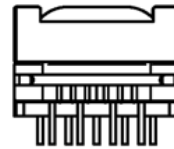
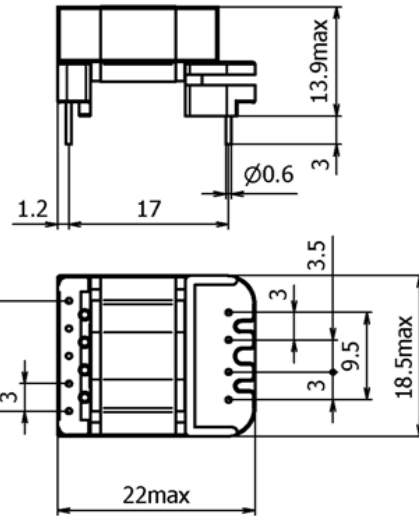
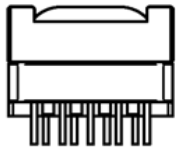
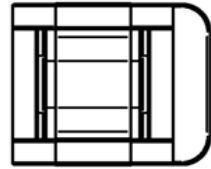
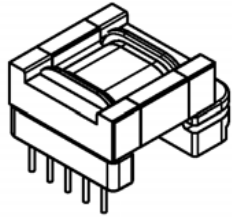


PN : GT1012P-TN

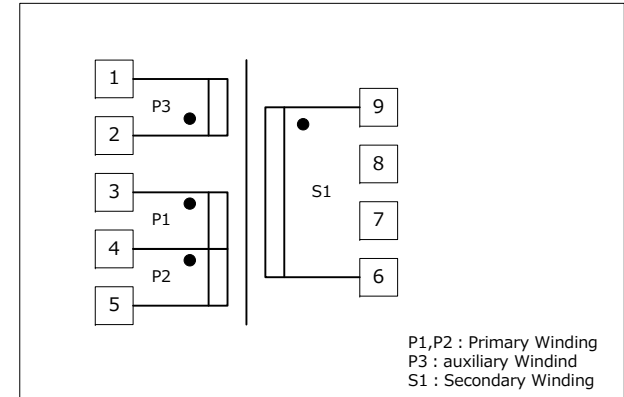


RoHS compliant

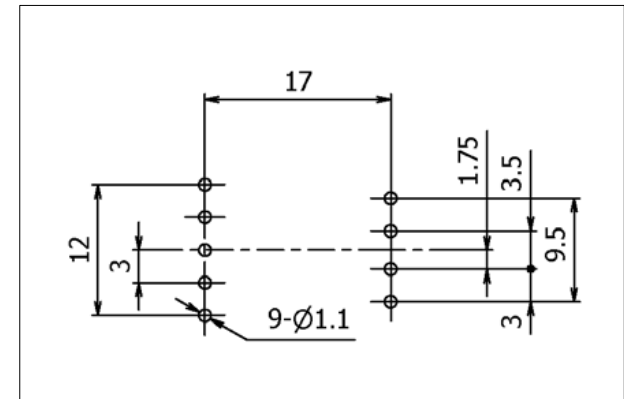


Bobbin : GT17
Ferrite core : EED17

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-GT1012P-TN
Design Number	PS1200B
Sheet Number	
Date	2017/6/19

Meet Safety Standards
IEC 60950 PSE

Specification

Trans type : GT17

IC name : TNY286KG (Power Integrations)

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

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

Output power : 10W

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

Output current : 0.85A

Ripple noise : 673mVp-p typ (AC100V) 942mVp-p typ (AC240V)

Standby power : 0.07W typ (AC100V) 0.20W typ (AC240V)

Efficiency : 82.1% (AC100V) 84.7% (AC240V)

Over load protect : Auto restart

Over voltage protect : Latch

Over temperature protect : 142°C (typ)

Operating temperature : -10°C ~ +50°C

Storage temperature : -30°C ~ +85°C

Hi-pot test : 3000V 1min.

Dimensions : 66.0 × 30.0 × 13.0 (mm)

Weight : 26.6g

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/>

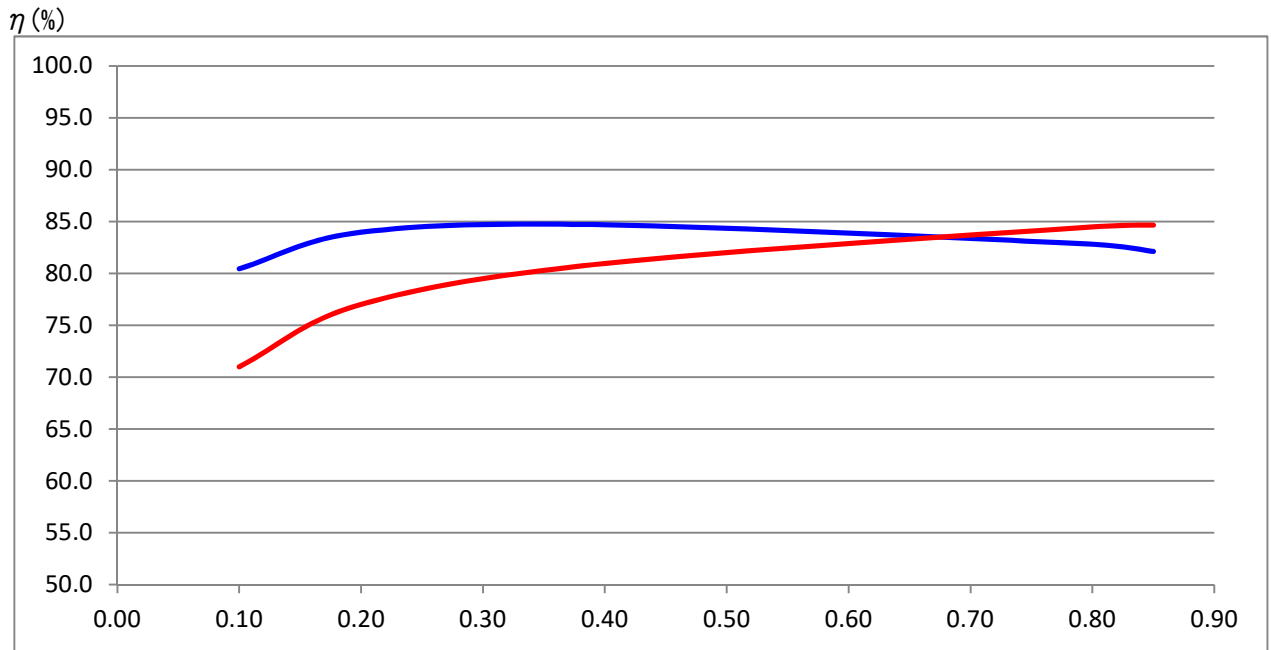
Approve	Check	Drawn
T.Hagimoto	E .Fujishita	M .Omori

Load Regulation

C7: 470uF → OS CON 330uF

D6パラに33kΩ追加

AC in (V)	12V (V)	12V (A)	Bias (V)	I in (mA)	P in (W)	P out (W)	P loss (W)	η (%)
100	11.914	0.00	16.51	3.46	0.073	0.000	0.073	0.0
100	11.914	0.10	17.89	37.06	1.481	1.191	0.290	80.4
100	11.914	0.20	18.43	63.22	2.838	2.383	0.455	84.0
100	11.913	0.40	19.53	110.65	5.627	4.765	0.862	84.7
100	11.912	0.80	22.11	200.32	11.508	9.530	1.978	82.8
100	11.910	0.85	22.84	212.05	12.329	10.124	2.206	82.1
240	11.913	0.00	16.39	6.96	0.203	0.000	0.203	0.0
240	11.913	0.10	17.96	23.49	1.678	1.191	0.487	71.0
240	11.913	0.20	18.32	38.93	3.094	2.383	0.711	77.0
240	11.913	0.40	18.88	65.71	5.886	4.765	1.121	81.0
240	11.912	0.80	21.36	112.24	11.280	9.530	1.750	84.5
240	11.911	0.85	21.51	117.65	11.960	10.124	1.836	84.7



(A)

Over Current Protection

AC100V: 1.05A

AC240V: 1.30A

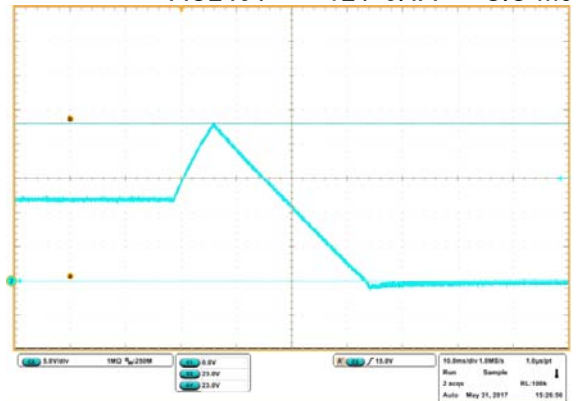
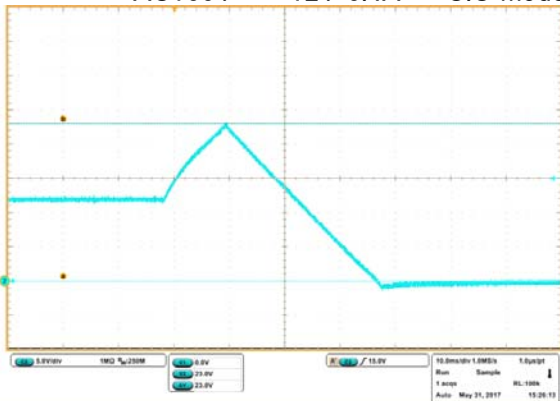
Over Voltage Protection

AC100V: 23V 12ms

AC240V: 23V 8ms

AC100V 12V 0.4A C.C mode

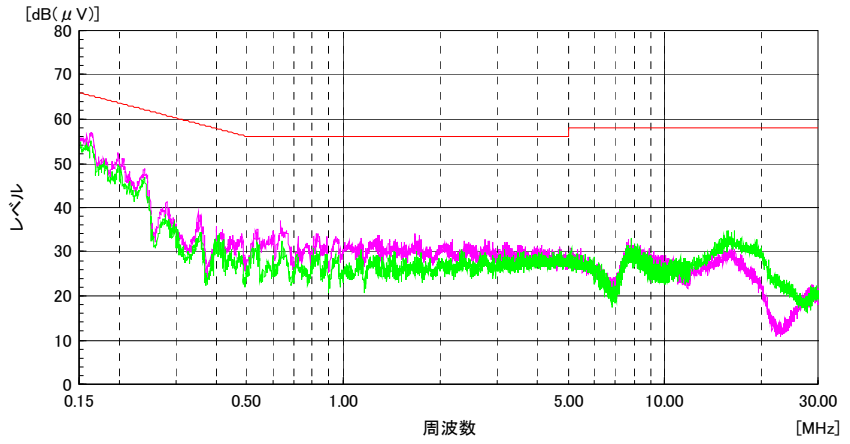
AC240V 12V 0.4A C.C mode



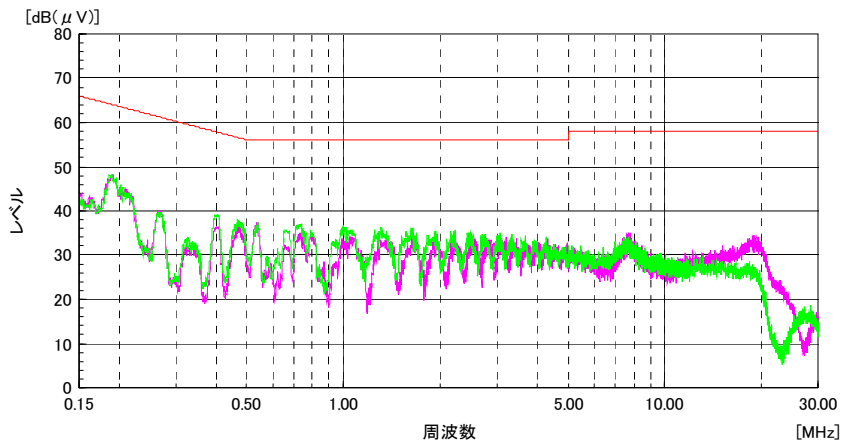
※U3 R-A short

Conducted EMI noise

input:
AC100V
output:
12V 0.85A

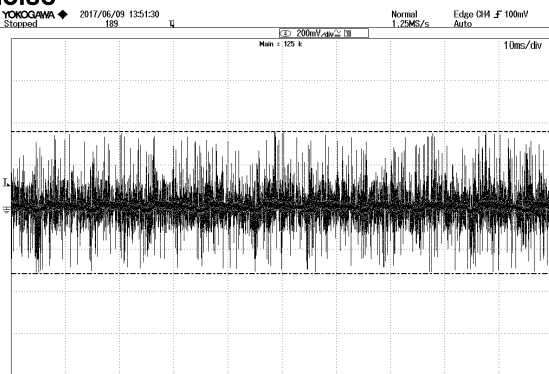


input:
AC240V
output:
12V 0.85A

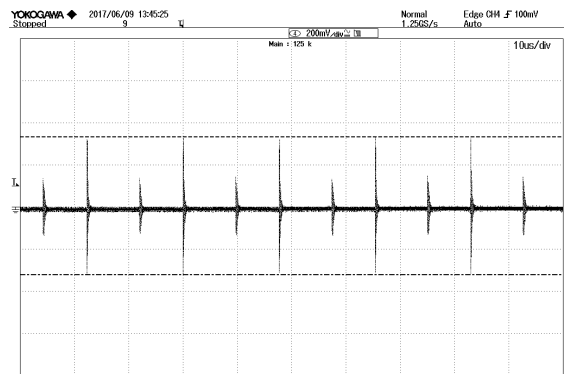


Output ripple noise

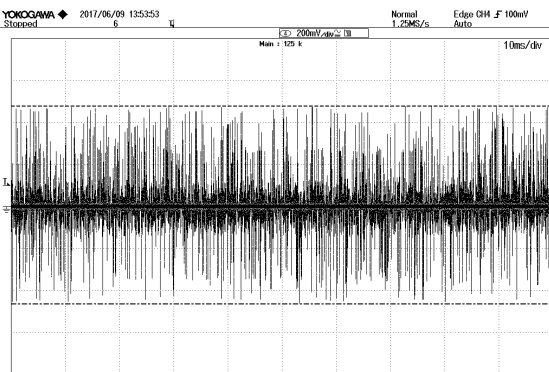
input:
AC100V
output:
12V 0.85A



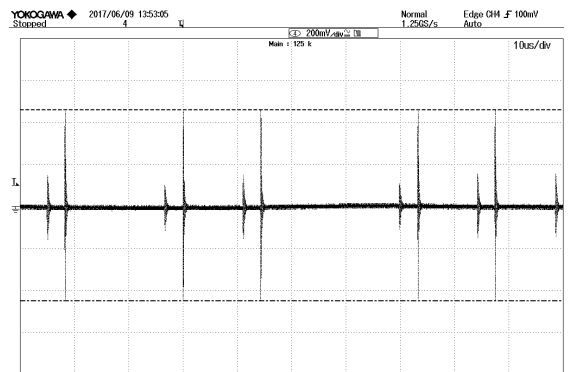
Ripple Noise:
673 mVp-p



input:
AC240V
output:
12V 0.85A

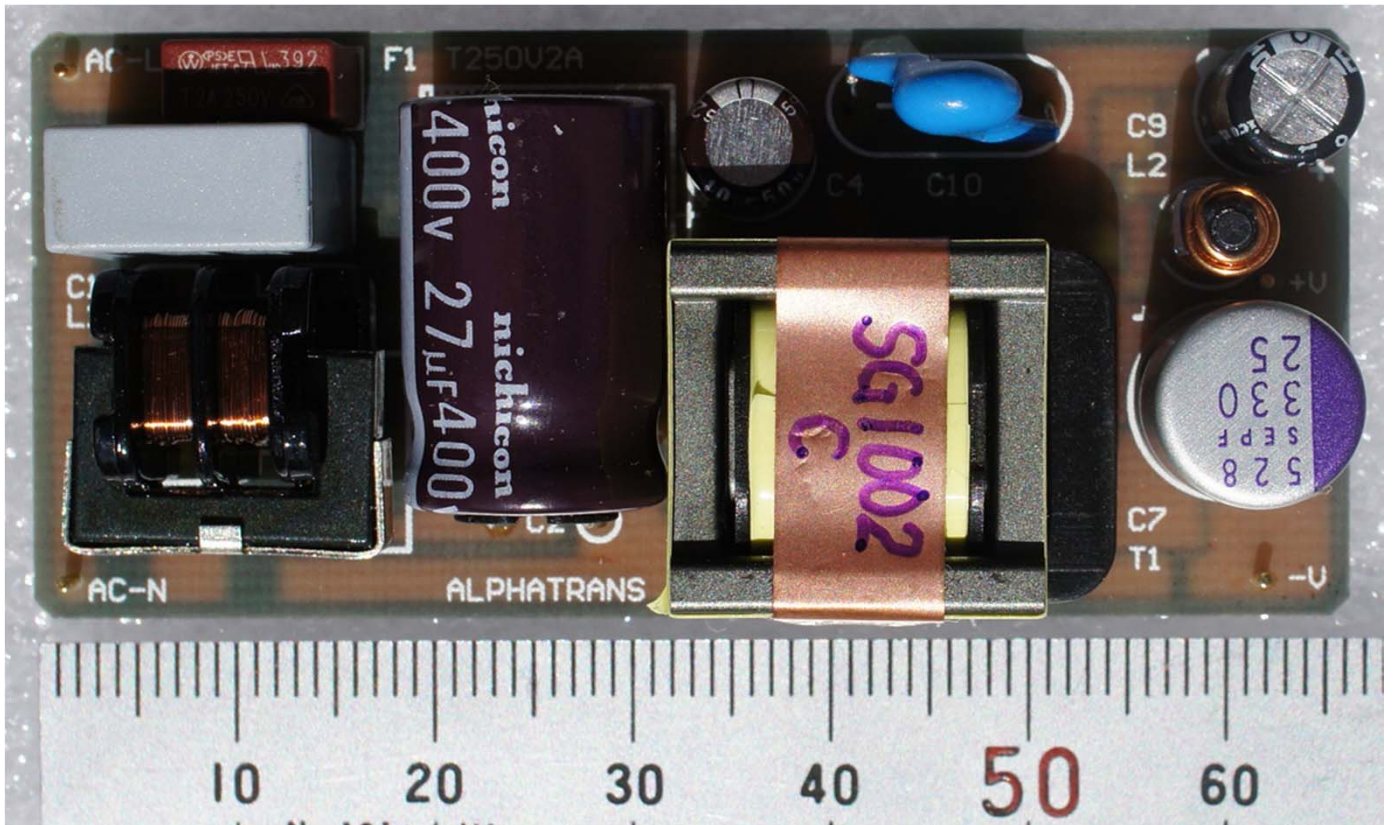


Ripple Noise:
942 mVp-p



Differential Probe: (DP-100 Keisoku Giken)

Test board image



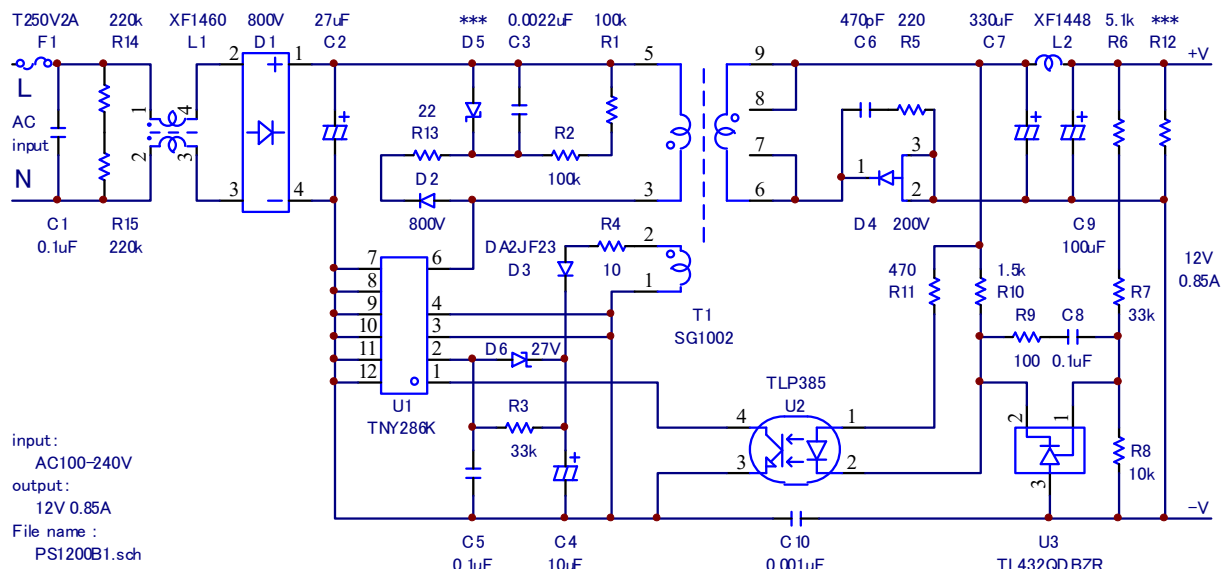
Temperature & Life

input: AC100~240V
 output: 12V 0.85A
 mean temperature : 40 °C
 max operating temperature: 50 °C

C2	105 °C	UCY2G270MHD	12000 (hour)
C4	105 °C	USV1H100MFD	5000 (hour)
C7	105 °C	UHE1E471MPD6	7000 (hour)
C9	105 °C	UHE1E101MED	5000 (hour)

		input	input	input	input	limit	max		mean	40°C	40°C					
		AC85V	AC100V	AC240V	AC264V	temp	temp	margin	temp	Life	Life					
		(°C)	(ΔT)	(°C)	(ΔT)	(°C)	(°C)		(°C)	(hour)	(Year)					
①	Reference	(°C)	28.2	—	29.3	—	29.7	—	30.6	—	—					
②	L1	(°C)	88.0	59.8	74.9	45.6	53.9	24.2	55.8	25.2	120	109.8	10.3			
③	D1	(°C)	80.4	52.2	70.8	41.5	54.3	24.7	55.5	24.9	150	102.2	47.8			
④	C2	(°C)	68.0	39.8	61.3	32.0	52.2	22.5	54.3	23.7	105	89.8	15.2	79.8	68830	7.9
⑤	R13	(°C)	75.1	46.9	69.3	40.0	63.0	33.4	65.2	34.6	155	96.9	58.1			
⑥	D2	(°C)	77.5	49.3	70.4	41.1	62.8	33.1	65.1	34.5	150	99.3	50.8			
⑦	C4	(°C)	67.4	39.2	60.3	31.0	51.8	22.1	53.7	23.1	105	89.2	15.8	79.2	29897	3.4
⑧	U1	(°C)	95.5	67.3	79.5	50.2	62.0	32.4	64.6	34.0	135	117.3	17.7			
⑨	T1 wire	(°C)	75.8	47.6	70.5	41.2	67.4	37.8	69.4	38.8	120	97.6	22.4			
⑩	T1 core	(°C)	74.8	46.6	69.9	40.6	65.2	35.6	67.4	36.8	120	96.6	23.4			
⑪	D4	(°C)	81.0	52.8	79.8	50.5	79.5	49.9	81.2	50.6	175	102.8	72.3			
⑫	C7	(°C)	59.9	31.7	59.1	29.8	58.7	29.0	59.8	29.2	105	81.7	23.3	69.0	84880	9.7
⑬	L2	(°C)	50.9	22.7	50.5	21.2	49.4	19.7	51.2	20.6	120	72.7	47.4			
⑭	C9	(°C)	42.2	14.0	42.2	12.9	41.3	11.7	42.4	11.8	105	64.0	41.1	51.7	201820	23.0
⑮	U3	(°C)	46.9	18.7	46.5	17.2	44.8	15.1	46.2	15.6	125	68.7	56.4			

Schematic Diagram



Parts List

REF.No	Description	TYPE	Specification	Manufacture
C1	Film Capacitor	BFC233920104	0.1uF AC310V 12.5x6.0 P=10.0	Vishay
C2	Electrol Capacitor	UCY2G270MHD	27uF 400V 12000H φ 12.5x20 P=5.0	Nichicon
C3	Ceramic Capacitor	C3216JB2E222K	0.0022uF 250V B 3216	TDK
C4	Electrol Capacitor	USV1H100MFD	10uF 50V 5000H φ 6.3x7 P=2.5	Nichicon
C5	Ceramic Capacitor	C1608JB1H104K	0.1uF 50V B 1608	TDK
C6	Ceramic Capacitor	C1608CH2E471J	470pF 250V CH 1608	TDK
C7	Electrol Capacitor	25HEHZ330MT	330uF 25V 5000H φ 10x11.5 P=5.0	Suncon
C8	Ceramic Capacitor	C1608JB1H104K	0.1uF 50V B 1608	TDK
C9	Electrol Capacitor	UHE1E101MED	100uF 25V 5000H φ 6.3x11 P=2.5	Nichicon
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	VS-6ESH02-M3	200V 6A TO-277A	Vishay
D5	***	***	D2818	***
D6	Zener Diode	TDZTR30	30V 0.5W TUMD2 D1913	ROHM
F1	Fuse	39212000000	2A 250V T 8.5x4 P=5.08	Littelfuse
L1	Line Filter	XF1460 (UF9.8H-203)	20mH UF9.8H	AlphaTrans
L2	Choke Coil	XF1448	BCVW	Alphatrans
R1	Resistor	MCR18EZPJ104	100k 1/4W 200V 3216	ROHM
R2	Resistor	MCR18EZPJ104	100k 1/4W 200V 3216	ROHM
R3	Resistor	MCR03EZPJ333	33k 1/10W 50V 1608	ROHM
R4	Resistor	MCR03EZPJ100	10 1/10W 50V 1608	ROHM
R5	Resistor	MCR18EZPJ221	220 1/4W 200V 3216	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	MCR18EZPJ471	470 1/4W 200V 3216	ROHM
R12	***	***	3216	***
R13	Resistor	MCR18EZPJ220	22 1/4W 200V 3216	ROHM
R14	Resistor	MCR18EZPJ224	220k 1/4W 200V 3216	ROHM
R15	Resistor	MCR18EZPJ224	220k 1/4W 200V 3216	ROHM
T1	Transformer	GT1012P-TN	SG1002C GT17	Alphatrans
U1	IC	TNY286KG	725V eSOP-12B	Power Integrations
U2	Optical	TLP385 (GR)	5000V SOP4 8mm	Toshiba
U3	Shunt Reg.	TL432QDBZR	2.495V 2% SOT23-3	Texas Instruments
	PCB	PW1130B	FR-4 t=1.0	
	Terminal	DC-5		マックエイト