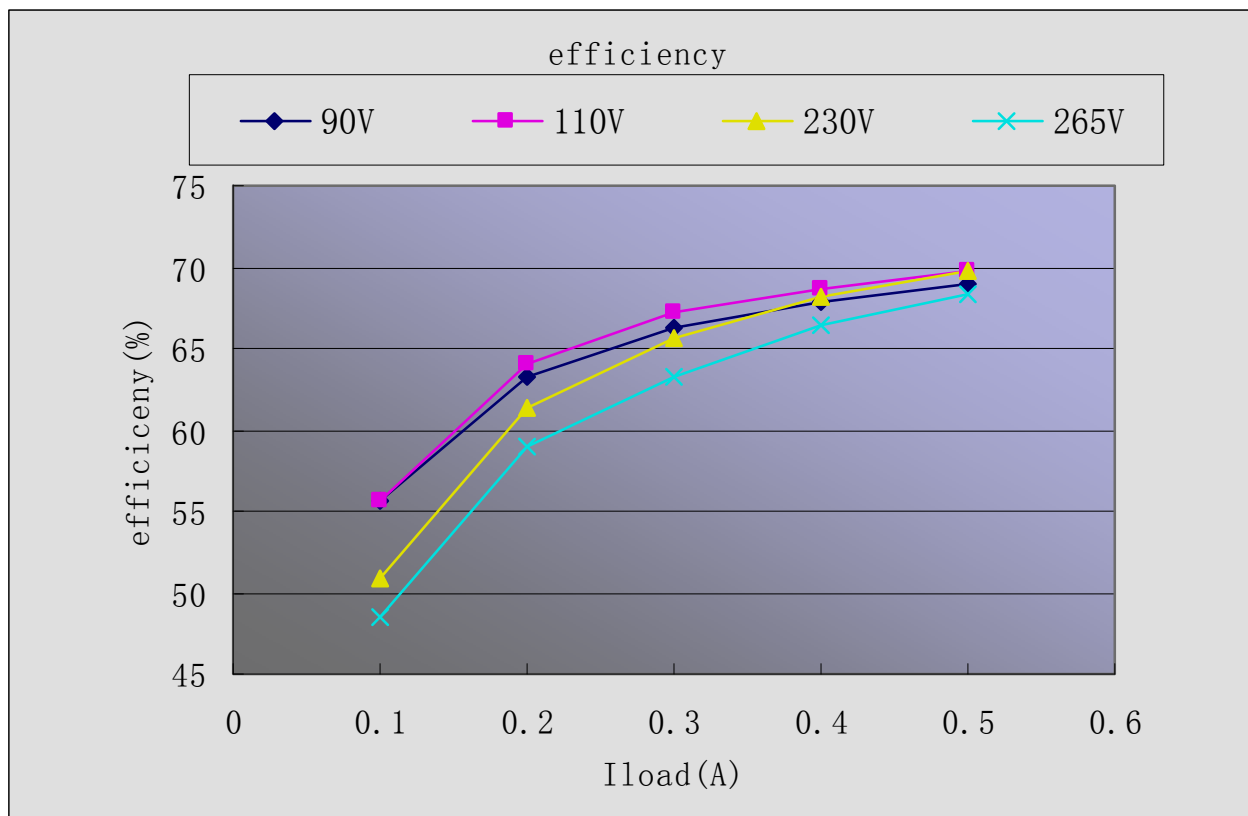
Vin(V)	90	115	185	220
OCP(A)	0.87	0.88	0.84	0.79
Result	PASS	PASS	PASS	PASS

Notice: Iocp=(1.3-1.8) Iout (max) ;



Test Data

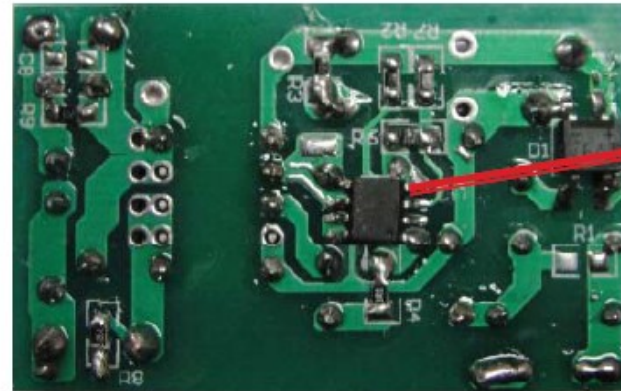
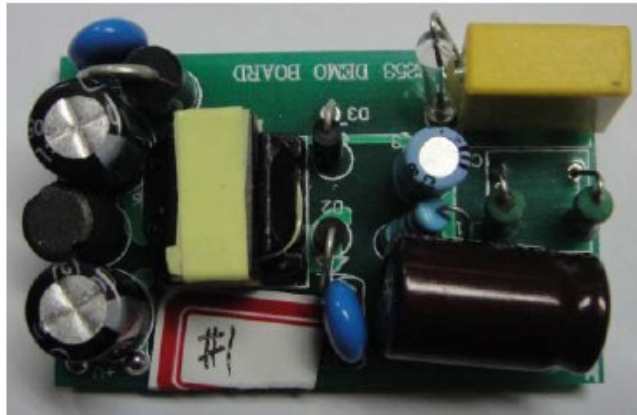
Efficiency





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DEMO Photo





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THE END