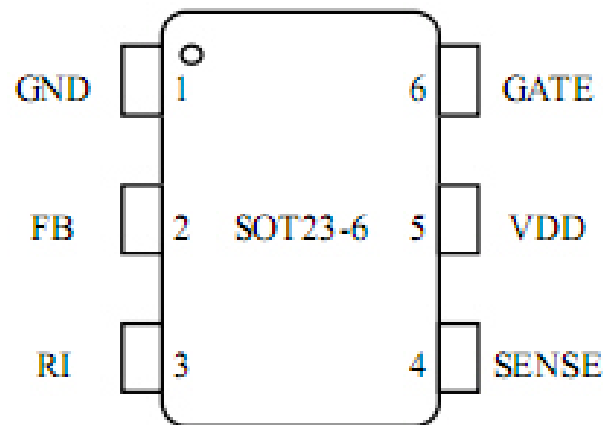


PowTech

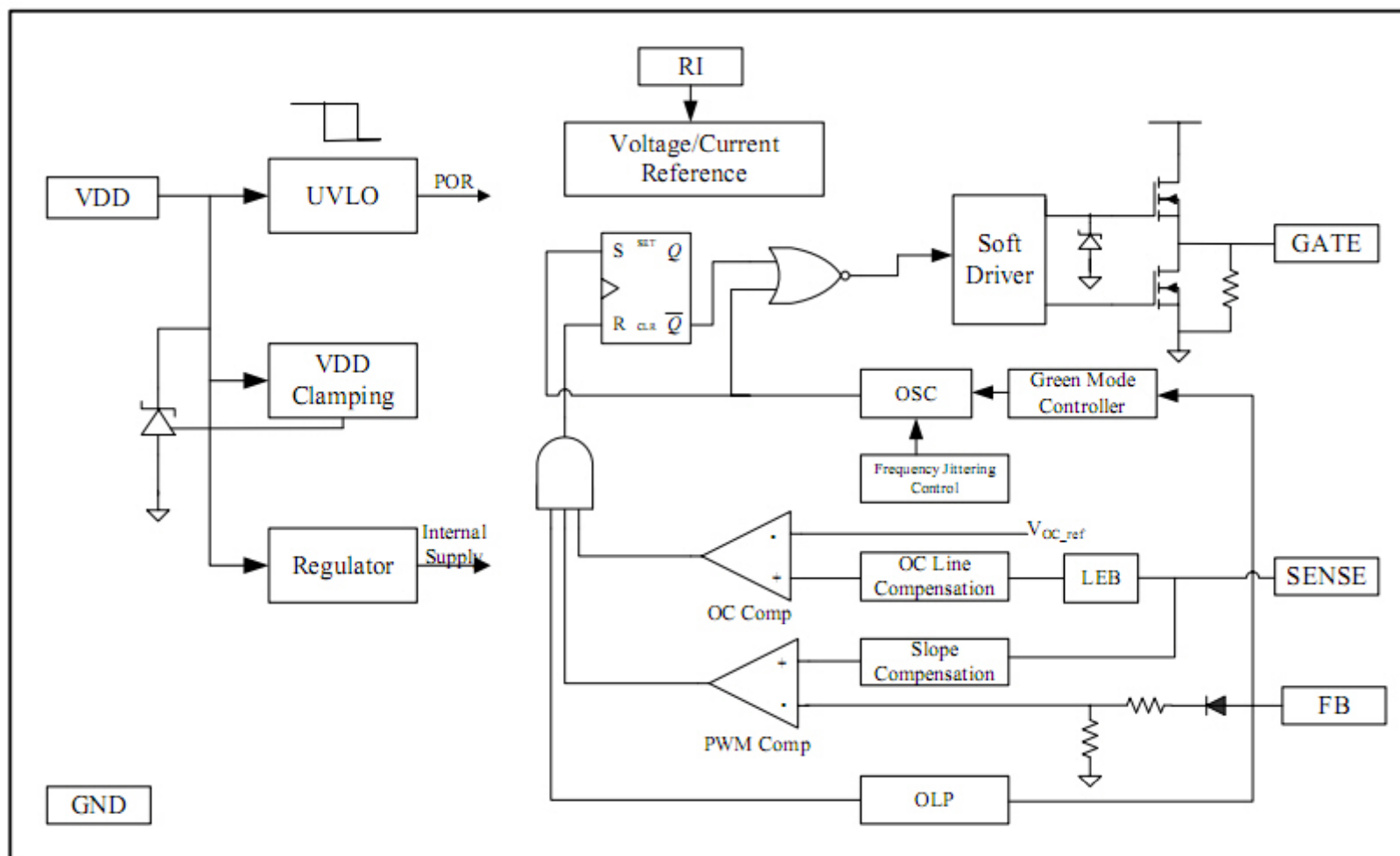
基于PT4201的 离线式LED驱动解决方案 V3.0

PT4201

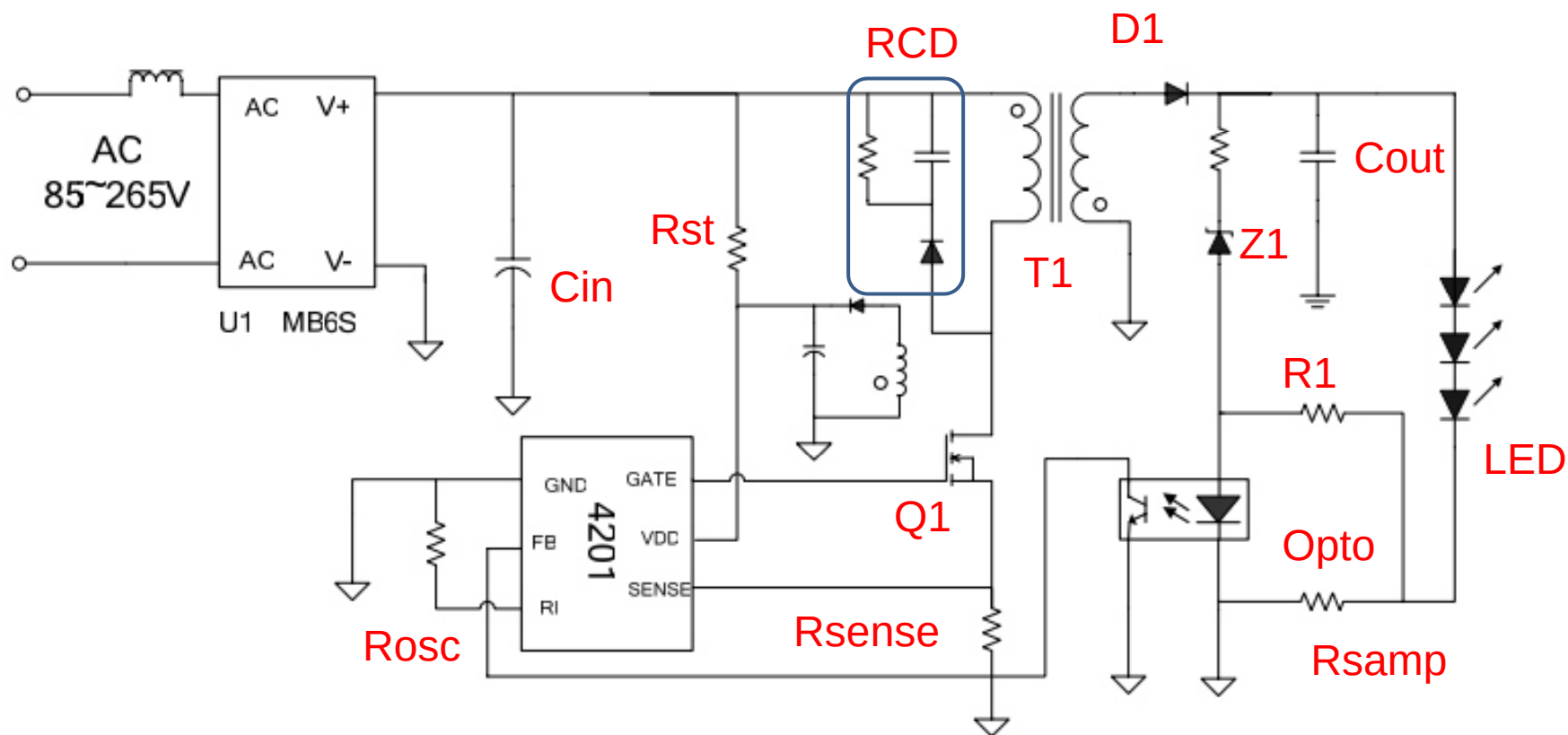
◆PT4201是一款离线式(Off-Line)电流型PWM控制器。集成了过流保护(OCP)，过压保护(OVP)和过载保护(OLP)。可用于1~30W 的适配器，LED驱动及充电器系统。



PT4201内部框图



离线式LED驱动 拓扑图



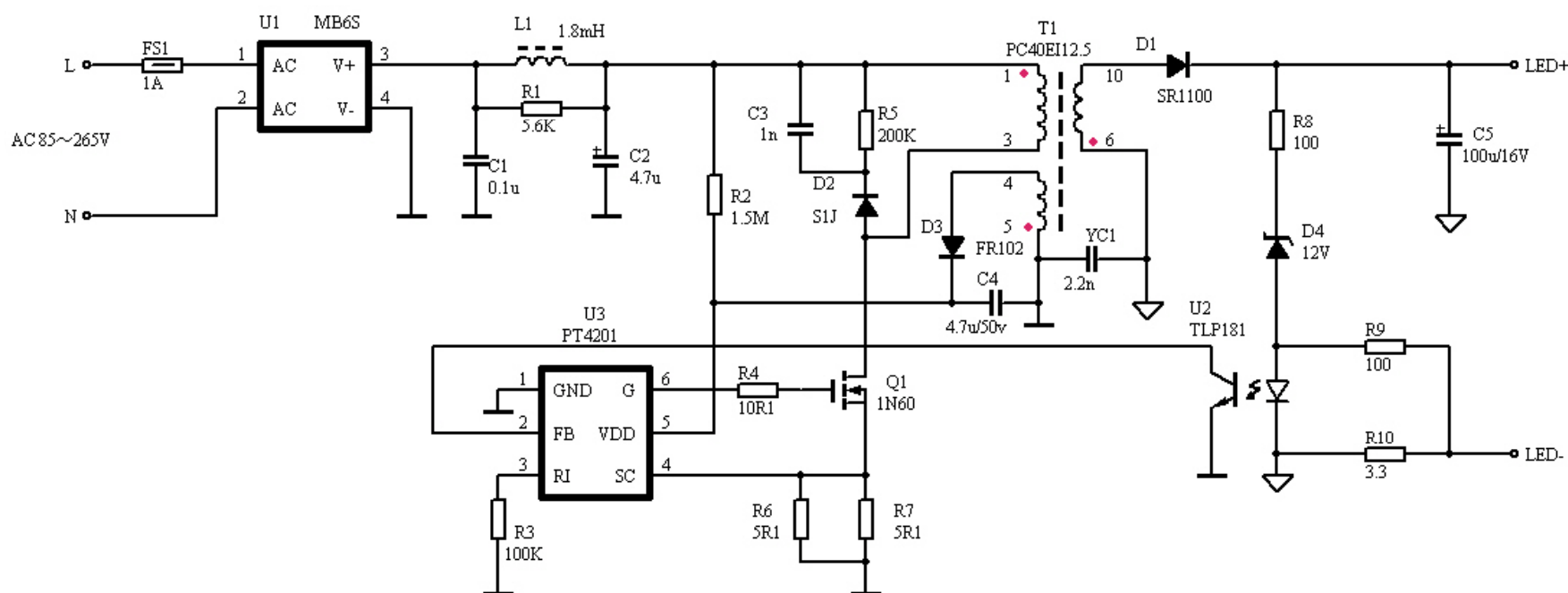
射灯方案



E27

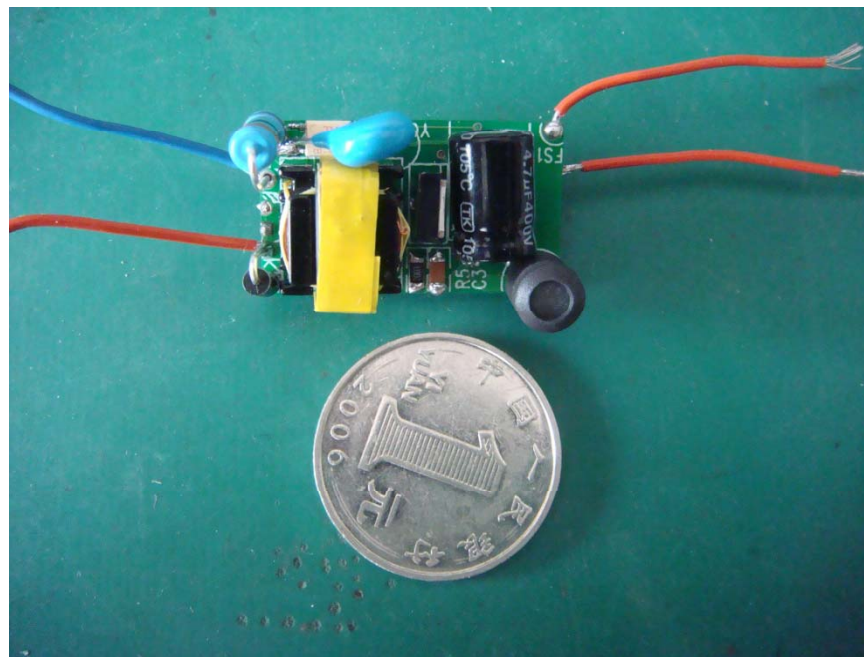


芯片	拓扑结构	输入电压范围	输出电压	输出功率	LED数量
PT4201	反激式	85V~265VAC	14V	3W	3



E27

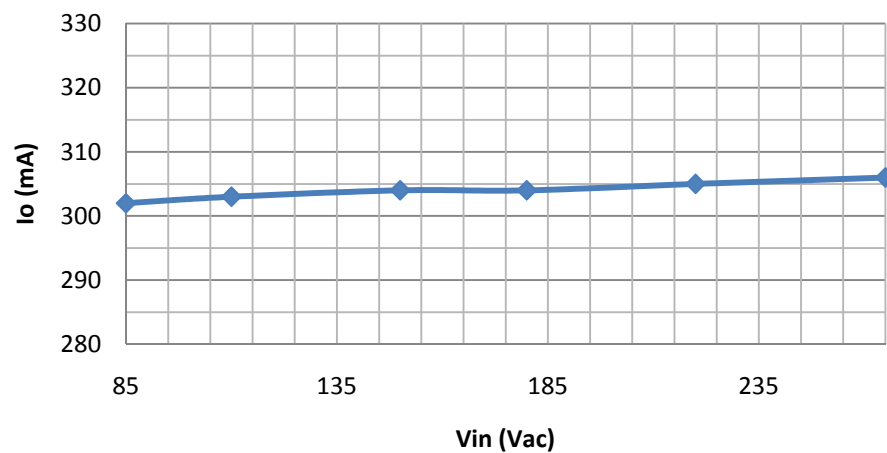
- ◆效率>69%
- ◆PF值>0.45
- ◆电流精度2%
- ◆纹波600mVp-p
- ◆通过传导EMI测试
(EN55015)
- ◆具有开路保护, 过载
保护, 短路保护。



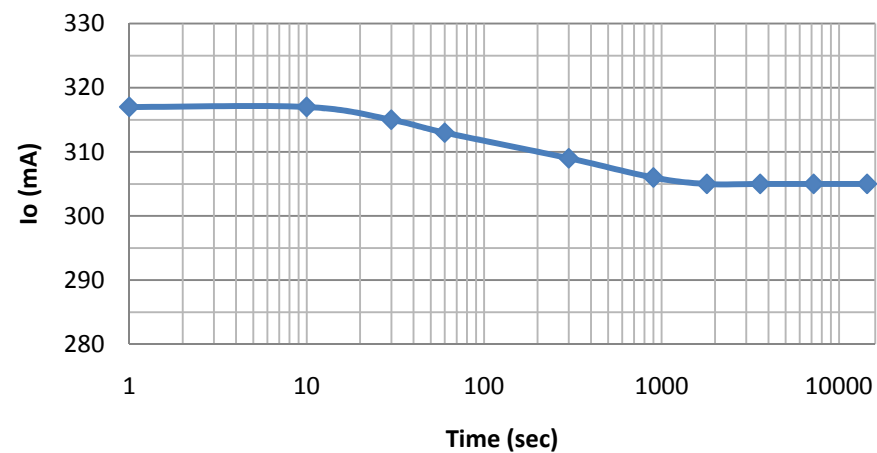
E27



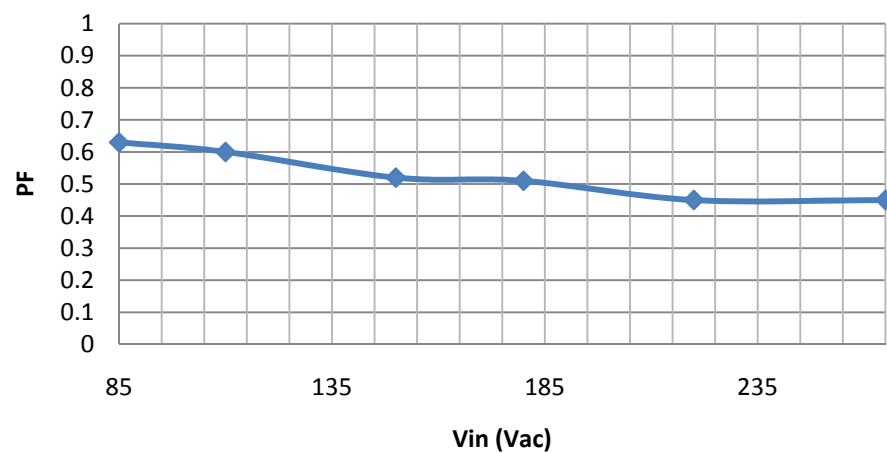
Vin vs. Io



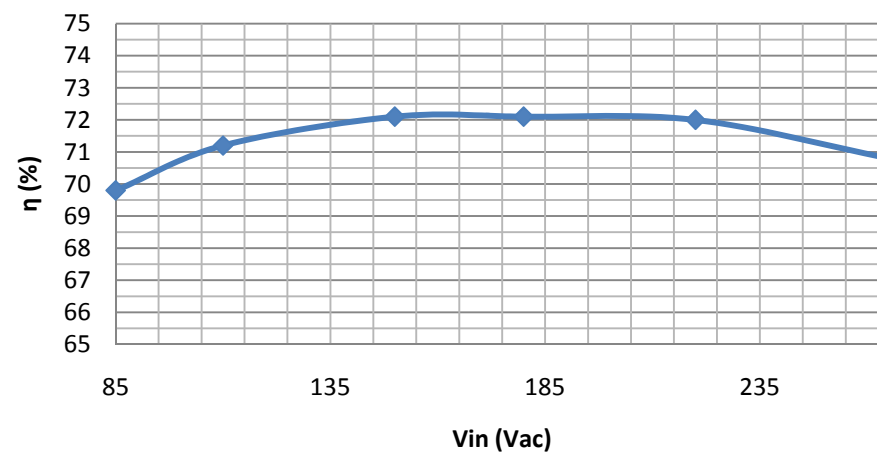
Io vs. Time



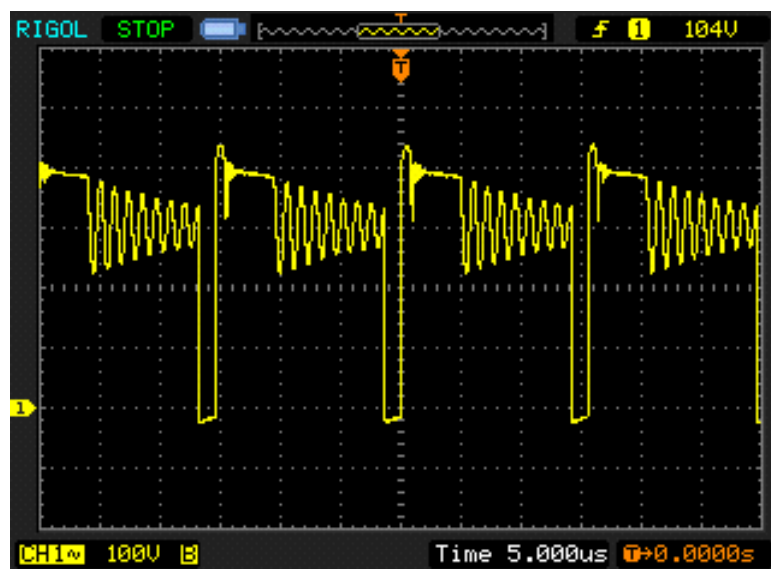
Vin vs. PF



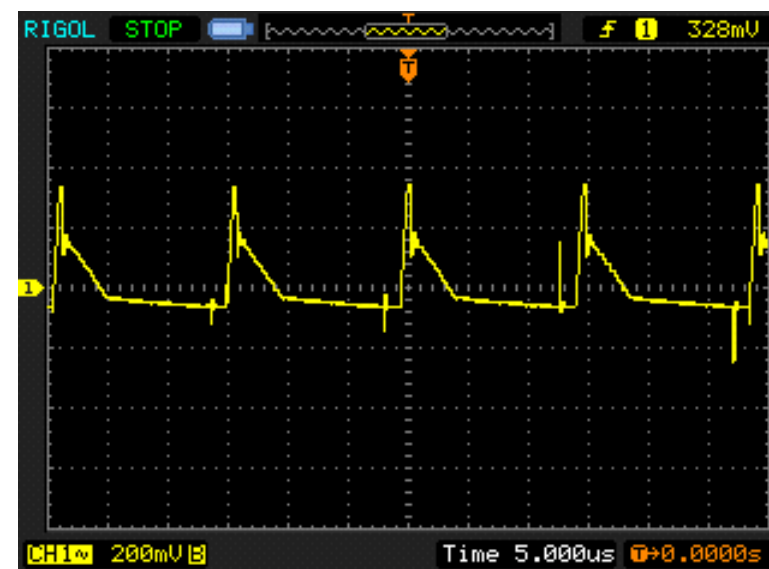
Vin vs. η



E27



Drain波形@220Vac



输出纹波@220Vac

E27

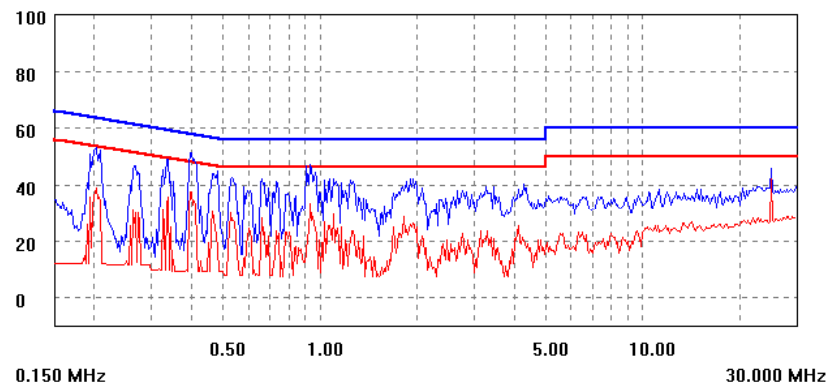


EMI TEST REPORT

parameter		
Organization: POWTECH	Operator: ouxh	EUT: E27
Place:	Time: 2009/11/3/16:58	
Detector: PK+AV	Test-time(ms): 10	
Limit: EN55015	Transducer: 10	
Remark: L		
freq, step		
Start(MHz)	End(MHz)	Step(MHz)
0.150	2.000	0.002
2.000	10.000	0.010
10.000	30.000	0.025

scan result

dBuV

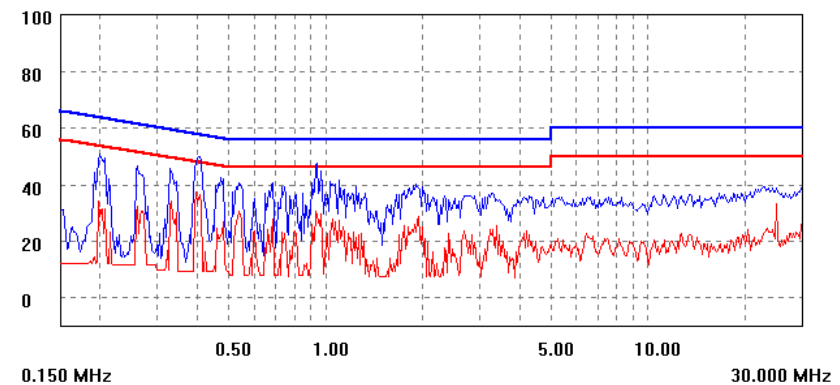


EMI TEST REPORT

parameter		
Organization: POWTECH	Operator: ouxh	EUT: E27
Place:	Time: 2009/11/3/17:10	
Detector: PK+AV	Test-time(ms): 10	
Limit: EN55015	Transducer: 10	
Remark: N		
freq, step		
Start(MHz)	End(MHz)	Step(MHz)
0.150	2.000	0.002
2.000	10.000	0.010
10.000	30.000	0.025

scan result

dBuV



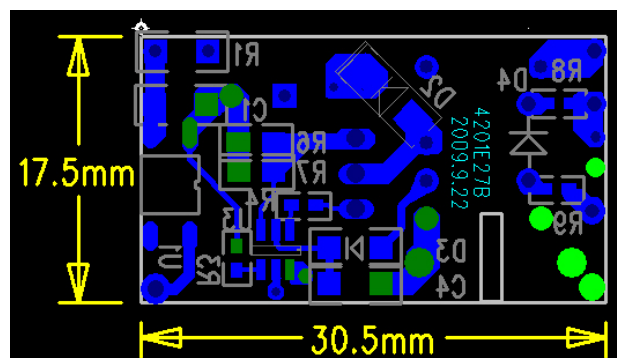
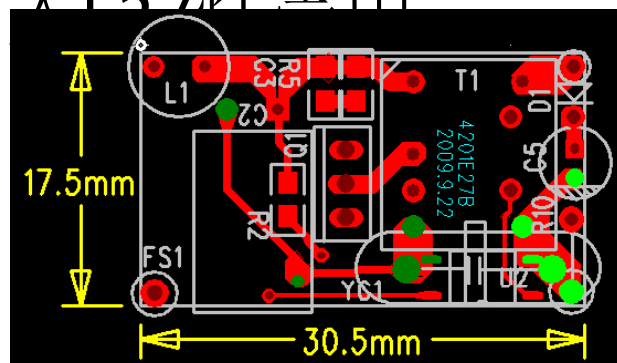
E27

◆共27个元器件

◆PCB尺寸

30.5*17.5mm，易于放

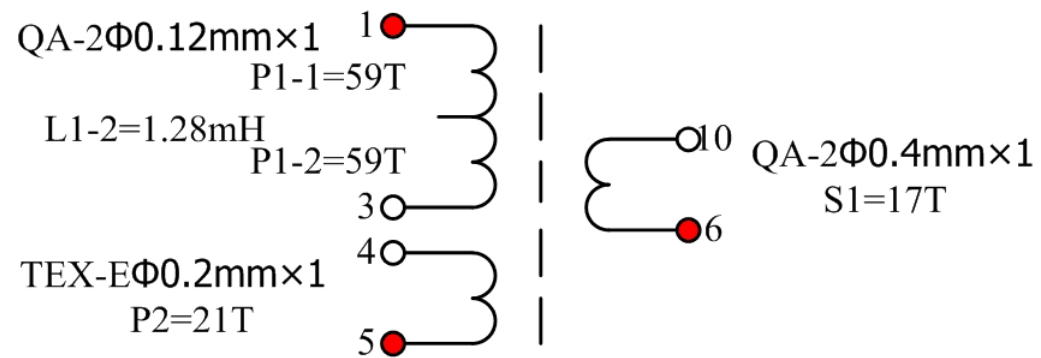
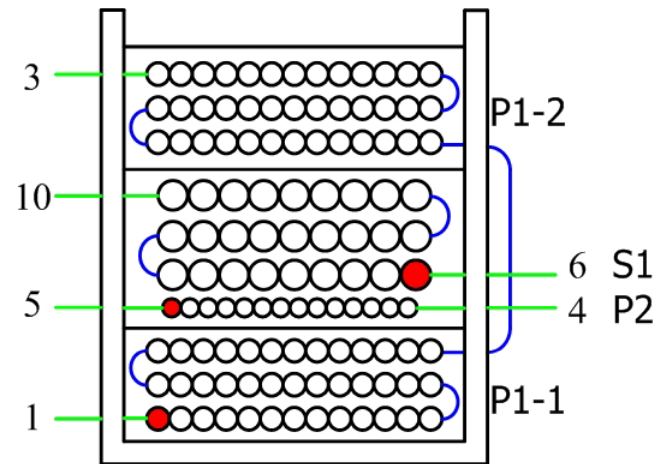
入E27灯壳中



标号	描述	供应商
C1	陶瓷电容,0.1uF/500V	风华
C2	电解电容,4.7uF/400V,8×12.5mm	Sawha
C3	陶瓷电容,1000pF/500V,0805	风华
C4	陶瓷电容,4.7uF/50V,1206	风华
C5	电解电容,100uF/16V,5×8mm	Sawha
YC1	Y电容,2200pF/275Vac	Vishay
D1	肖特基二极管,SR1100,DIP	On semi
D2	快速恢复二极管,S1J,SMD	MCC semi
D3	快速恢复二极管,FR102,SMD	Vishay
D4	稳压管,12V/0.5W,DIP	Microsemi Corp
L1	差模电感,1.8mH/5Ω@100Hz,	柯爱亚
FS1	Fuse,1A/250V	Walter
Q1	MOSFET,N-Channel,1N60,TO251	UTC
R1	贴片电阻,5.6KΩ,5%,0805	风华
R2	贴片电阻,1.5MΩ,5%,0805	风华
R3	贴片电阻,100KΩ,1%,0603	风华
R4	贴片电阻,10Ω,5%,0603	风华
R5	贴片电阻,200KΩ,5%,0805	风华
R6,R7	贴片电阻,5.1Ω,1%,0805	风华
R8,R9	贴片电阻,100Ω,5%,0603	风华
R10	金属膜电阻,3.5Ω/0.5W,1%	Laube
U1	整流桥,MB6S,SMD	Diodes Inc
U2	光耦,TLP181,SMD	Toshiba
U3	PWM控制器,PT4201,SOT23-6	PowTech
T1	变压器,PC40EI12.5	PowTech

E27

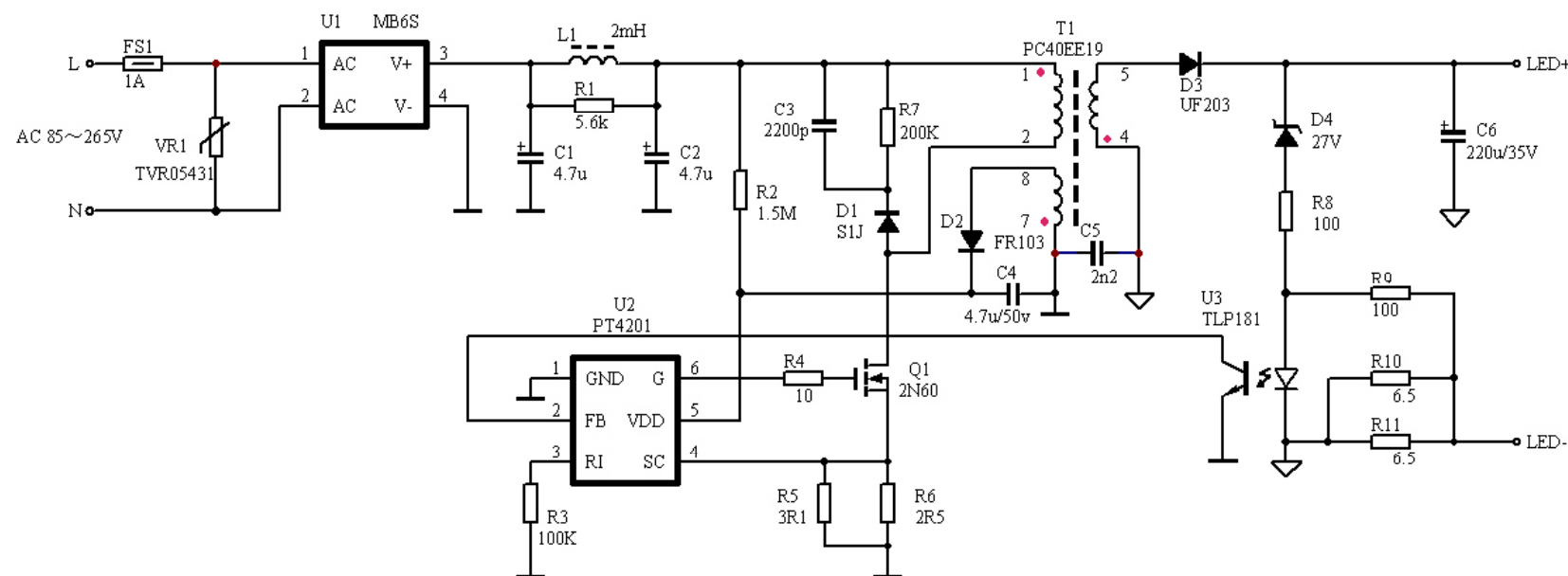
PC40EI12.5



PAR30

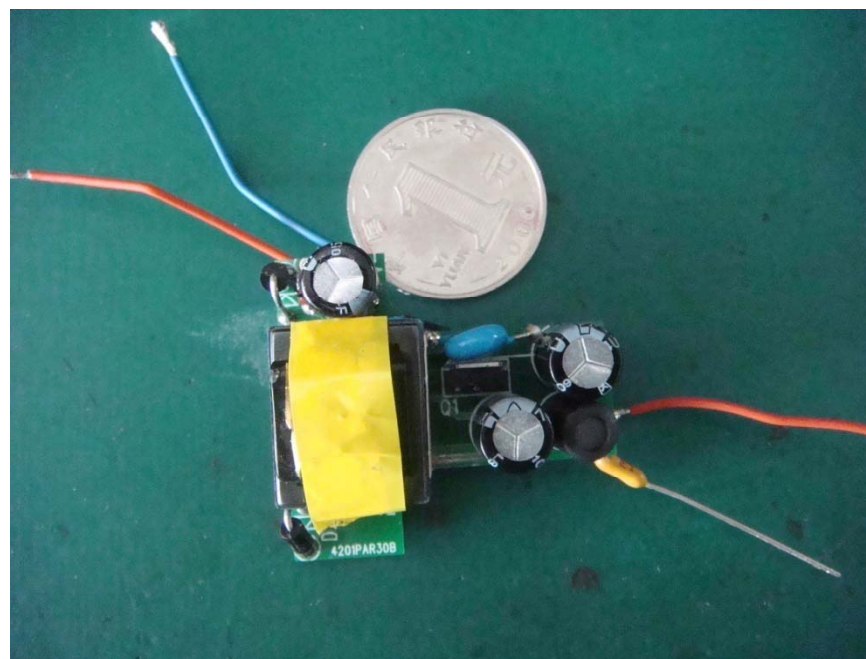


芯片	拓扑结构	输入电压范围	输出电压	输出功率	LED数量
PT4201	反激式	85V~265VAC	29V	5-7W	5-7



PAR30

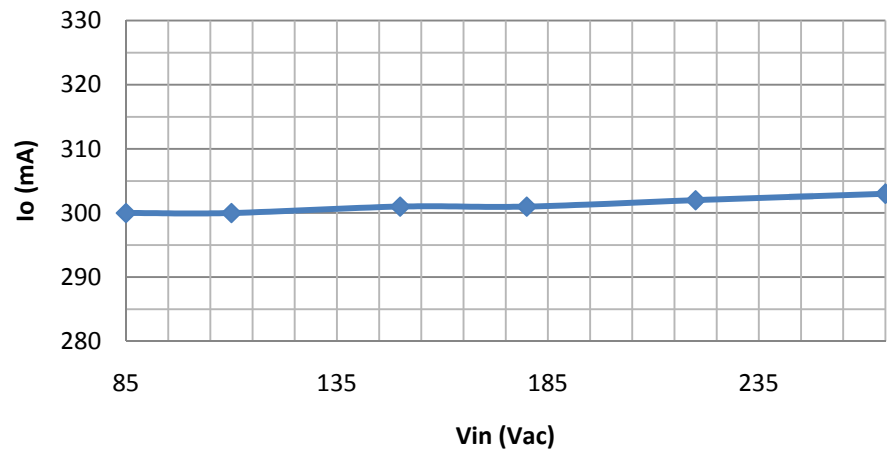
- ◆效率>78%
- ◆PF值>0.45
- ◆电流精度2%
- ◆纹波小于600mVp-p
- ◆通过传导EMI测试
(EN55015)
- ◆具有开路保护，过载保护，短路保护。



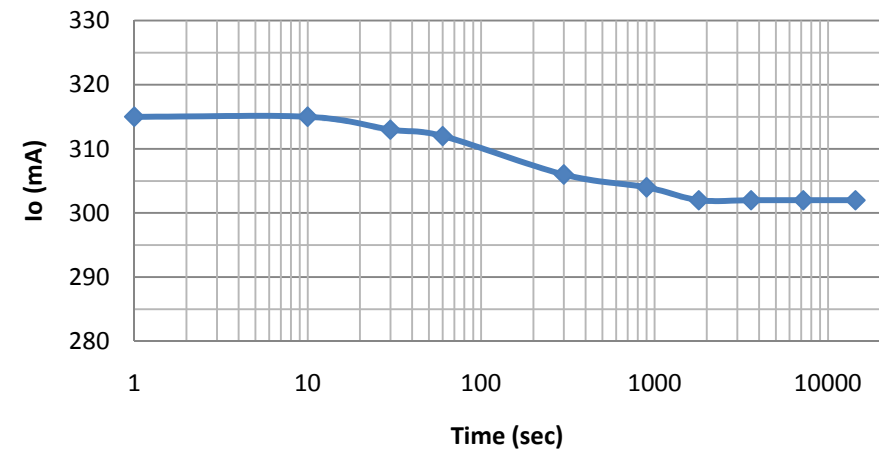
PAR30



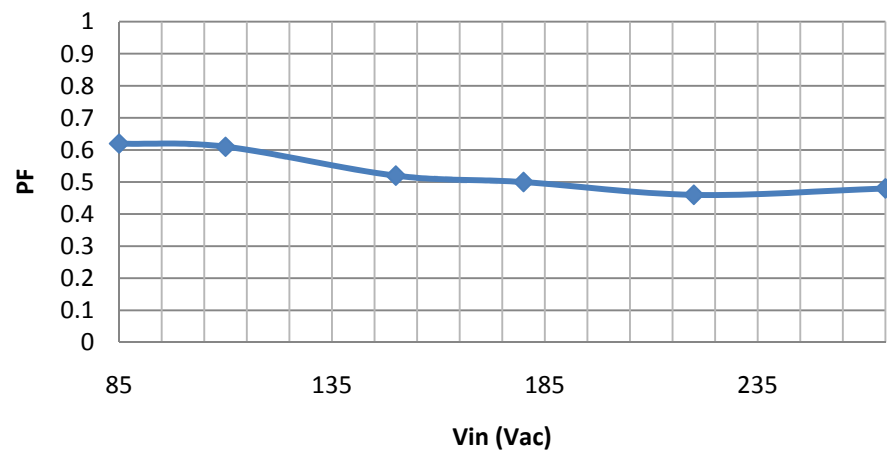
Vin vs. Io



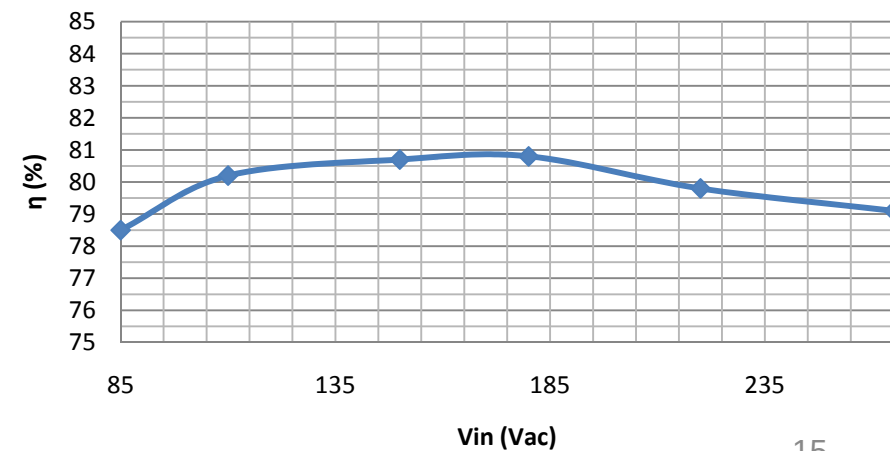
Io vs. Time



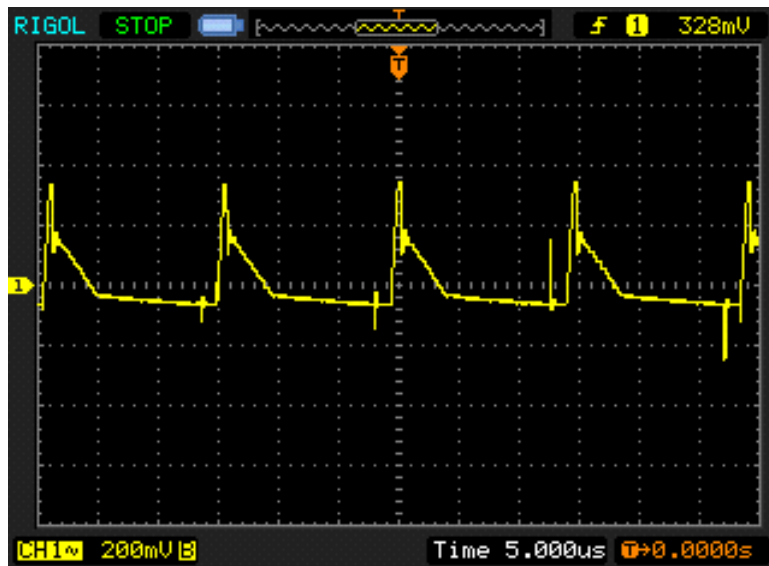
Vin vs. PF



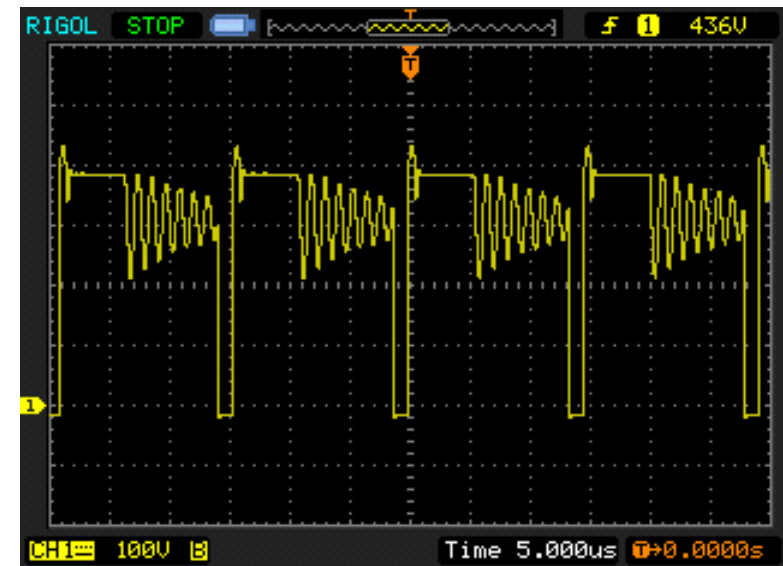
Vin vs. η



PAR30



纹波波形@220Vac



Drain波形@220Vac

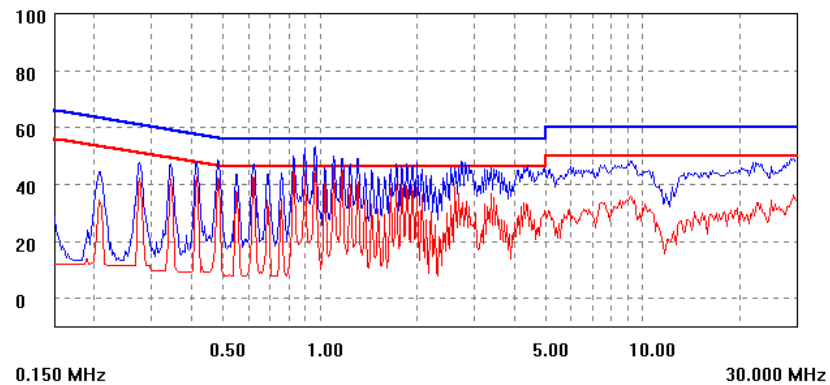
PAR30



EMI TEST REPORT

----- parameter -----		
Organization: POWTECH	Operator: ouxh	EUT: P30
Place:	Time: 2009/11/5/14:44	
Detector: PK+AV	Test-time(ms): 10	
Limit: EN55015	Transducer: 10	
Remark: L		
----- freq, step -----		
Start(MHz)	End(MHz)	Step(MHz)
0.150	2.000	0.002
2.000	10.000	0.010
10.000	30.000	0.025
----- scan result -----		

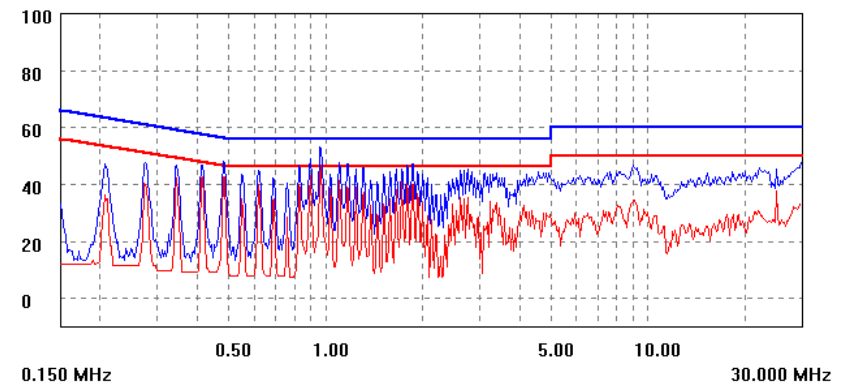
dBuV



EMI TEST REPORT

----- parameter -----		
Organization: POWTECH	Operator: ouxh	EUT: P30
Place:	Time: 2009/11/5/14:40	
Detector: PK+AV	Test-time(ms): 10	
Limit: EN55015	Transducer: 10	
Remark: N		
----- freq, step -----		
Start(MHz)	End(MHz)	Step(MHz)
0.150	2.000	0.002
2.000	10.000	0.010
10.000	30.000	0.025
----- scan result -----		

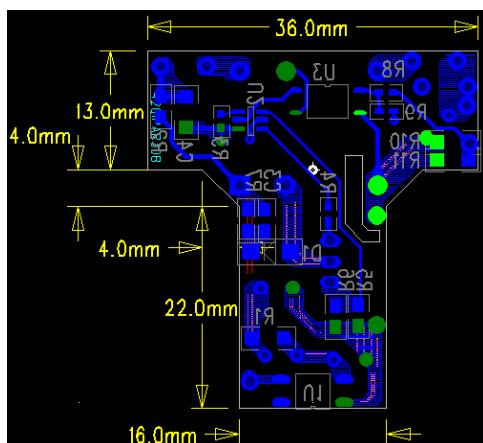
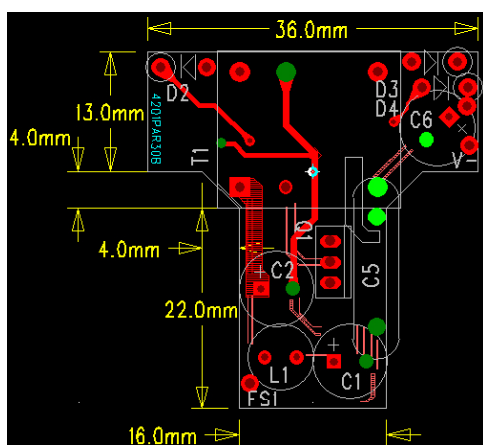
dBuV



PAR30

◆共29个元器件

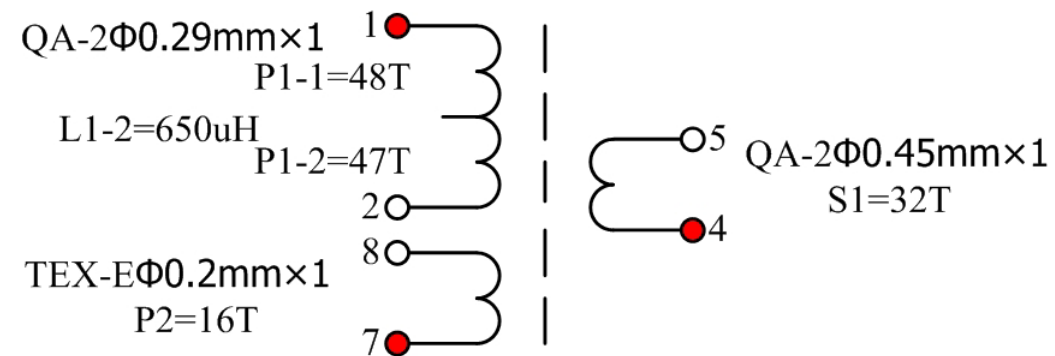
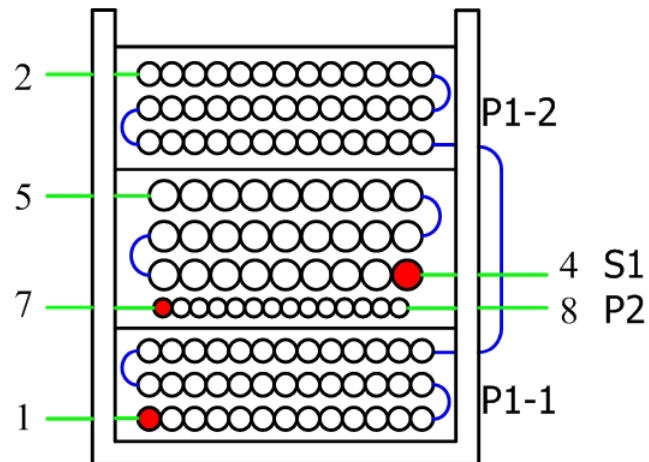
◆T型PCB尺寸39*36mm



标号	描述	供应商
C1,C2	电解电容,4.7uF/400V,8×12.5mm	Sawha
C3	陶瓷电容,2200pF/500V,1206	风华
C4	陶瓷电容,4.7uF/50V,1206	风华
C5	Y电容,2200pF/275Vac	Vishay
C6	电解电容,220uF/35V,8×11.5mm	Sawha
D1	快速恢复二极管,S1J	MCC semi
D2	快速恢复二极管,FR103,DIP	Vishay
D3	快速恢复二极管,UF203,DIP	PANJIT
D4	稳压管,27V/0.5W,DIP	Microsemi Corp
L1	差模电感,2mH/5Ω@100Hz,	柯爱亚
Q1	MOSFET,N-Channel,2N60	UTC
R1	贴片电阻,5.6KΩ,5%,1206	风华
R2	贴片电阻,1.5MΩ,5%,0805	风华
R3	贴片电阻,100KΩ,1%,0603	风华
R4	贴片电阻,10Ω,5%,0603	风华
R5	贴片电阻,3Ω,1%,0805	风华
R6	贴片电阻,2.5Ω,1%,0805	风华
R7	贴片电阻,200KΩ,5%,1206	风华
R8,R9	贴片电阻,100Ω,5%,0603	风华
R10,R11	贴片电阻,6.5Ω,1%,1206	风华
U1	整流桥,MB6S,SMD	Diodes Inc
U2	PWM控制器,PT4201,SOT23-6	PowTech
U3	光耦,TLP181,SMD	Toshiba
T1	变压器,PC40EE19	上海康磁
VR1	压敏电阻,TVR05431,DIP	Thinking
FS1	Fuse,1A/250V	Walter

PAR30

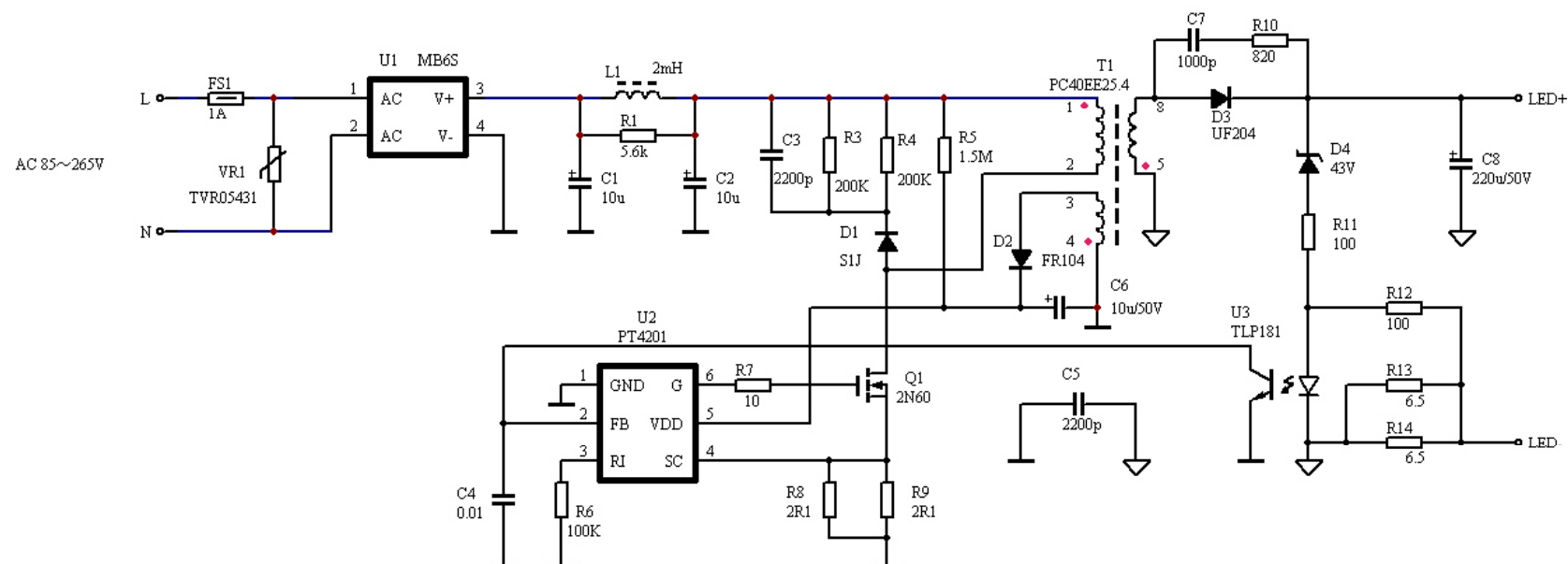
PC40EE19



PAR38

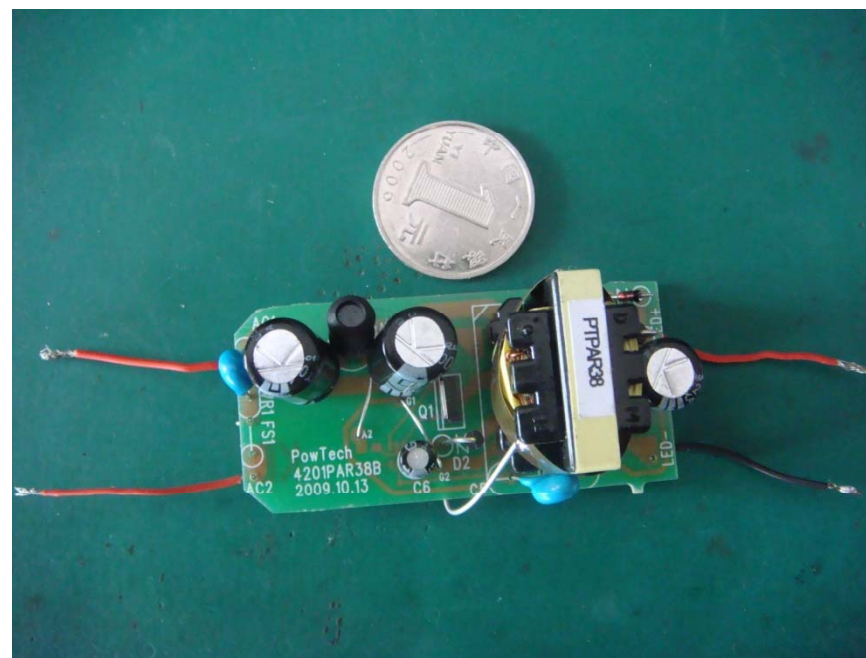


芯片	拓扑结构	输入电压范围	输出电压	输出功率	LED数量
PT4201	反激式	85V~265VAC	45V	9-12W	9-12



PAR38

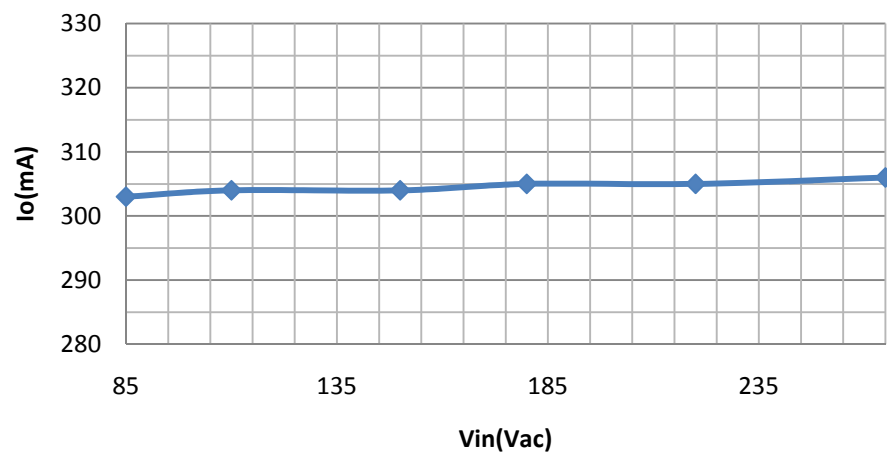
- ◆效率>85%
- ◆PF值>0.5
- ◆电流精度2%
- ◆纹波小于600mVp-p
- ◆通过传导EMI测试
(EN55015)
- ◆具有开路保护，过载保护，短路保护。



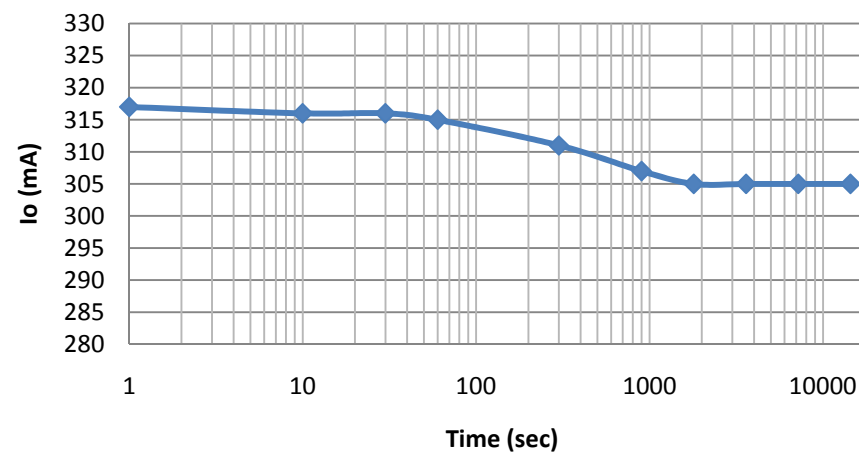
PAR38



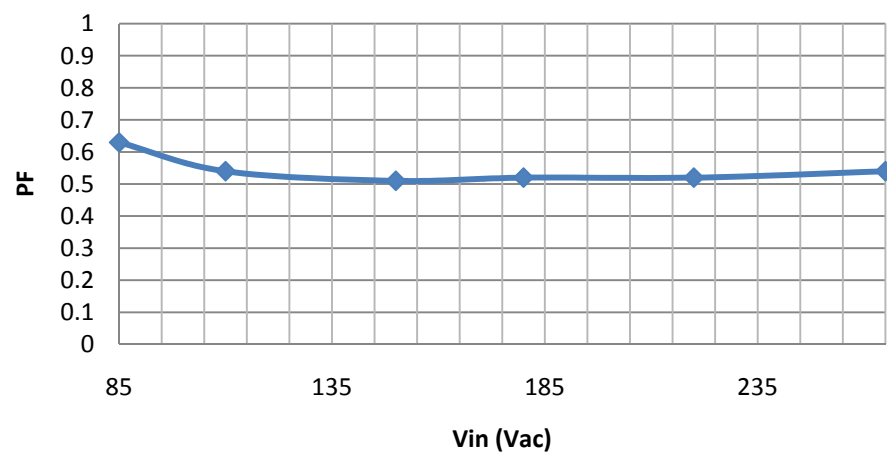
Vin vs. Io



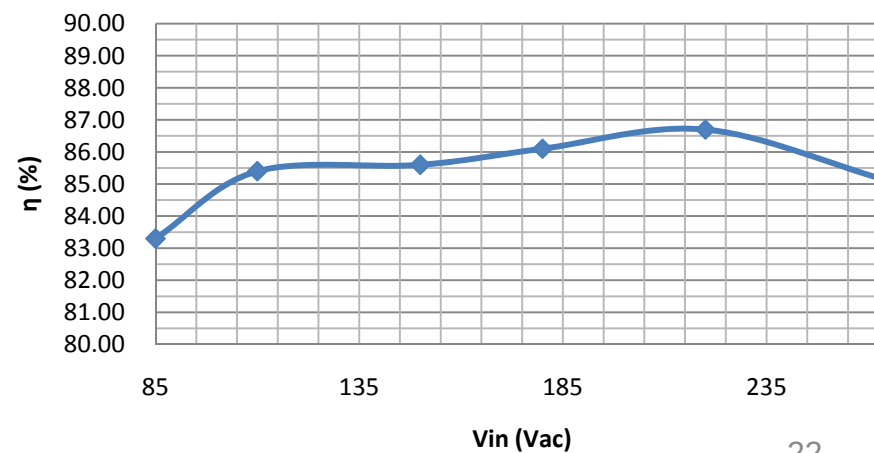
Io vs. Time



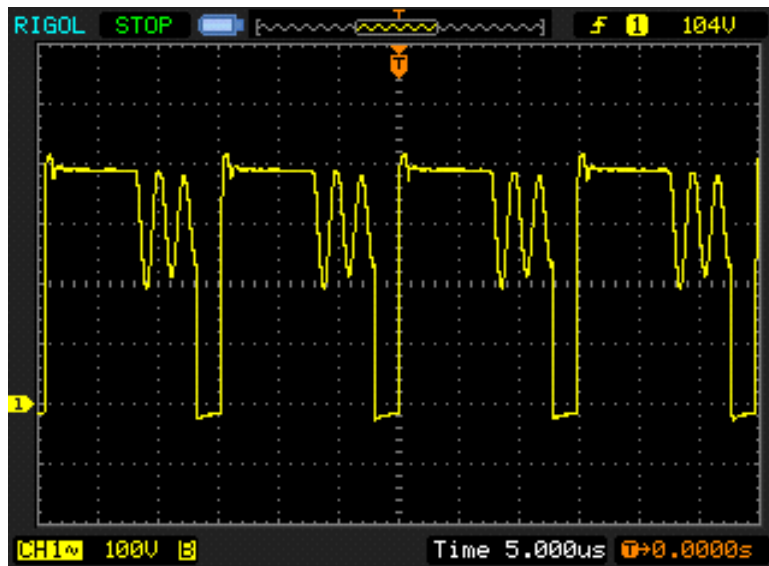
Vin vs. PF



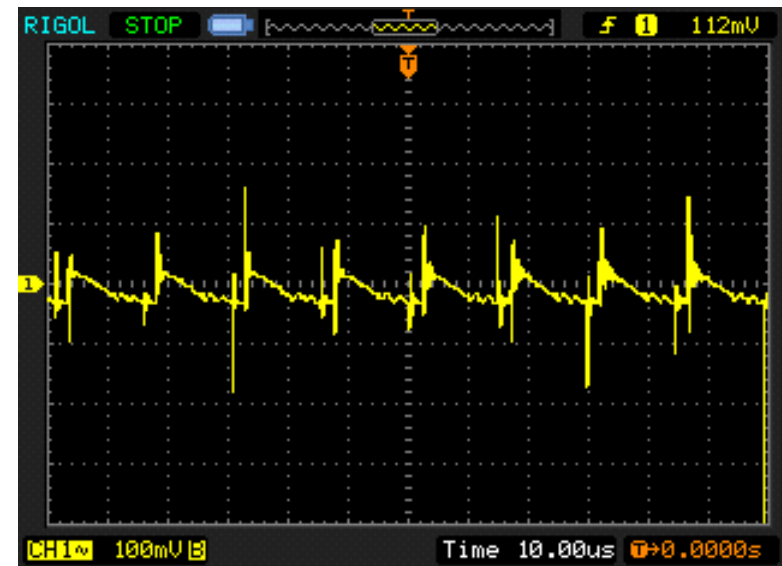
Vin vs. η



PAR38



Drain@220Vac



Ripple@220Vac

PAR38

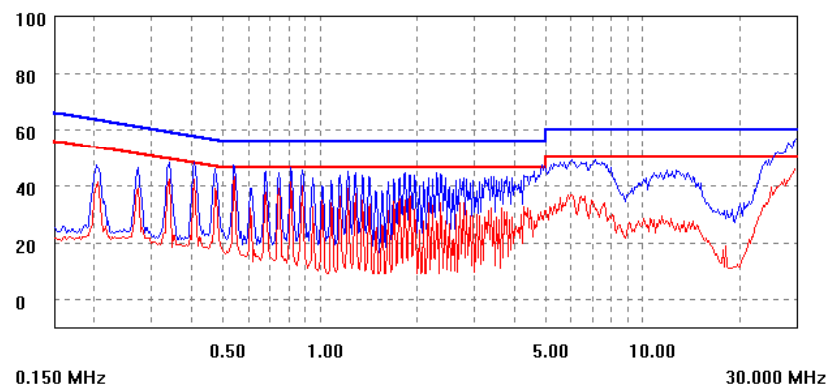


EMI TEST REPORT

Organization: POWTECH Operator: ouxh EUT: P38
Place: Time: 2009/11/2/13:55
Detector: PK+AV Test-time(ms): 10
Limit: EN55015 Transducer: 10
Remark: L

Start(MHz)	End(MHz)	Step(MHz)
0.150	2.000	0.002
2.000	10.000	0.010
10.000	30.000	0.025

dBuV

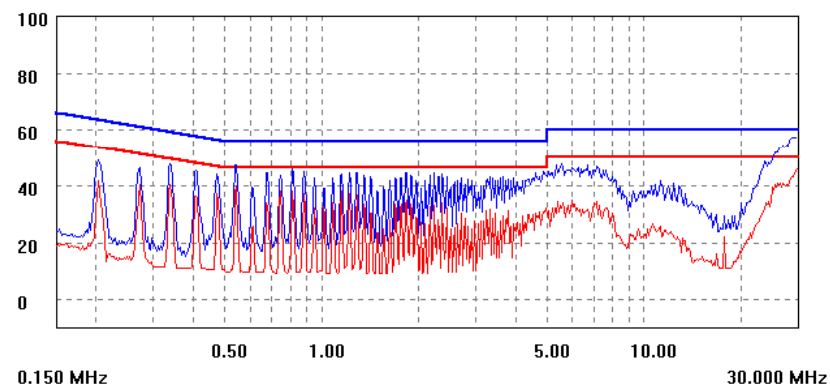


EMI TEST REPORT

Organization: POWTECH Operator: ouxh EUT: P38
Place: Time: 2009/11/2/13:52
Detector: PK+AV Test-time(ms): 10
Limit: EN55015 Transducer: 10
Remark: N

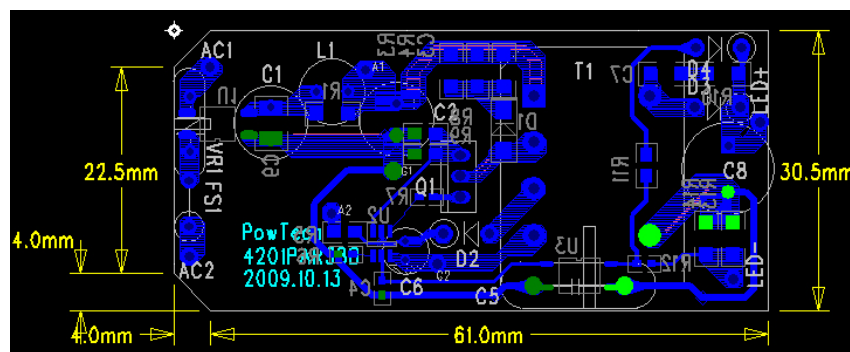
Start(MHz)	End(MHz)	Step(MHz)
0.150	2.000	0.002
2.000	10.000	0.010
10.000	30.000	0.025

dBuV



PAR38

- ◆共33个元器件
- ◆单面板PCB尺寸
65*30.5mm



标号	描述	供应商
C1,C2	电解电容,10uF/400V,10×16mm	Sawha
C3	陶瓷电容,2200pF/500V,1206	风华
C4	陶瓷电容,10nF or NL,0805	风华
C5	Y电容,2200pF/275Vac	Vishay
C6	电解电容,10uF/50V,5×11mm	Sawha
C7	陶瓷电容,1000pF/50V,1206	风华
C8	电解电容,220uF/50V,10×12.5mm	Sawha
D1	快速恢复二极管,S1J	MCC semi
D2	快速恢复二极管,FR104,DIP	Vishay
D3	快速恢复二极管,UF204,DIP	PANJIT
D4	稳压管,43V/0.5W,DIP	Microsemi Corp
L1	差模电感,2mH/5Ω@100Hz	柯爱亚
Q1	MOSFET,N-Channel,2N60	UTC
R1	贴片电阻,5.6KΩ,5%,1206	风华
R3,R4	贴片电阻,200KΩ,5%,1206	风华
R5	贴片电阻,1.5MΩ,5%,0805	风华
R6	贴片电阻,100KΩ,1%,0603	风华
R7	贴片电阻,10Ω,5%,0603	风华
R8,R9	贴片电阻,2Ω,1%,0805	风华
R10	贴片电阻,820Ω,5%,1206	风华
R11,R12	贴片电阻,100Ω,5%,0603	风华
R13,R14	贴片电阻,6.5Ω,1%,1206	风华
U1	整流桥,MB6S,SMD	Diodes Inc
U2	PWM控制器,PT4201,SOT23-6	PowTech
U3	光耦,TLP181,SMD	Toshiba
T1	变压器,PC40EE25.4	上海康磁
VR1	压敏电阻,TVR05431,DIP	Thinking
FS1	Fuse,1A/250V	Walter

PAR38

PC40EE25.4-Z

