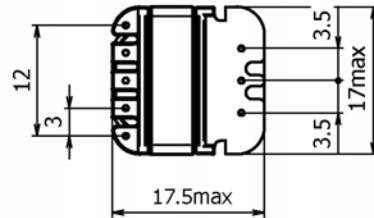
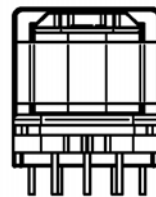
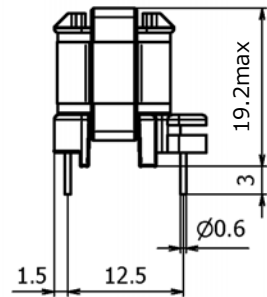
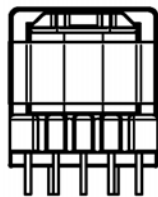
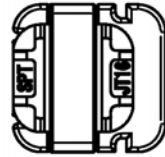
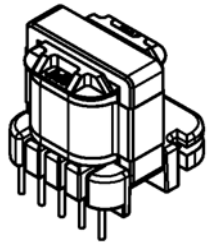


PN : JT0512R-2P

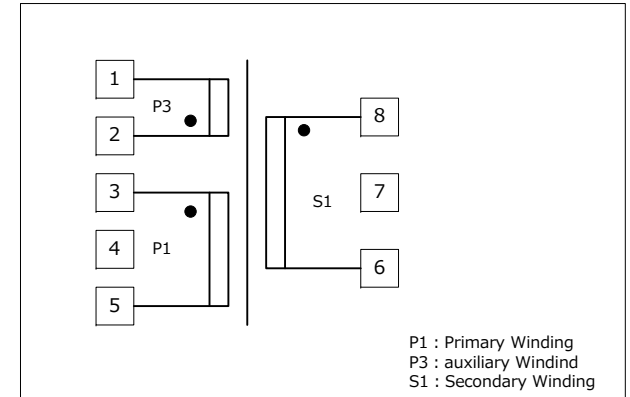


RoHS compliant

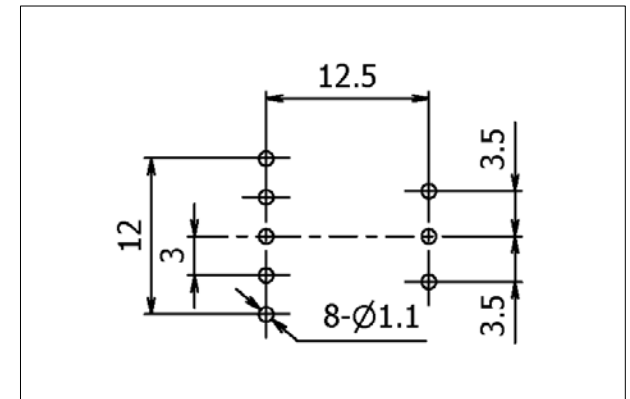


Bobbin : JT16
Ferrite core : EE16

Dimensions



Schematics (Top View)



Recommended PCB hole size (Bottom view)

1. Specifications are subject to change for improvement without notice.
2. Please request us detailed specification.



TEST REPORT

Product Name	Test Board
Product Number	EVA-JT0512R-2P
Design Number	PS1215A
Sheet Number	
Date	2017/6/23

Meet Safety Standards
IEC 60950 PSE

Specification

Trans type : JT16

IC name : BM2P093F (ROHM)

Input voltage : AC100V – 240V (85V ~ 264V)

Input frequency : 50Hz / 60Hz (47Hz ~ 63Hz)

Output power : 5W

Output voltage : 12V (11.4V ~ 12.6V)

Output current : 0.42A

Ripple noise : 231mVp-p typ (AC100V) 282mVp-p typ (AC240V)

Standby power : 0.06W typ (AC100V) 0.08W typ (AC240V)

Efficiency : 84.2% (AC100V) 82.8% (AC240V)

Over load protect : Auto restart

Over voltage protect : Latch

Over temperature protect : 145°C (typ)

Operating temperature : -10°C ~ +50°C

Storage temperature : -30°C ~ +85°C

Hi-pot test : 3000V 1min.

Dimensions : 38.0 × 25.0 × 18.0 (mm)

Weight : 15.5g

Alphatrans co., ltd.

4-4-11 Bakurou-machi, Chuo-ku, Osaka

541-0059 Japan

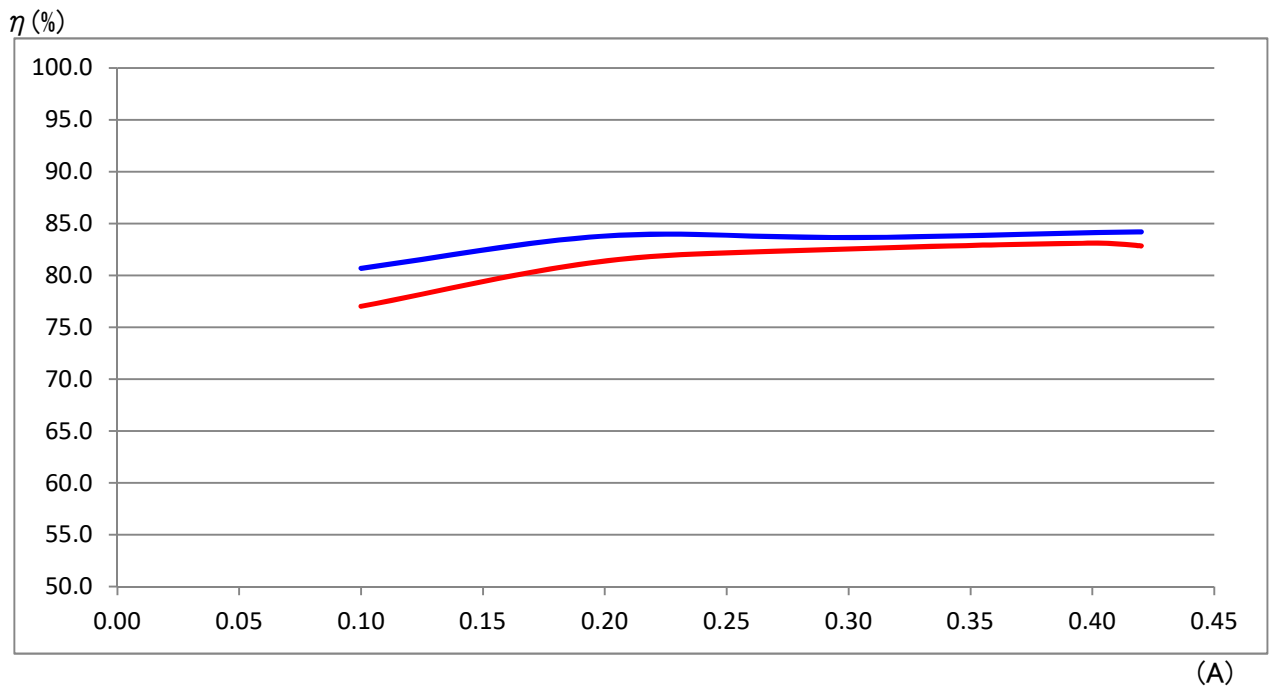
TEL (06) 6252-8839 FAX (06) 6252-3939

<http://www.alphatrans.jp/>

Approve	Check	Drawn
T.Hagimoto	E .Fujishita	M .Omori

Load Regulation

AC in (V)	12V (V)	12V (A)	Bias (V)	I in (mA)	P in (W)	P out (W)	P loss (W)	効率 (%)
100	11.861	0.00	16.55	2.06	0.057	0.000	0.057	0.0
100	11.860	0.10	17.42	40.21	1.470	1.186	0.284	80.7
100	11.860	0.20	17.49	67.75	2.831	2.372	0.459	83.8
100	11.860	0.30	17.52	92.60	4.254	3.558	0.696	83.6
100	11.860	0.40	17.54	116.10	5.640	4.744	0.896	84.1
100	11.860	0.42	17.55	121.00	5.916	4.981	0.935	84.2
240	11.862	0.00	16.25	0.97	0.078	0.000	0.078	0.0
240	11.861	0.10	17.59	27.78	1.540	1.186	0.354	77.0
240	11.861	0.20	17.76	44.69	2.915	2.372	0.543	81.4
240	11.861	0.30	17.92	58.02	4.311	3.558	0.753	82.5
240	11.861	0.40	18.05	72.23	5.709	4.744	0.965	83.1
240	11.861	0.42	18.07	75.66	6.013	4.982	1.031	82.8



Over Current Protection

AC100V: 0.90A

AC240V: 1.02A

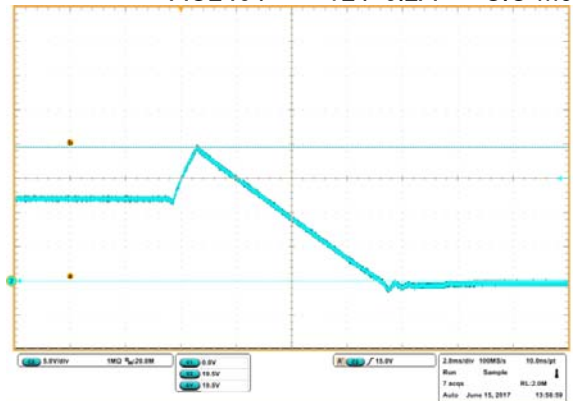
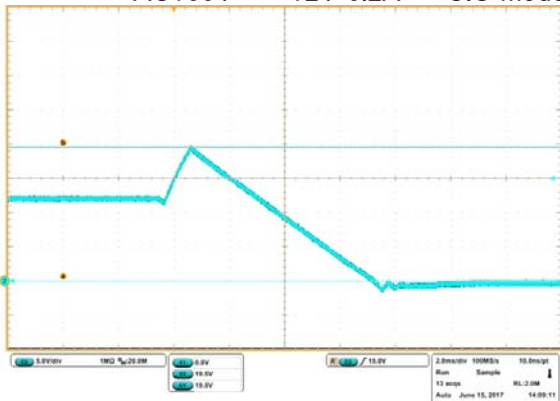
Over Voltage Protection

AC100V: 19.5V 1.2ms

AC240V: 19.5V 1.0ms

AC100V 12V 0.2A C.C mode

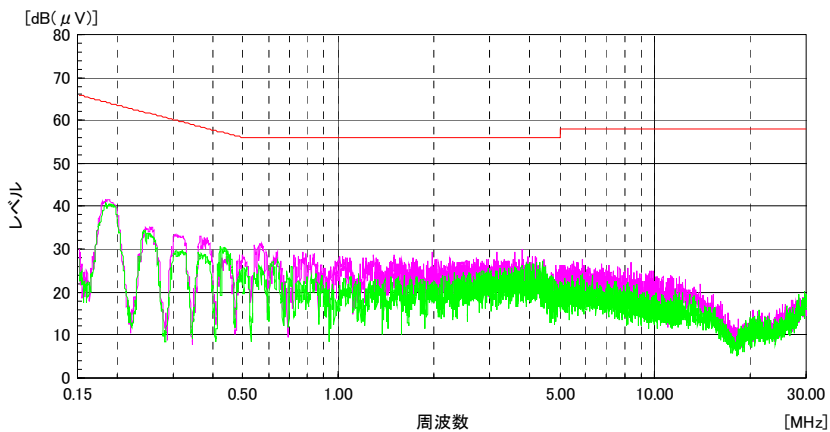
AC240V 12V 0.2A C.C mode



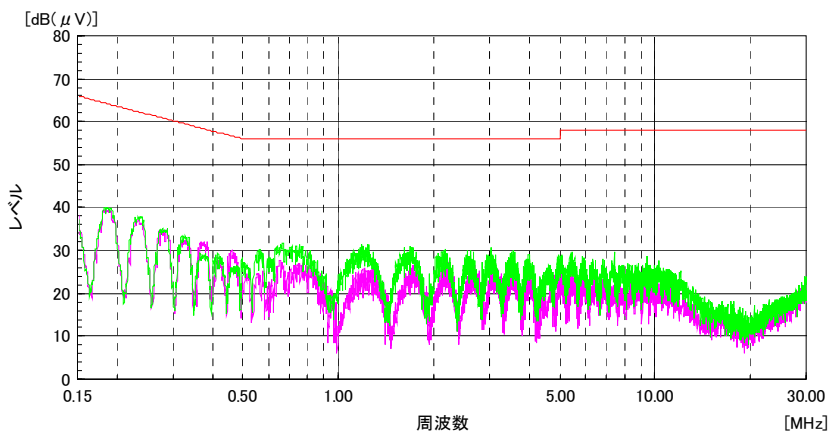
※U3 R-A short

Conducted EMI noise

input:
AC100V
output:
12V 0.42A



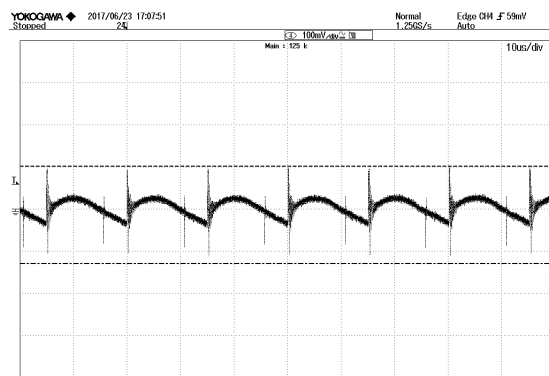
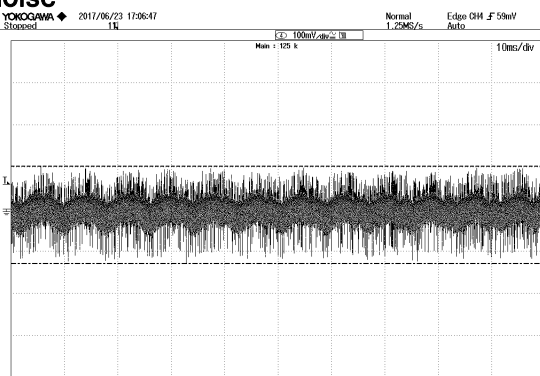
input:
AC240V
output:
12V 0.42A



Output ripple noise

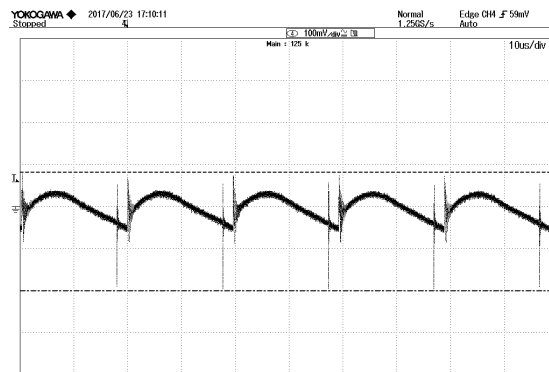
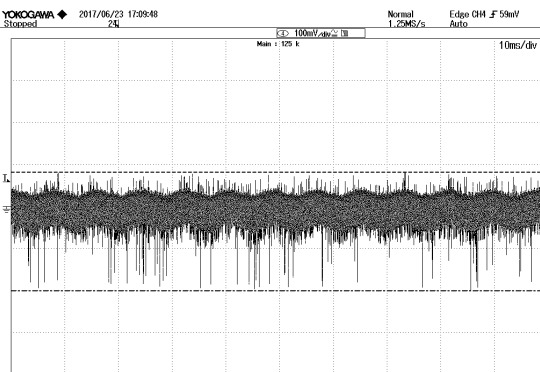
input:
AC100V
output:
12V 0.42A

Ripple Noise:
231mVp-p



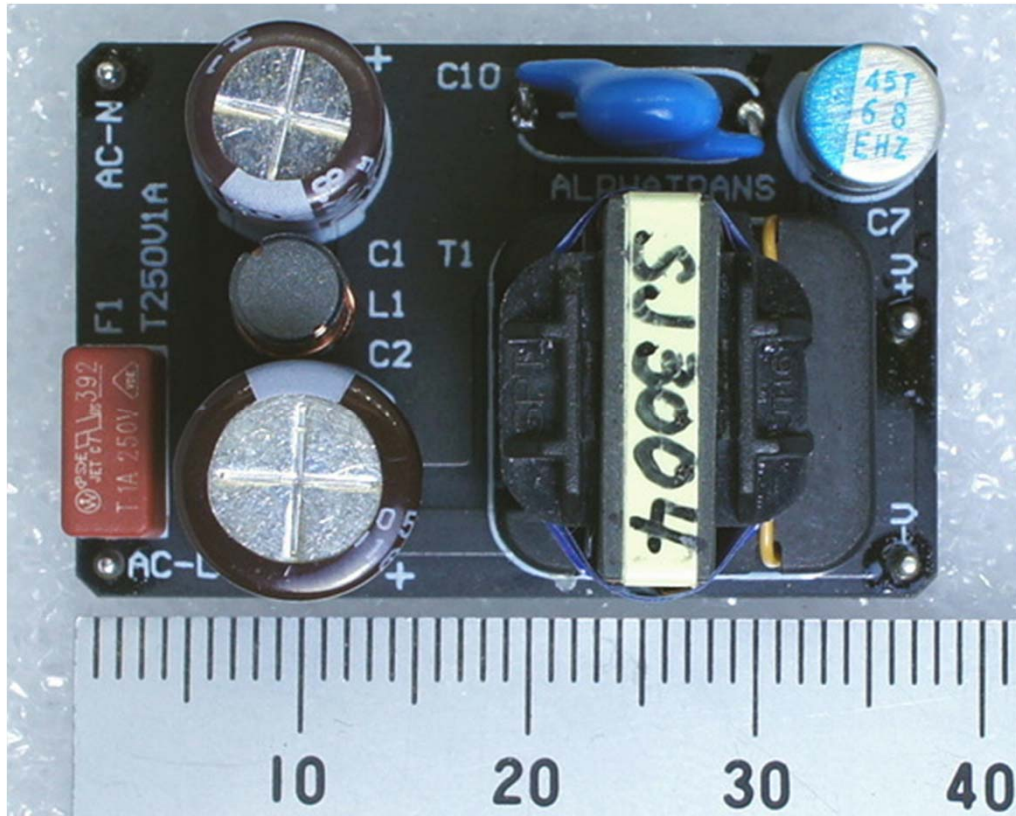
input:
AC240V
output:
12V 0.42A

Ripple Noise:
282mVp-p



Differential Probe: (DP-100 Keisoku Giken)

Test board image

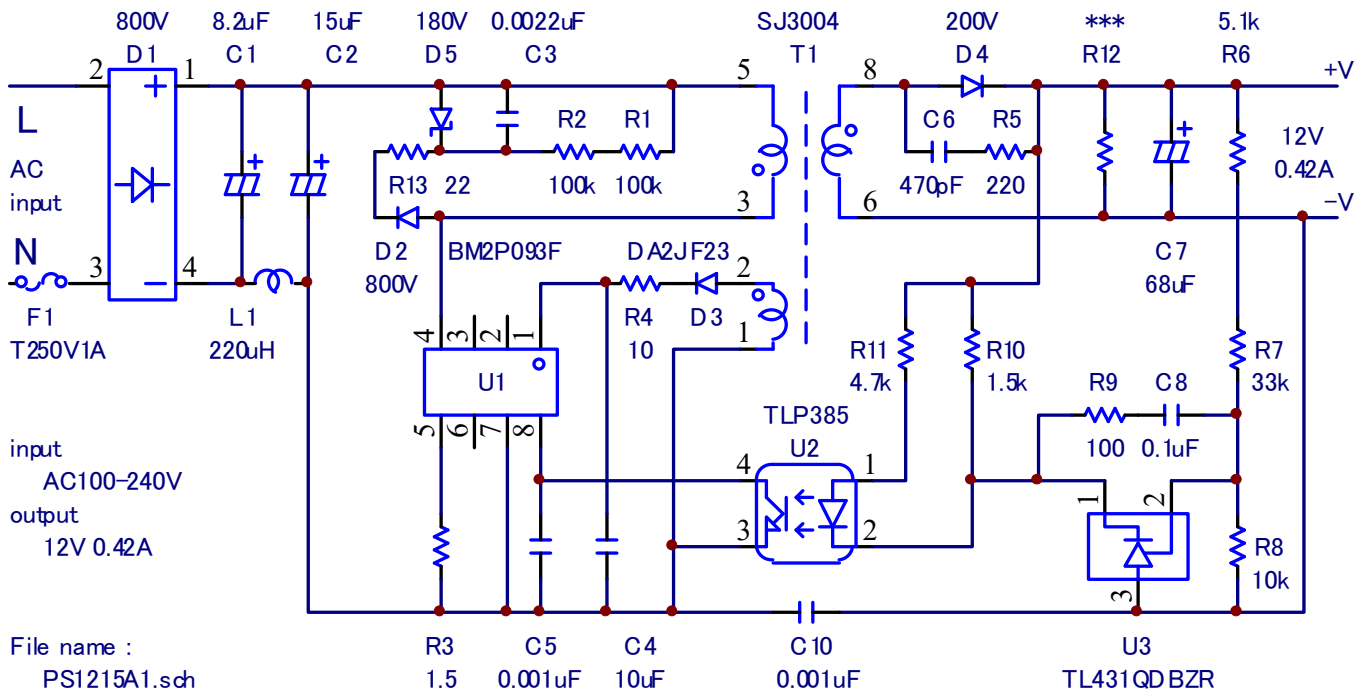


Temperature & Life

input: AC100~240V			
output: 12V 0.42A	C1	105 °C	UVC2G8R2MPD
mean temperature : 40 °C	C2	105 °C	UVC2G150MPD
max operating temperature: 50 °C	C7	105 °C	25HEHZ068MT
			2000 (hour)
			2000 (hour)
			2000 (hour)

		input AC85V (°C)	input AC100V		input AC240V		input AC264V		limit temp (°C)	max temp (°C)	margin	mean temp	40°C Life (hour)	40°C Life (Year)		
			(°C)	(ΔT)	(°C)	(ΔT)	(°C)	(ΔT)							(°C)	(ΔT)
①	Reference	(°C)	28.5	—	28.2	—	28.9	—	—	—	—					
②	D1	(°C)	46.6	18.1	43.9	15.7	41.0	12.1	41.2	12.1	150	68.1	81.9			
③	C1	(°C)	41.9	13.4	40.0	11.9	39.3	10.4	39.4	10.3	105	63.4	41.6	53.4	71506	8.2
④	L1	(°C)	46.4	18.0	44.1	16.0	43.4	14.5	43.8	14.7	120	68.0	52.1			
⑤	C2	(°C)	45.8	17.3	44.1	15.9	43.5	14.6	44.0	14.9	105	67.3	37.7	57.3	54569	6.2
⑥	D2	(°C)	53.5	25.1	51.3	23.1	51.1	22.2	51.7	22.6	150	75.1	75.0			
⑦	D5	(°C)	48.9	20.4	47.1	19.0	46.4	17.5	47.0	17.9	150	70.4	79.6			
⑧	R13	(°C)	53.9	25.5	51.3	23.2	50.9	22.0	51.6	22.5	150	75.5	74.6			
⑨	U1	(°C)	56.8	28.4	53.2	25.0	53.4	24.5	54.3	25.2	105	78.4	26.7			
⑩	T1 wire	(°C)	51.9	23.5	50.9	22.8	53.2	24.3	53.8	24.7	120	74.65	45.4			
⑪	T1 core	(°C)	52.3	23.8	51.7	23.6	54.7	25.8	55.6	26.5	120	76.45	43.6			
⑫	D4	(°C)	60.1	31.7	59.2	31.1	64.5	35.6	65.6	36.5	150	86.5	63.6			
⑬	C7	(°C)	50.8	22.3	50.0	21.9	55.6	26.7	56.5	27.4	105	77.4	27.6	67.4	27096	3.1
⑭	U3	(°C)	48.9	20.4	48.0	19.9	51.4	22.5	52.0	22.9	125	72.9	52.1			

Schematic Diagram



Parts List

REF.No	Description	TYPE	Specification	Manufacture
C1	Electrol Capacitor	UVC2G8R2MPD	8.2uF 400V 2000H ϕ 8x16.0 P=3.5	Nichicon
C2	Electrol Capacitor	UVC2G150MPD	15uF 400V 2000H ϕ 10x16.0 P=5.0	Nichicon
C3	Ceramic Capacitor	C2012JB2E222K	0.0022uF 250V B 2012	TDK
C4	Ceramic Capacitor	C2012JB1E106M	10uF 50V B 2012	TDK
C5	Ceramic Capacitor	C1608JB1H102K	0.001uF 50V B 1608	TDK
C6	Ceramic Capacitor	C1608CH2E471J	470pF 250V CH 1608	TDK
C7	Electrol Capacitor	25HEHZ068MT	68uF 25V 2000H ϕ 6.3x7.2 P=2.5	Suncon
C8	Ceramic Capacitor	C1608JB1H104K	0.1uF 50V B 1608	TDK
C10	Ceramic Capacitor	CD45-E2GA102M-NKA	0.001uF AC250V ϕ 8.5x7 P=10.0	TDK
D1	Diode Bridge	D1UBA80-7062	800V 1A	Shindengen
D2	Diode	RFU02VSM8STR	800V 0.2A TUMD2SM D2014	ROHM
D3	Diode	DA2JF23	300V 0.3A SMini2-F5-B D1712	Panasonic
D4	Diode	RF201L2S	200V 2A PMDS D4526	ROHM
D5	Zener Diode	DFLZ180	180V 1W D2818	MCC
F1	Fuse	39211000440	1A 250V T	Littelfuse
L1	Choke Coil	LF1244Y	220uH CH5011	Alphatrans
R1	Resistor	MCR10EZPJ104	100k 1/8W 150V 2012	ROHM
R2	Resistor	MCR10EZPJ104	100k 1/8W 150V 2012	ROHM
R3	Resistor	MCR10EZPJ1R5	1.5 1/8W 150V 2012	ROHM
R4	Resistor	MCR03EZPJ100	10 1/10W 50V 1608	ROHM
R5	Resistor	MCR10EZPJ221	220 1/8W 150V 2012	ROHM
R6	Resistor	MCR03EZPFX5101	5.1k 1/10W 50V 1% 1608	ROHM
R7	Resistor	MCR03EZPFX3302	33k 1/10W 50V 1% 1608	ROHM
R8	Resistor	MCR03EZPFX1002	10k 1/10W 50V 1% 1608	ROHM
R9	Resistor	MCR03EZPJ101	100 1/10W 50V 1608	ROHM
R10	Resistor	MCR03EZPJ152	1.5k 1/10W 50V 1608	ROHM
R11	Resistor	MCR03EZPJ472	4.7k 1/10W 50V 1608	ROHM
R12	***	***	*** 3216	***
R13	Resistor	MCR10EZPJ220	22 1/8W 150V 2012	ROHM
T1	Transformer	JT0512R-2P	SJ3004A JT16	Alphatrans
U1	IC	BM2P093F	650V SOP8	ROHM
U2	Optical	TLP385 (GR)	5000V SOP4 8mm	Toshiba
U3	Shunt Reg.	TL431QDBZR	2.495V 2% SOT23-3	Texas Instruments
	PCB	PW1135A	FR-4 t=1.0	
	Terminal	DC-5		マックエイト