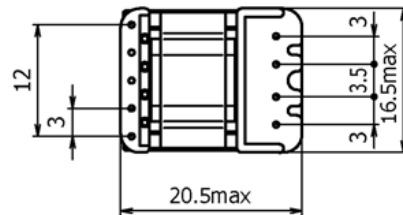
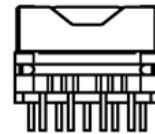
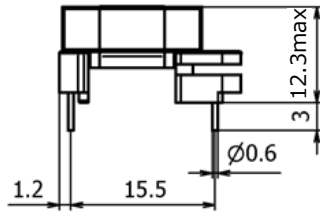
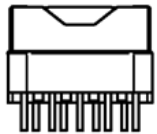
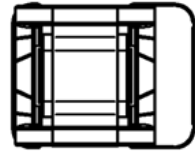
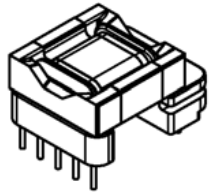


PN : GT0512R-2P

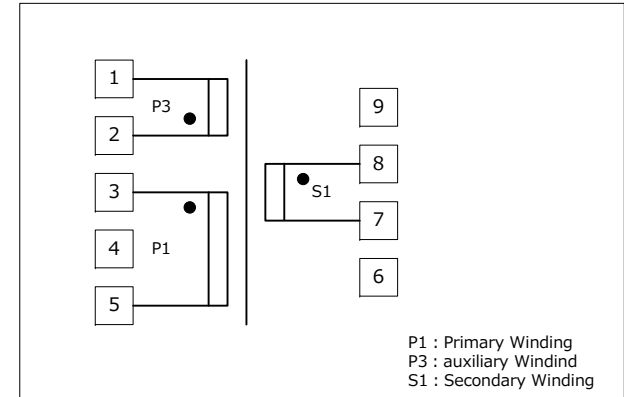


RoHS compliant

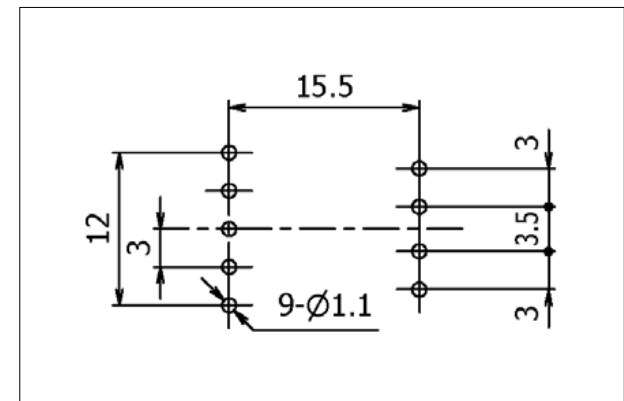


Bobbin : GT15
Ferrite core : EED15

Dimensions



Schematics (Top View)



Recommended PCB hole size (Bottom view)

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



TEST REPORT

Product Name	Test Board
Product Number	EVA-GT0512R-2P
Design Number	PS1195A
Sheet Number	
Date	2017/6/19

Meet Safety Standards
IEC 60950 PSE

Specification

Trans type : GT15

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 : 380mVp-p typ (AC100V) 556mVp-p typ (AC240V)

Standby power : 0.07W typ (AC100V) 0.08W typ (AC240V)

Efficiency : 75.5% (AC100V) 76.1% (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 : 43.0 × 23.0 × 12.0 (mm)

Weight : 12.0g

Alphatrans co., ltd.

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

541-0059 Japan

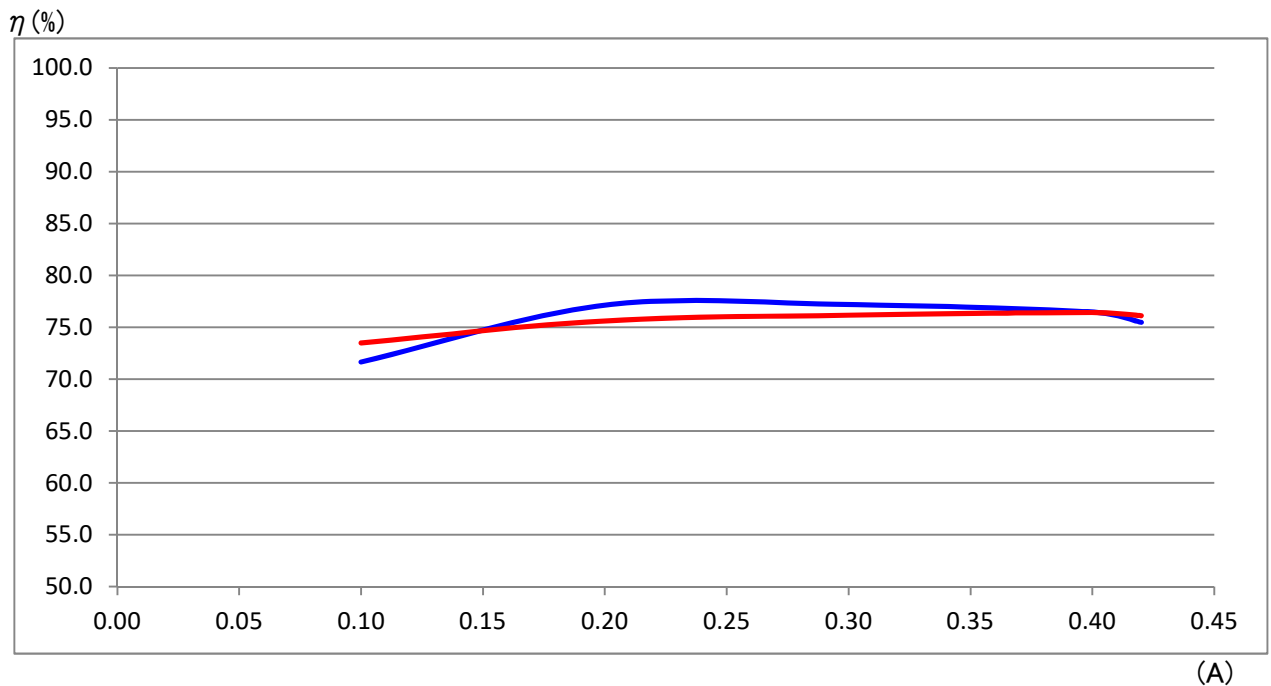
TEL (06) 6252-8839 FAX (06) 6252-3939

<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	11.995	0.00	16.19	2.45	0.064	0.000	0.064	0.0
100	11.994	0.10	18.58	38.50	1.674	1.199	0.475	71.6
100	11.993	0.20	18.58	63.07	3.110	2.399	0.711	77.1
100	11.990	0.30	18.63	88.03	4.660	3.597	1.063	77.2
100	11.988	0.40	18.73	112.94	6.271	4.795	1.476	76.5
100	11.986	0.42	18.76	119.10	6.670	5.034	1.636	75.5
240	11.993	0.00	15.93	1.10	0.089	0.000	0.089	0.0
240	11.994	0.10	18.77	23.98	1.632	1.199	0.433	73.5
240	11.993	0.20	18.90	40.02	3.172	2.399	0.773	75.6
240	11.991	0.30	18.96	54.78	4.723	3.597	1.126	76.2
240	11.989	0.40	19.00	67.24	6.276	4.796	1.480	76.4
240	11.986	0.42	19.02	70.21	6.614	5.034	1.580	76.1



Over Current Protection

AC100V: 0.54A

AC240V: 0.64A

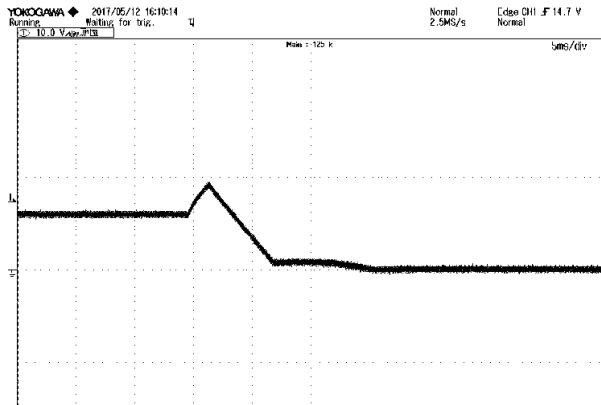
Over Voltage Protection

AC100V: 19V 1.7ms

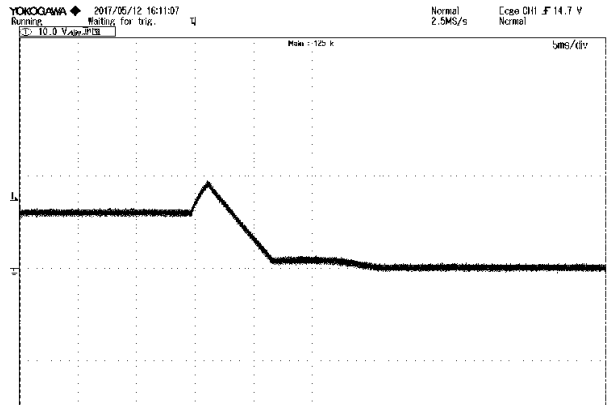
AC240V: 19V 1.5ms

AC100V 12V 0.2A C.C mode

AC240V 12V 0.2A C.C mode



Max(C1) 19.2 V Min(C1) -1.2 V Rms(C1) 8.01687 V Freq(C1) *****

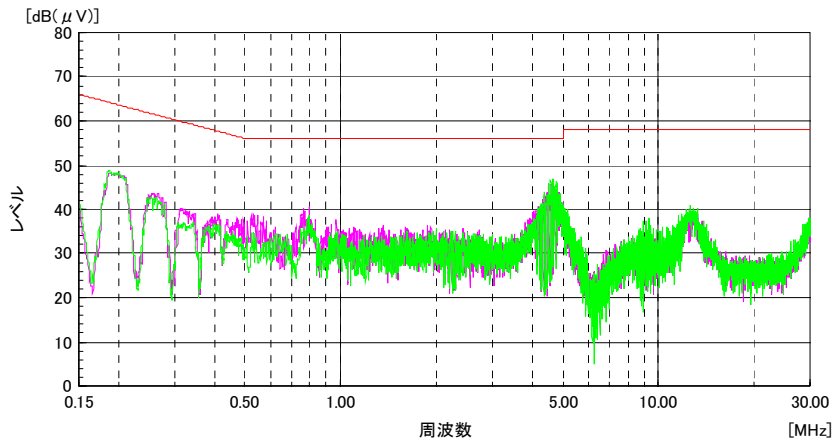


Max(C1) 19.1 V Min(C1) -1.1 V Rms(C1) 7.94894 V Freq(C1) *****

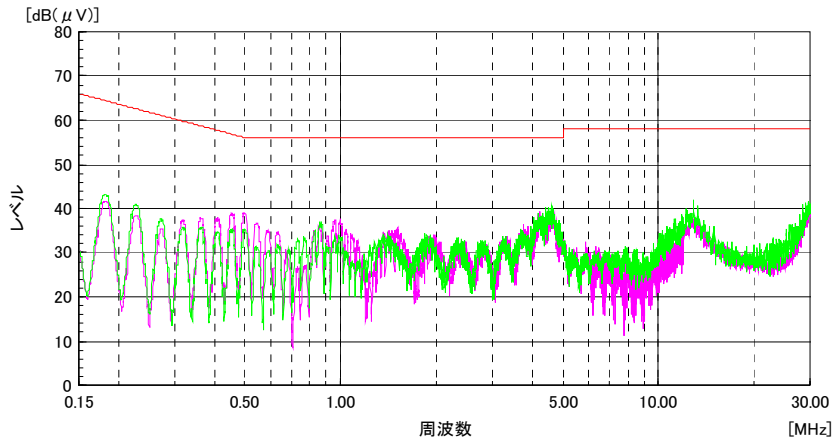
※U3 R-A short

Conducted EMI noise

input:
AC100V
output:
12V 0.42A

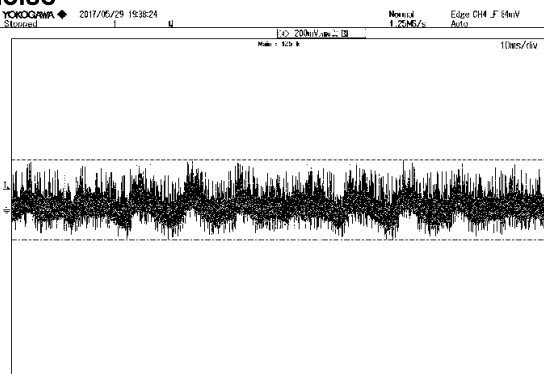


input:
AC240V
output:
12V 0.42A

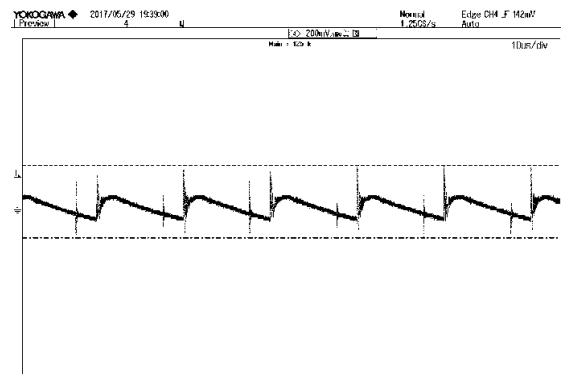


Output ripple noise

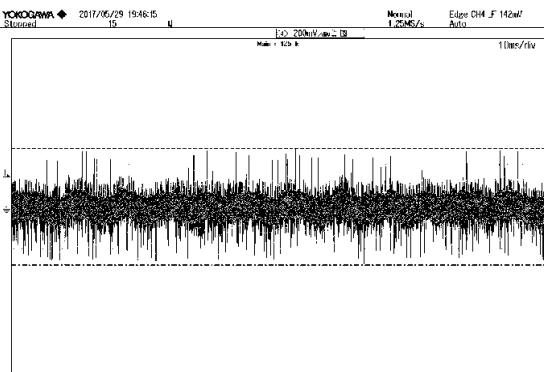
input:
AC100V
output:
12V 0.42A



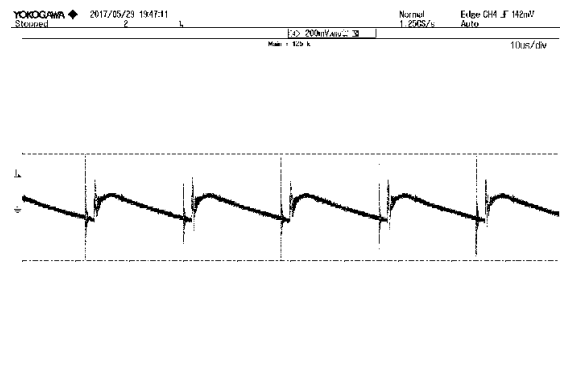
Ripple Noise:
380mVp-p



input:
AC240V
output:
12V 0.42A

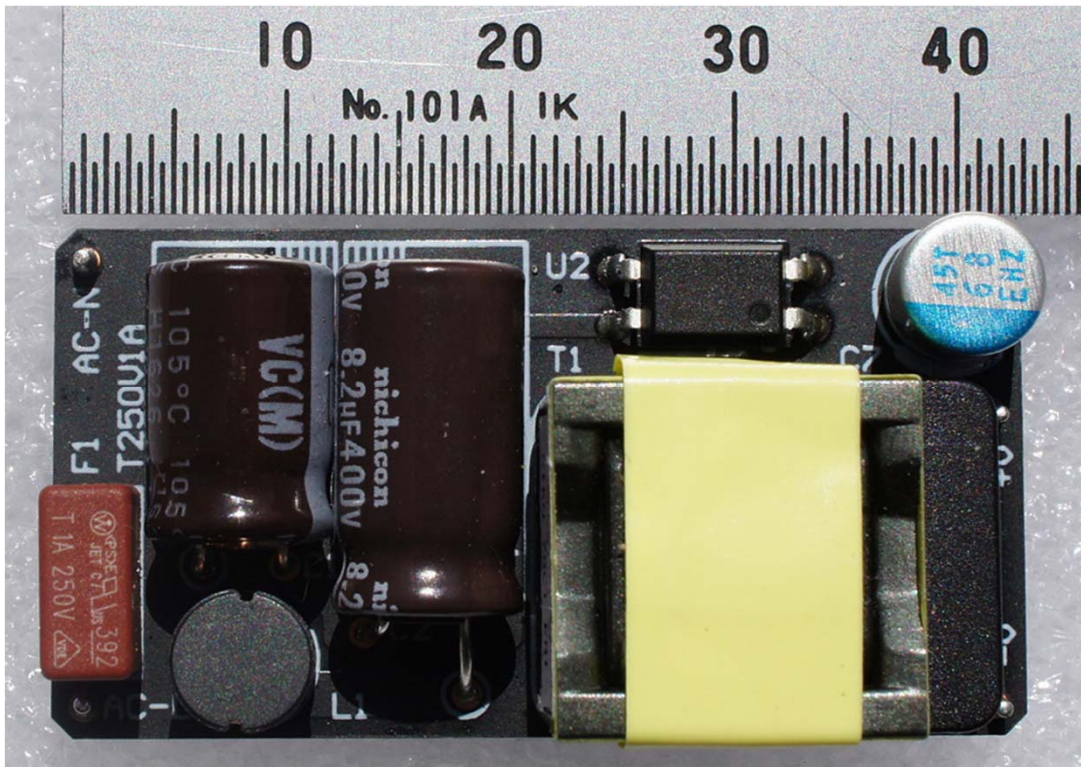


Ripple Noise:
556mVp-p



Differential Probe: (DP-100 Keisoku Giken)

Test board image



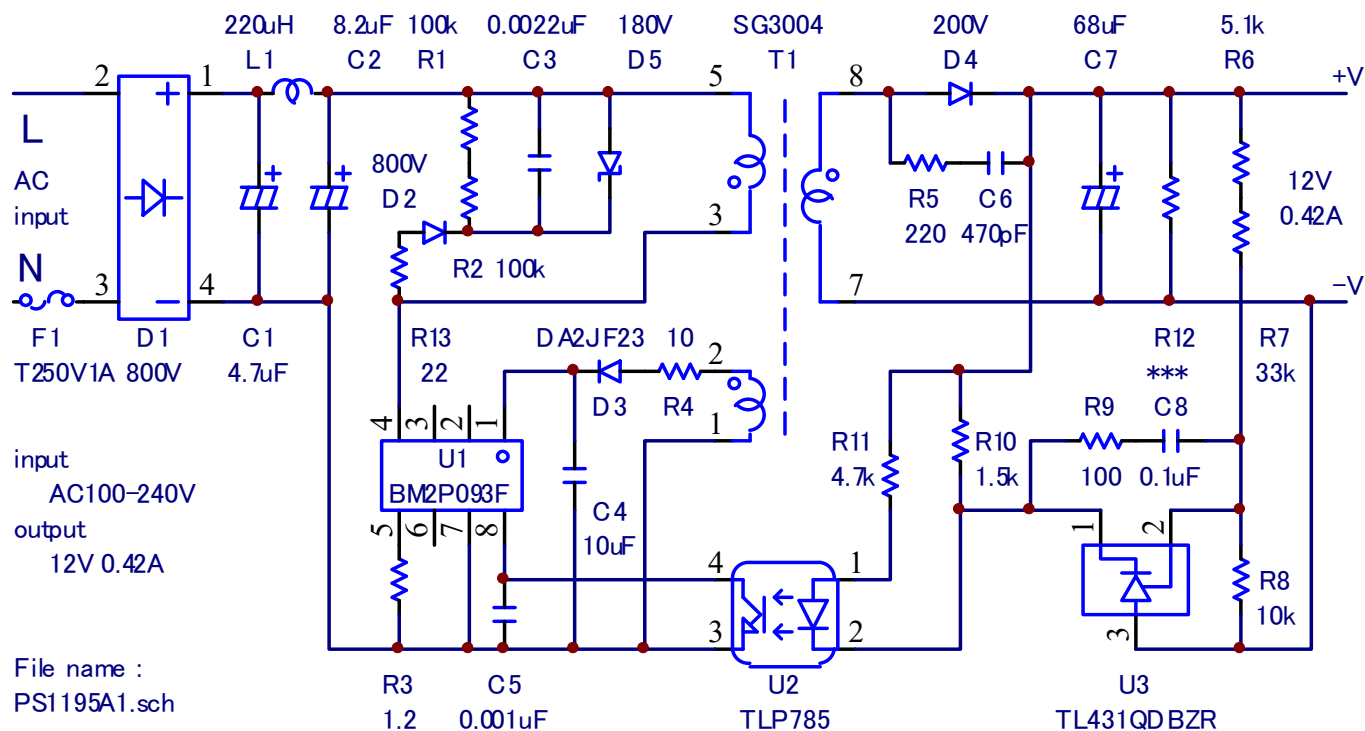
Temperature & Life

input: AC100~240V
 output: 12V 0.42A
 mean temperature : 40 °C
 max operating temperature: 50 °C

C1	105 °C	UVC2G4R7MPD	2000 (hour)
C2	105 °C	UVC2G8R2MPD	2000 (hour)
C7	105 °C	25HEHZ068MT	2000 (hour)

		input AC85V		input AC100V		input AC240V		input AC264V		limit temp	max temp	margin	mean temp	40°C Life (hour)	40°C Life (Year)	
		(°C)	(ΔT)	(°C)	(ΔT)	(°C)	(ΔT)	(°C)	(ΔT)	(°C)	(°C)					
①	Reference	(°C)	27.8	—	28.1	—	28.6	—	29.3	—	—	—				
②	L1	(°C)	58.8	31.0	56.8	28.7	54.6	26.0	55.1	25.7	120	81.0	39.1			
③	D1	(°C)	57.3	29.5	54.2	26.2	49.4	20.8	50.2	20.9	150	79.5	70.5			
④	C1	(°C)	54.9	27.1	52.8	24.7	50.4	21.8	51.1	21.7	105	77.1	27.9	67.1	27684	3.2
⑤	C2	(°C)	59.6	31.8	54.2	26.2	52.7	24.1	53.1	23.8	105	81.8	23.2	71.8	19946	2.3
⑥	D2	(°C)	75.5	47.7	72.3	44.2	69.5	40.8	70.3	40.9	150	97.7	52.3			
⑦	D5	(°C)	75.7	47.9	73.1	45.0	72.5	43.9	73.1	43.8	150	97.9	52.1			
⑧	R13	(°C)	71.7	43.9	67.9	39.8	64.8	36.2	65.8	36.4	150	93.9	56.2			
⑨	U1	(°C)	76.2	48.4	70.7	42.7	65.1	36.4	66.2	36.8	105	98.4	6.6			
⑩	T1 wire	(°C)	67.1	39.3	65.5	37.4	66.9	38.2	67.7	38.3	120	89.3	30.7			
⑪	T1 core	(°C)	59.3	31.5	58.1	30.1	59.3	30.7	60.2	30.8	120	81.5	38.5			
⑫	D4	(°C)	66.8	38.9	66.3	38.2	68.4	39.7	69.3	40.0	150	90.0	60.1			
⑬	C7	(°C)	54.9	27.0	54.4	26.3	55.9	27.2	56.9	27.5	105	77.5	27.5	67.5	26890	3.1
⑭	U3	(°C)	52.1	24.3	51.4	23.3	52.3	23.7	53.7	24.4	125	74.4	50.6			

Schematic Diagram



Parts List

REF.No	Description	TYPE	Specification			Manufacture	
C1	Electrol Capacitor	UVC2G4R7MPD	4.7uF	400V	2000H	ϕ 8x11.5 P=3.5	Nichicon
C2	Electrol Capacitor	UVC2G8R2MPD	8.2uF	400V	2000H	ϕ 8x16.0 P=3.5	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
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	LF1227Y	220uH		RCH664NP-221K	DR6.2 x 6.3	Alphatrans
R1	Resistor	MCR10EZPJ104	100k	1/8W	150V	2012	ROHM
R2	Resistor	MCR10EZPJ104	100k	1/8W	150V	2012	ROHM
R3	Resistor	MCR10EZPJ1R2	1.2	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	GT0512R-2P	SG3004A			GT15B	Alphatrans
U1	IC	BM2P093F	650V			SOP8	ROHM
U2	Optical	TLP785 GR	5000V				Toshiba
U3	Shunt Reg.	TL431QDBZR	2.495V 2%			SOT23-3	Texas Instruments
	PCB	PW1120D	FR-4	t=1.0			
	Terminal	DC-5					マックエイト