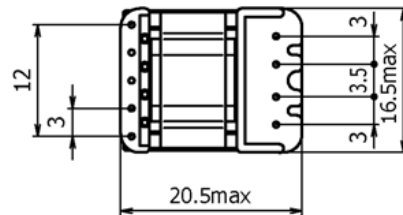
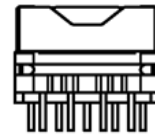
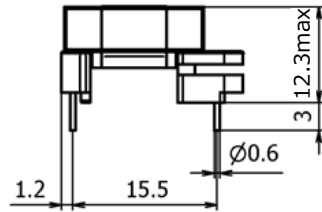
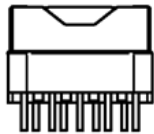
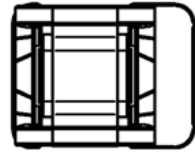
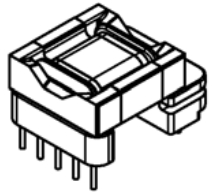


PN : GT0512P-TN

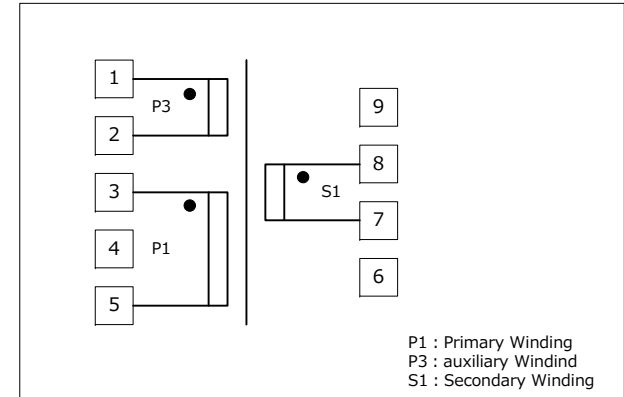


RoHS compliant

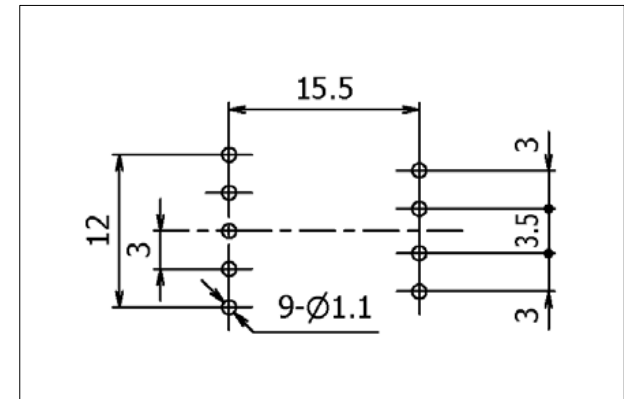


Bobbin : GT15
Ferrite core : EED15

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-GT0512P-TN
Design Number	PS1213B
Sheet Number	
Date	2017/6/19

Meet Safety Standards
IEC 60950 PSE

Specification

Trans type : GT15

IC name : TNY284D (Power Integrations)

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 : 327mVp-p typ (AC100V) 270mVp-p typ (AC240V)

Standby power : 0.09W typ (AC100V) 0.12W typ (AC240V)

Efficiency : 79.1% (AC100V) 81.3% (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 : 43.0 × 23.0 × 12.0 (mm)

Weight : 12.9g

Alphatrans co., ltd.

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

541-0059 Japan

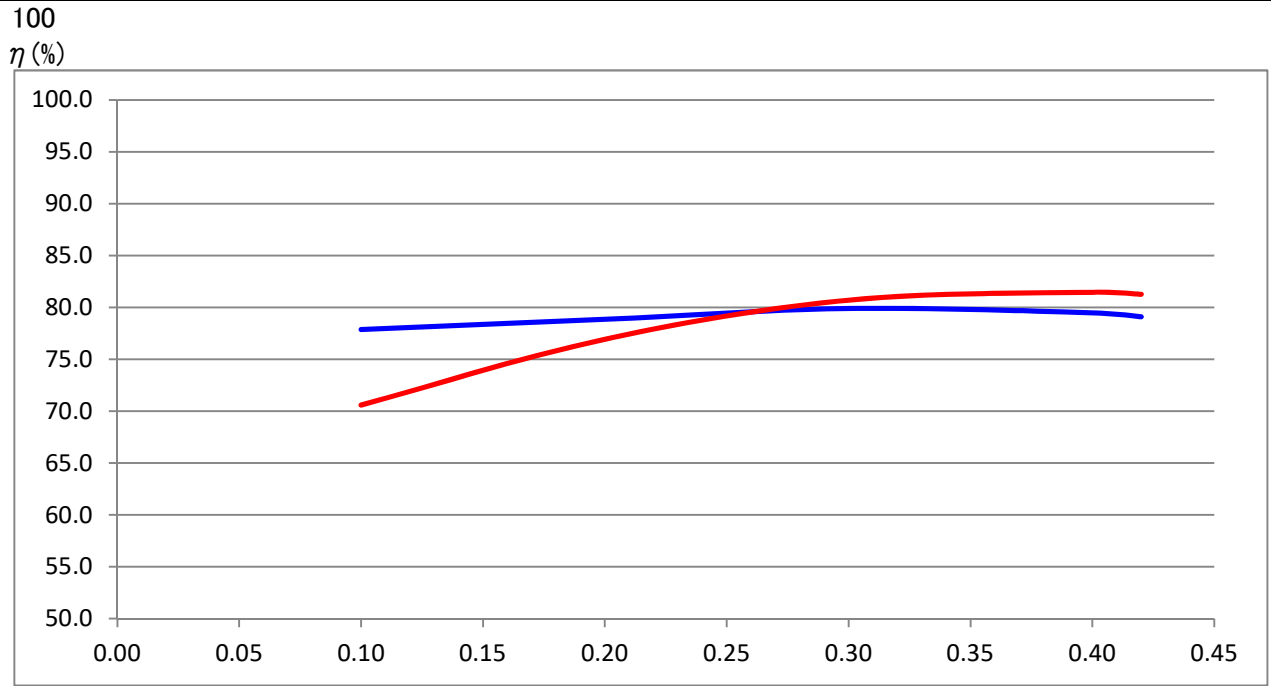
TEL (06) 6252-8839 FAX (06) 6252-3939

<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	11.859	0.00	18.10	3.54	0.089	0.000	0.089	0.0
100	11.859	0.10	19.95	36.56	1.523	1.186	0.337	77.9
100	11.859	0.20	22.40	62.09	3.008	2.372	0.636	78.8
100	11.859	0.30	23.50	85.55	4.453	3.558	0.895	79.9
100	11.858	0.40	24.60	108.60	5.968	4.743	1.225	79.5
100	11.858	0.42	24.88	113.97	6.297	4.980	1.317	79.1
240	11.860	0.00	18.15	1.63	0.116	0.000	0.116	0.0
240	11.859	0.10	19.58	24.91	1.680	1.186	0.494	70.6
240	11.859	0.20	20.91	39.45	3.083	2.372	0.711	76.9
240	11.859	0.30	23.13	52.45	4.408	3.558	0.850	80.7
240	11.858	0.40	23.99	63.46	5.823	4.743	1.080	81.5
240	11.858	0.42	24.15	66.10	6.129	4.980	1.149	81.3



(A)

Over Current Protection

AC100V: 0.64A

AC240V: 0.77A

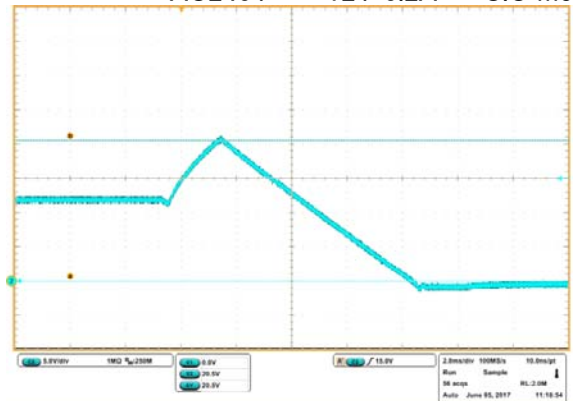
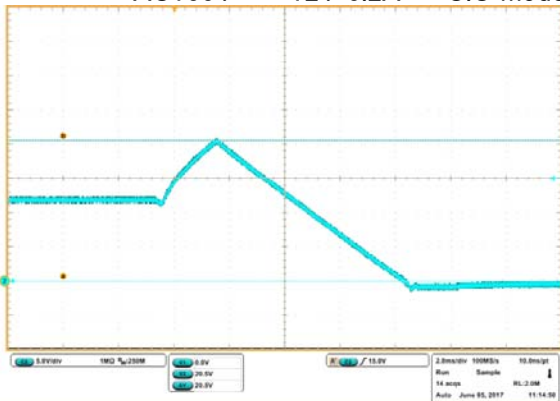
Over Voltage Protection

AC100V: 20.5V 2.0ms

AC240V: 20.5V 1.8ms

AC100V 12V 0.2A C.C mode

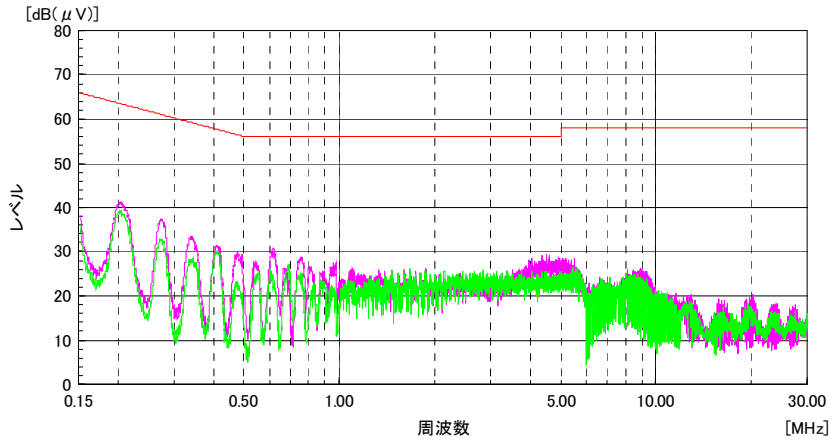
AC240V 12V 0.2A C.C mode



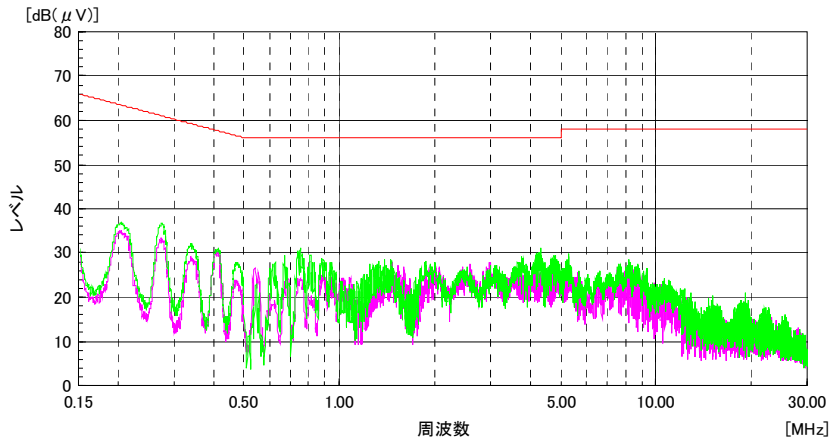
※U3 R-A short

Conducted EMI noise

input:
AC100V
output:
12V 0.42A



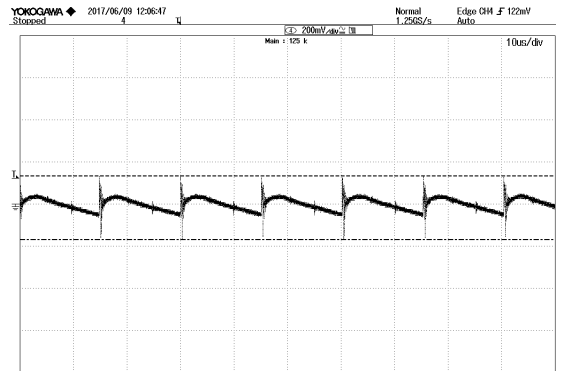
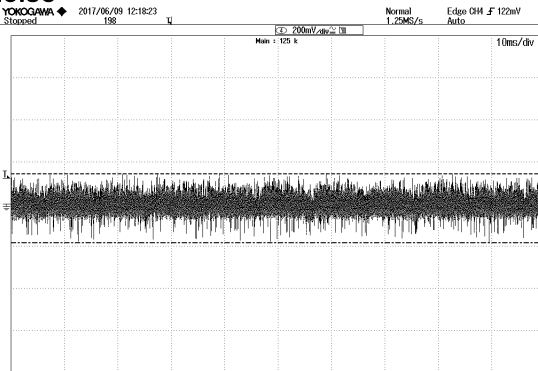
input:
AC240V
output:
12V 0.42A



Output ripple noise

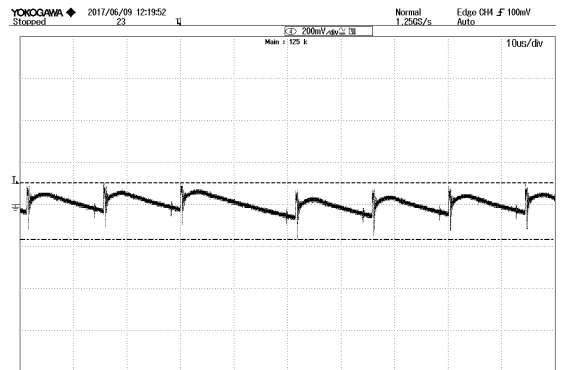
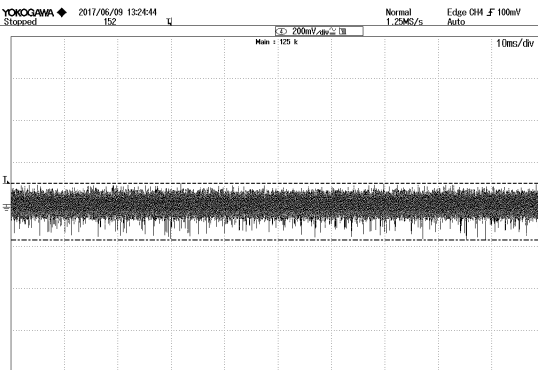
input:
AC100V
output:
12V 0.42A

Ripple Noise:
327mVp-p



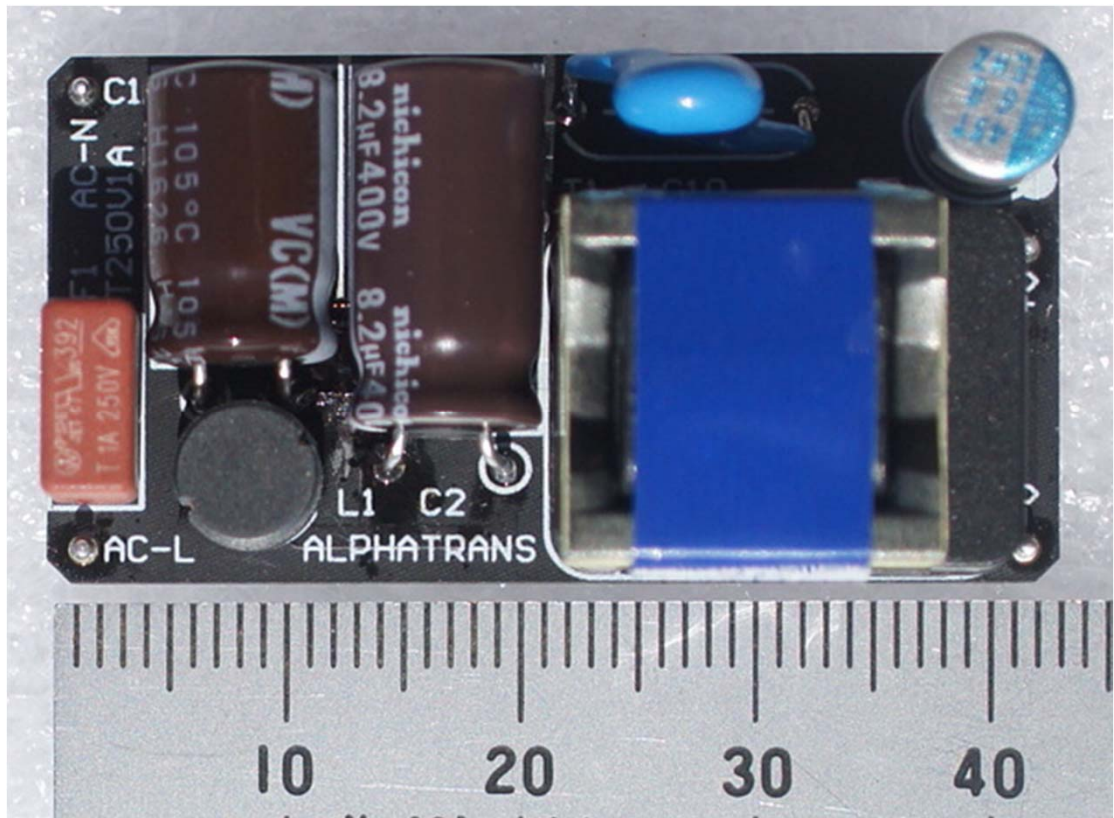
input:
AC240V
output:
12V 0.42A

Ripple Noise:
270mVp-p



Differential Probe: (DP-100 Keisoku Giken)

Test board image

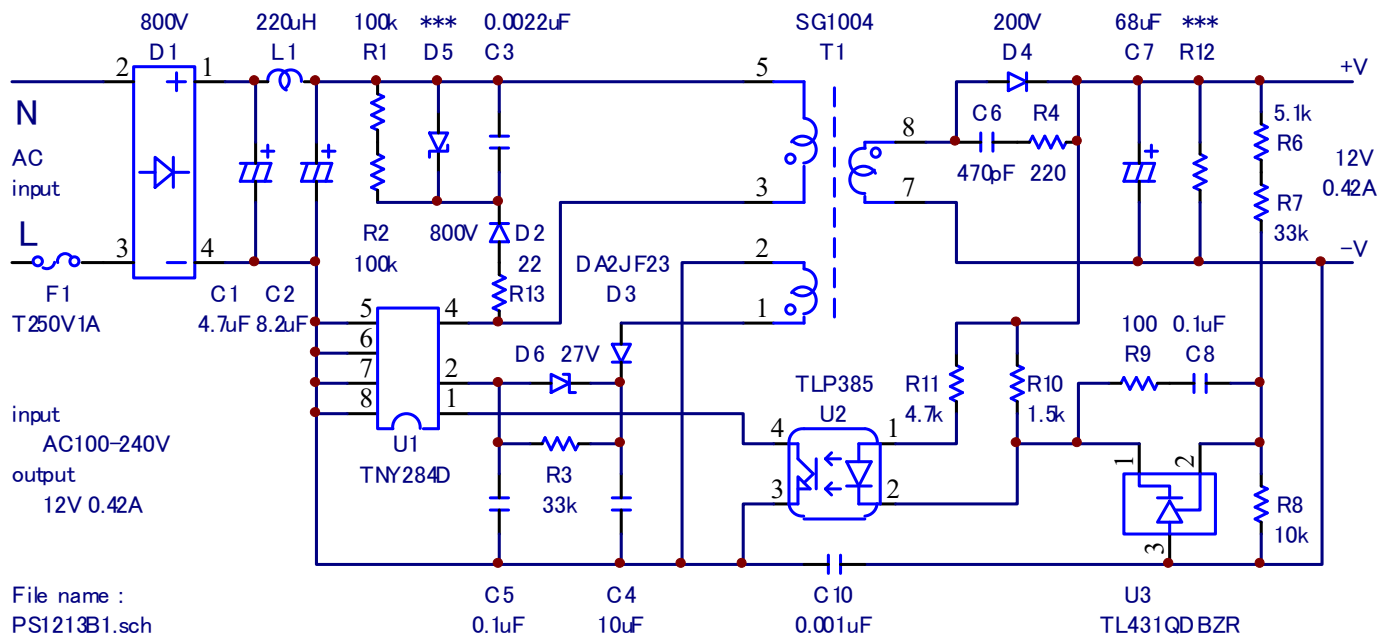


Temperature & Life

input: AC100~240V				
output: 12V 0.42A	C1	105 °C	UVC2G4R7MPD	2000 (hour)
mean temperature : 40 °C	C2	105 °C	UVC2G8R2MPD	2000 (hour)
max operating temperature: 50 °C	C7	105 °C	25HEHZ068MT	2000 (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)	(°C)	(hour)	(Year)					
①	Reference	(°C)	28.5	—	28.7	—	28.6	—	28.8	—	—	—				
②	D1	(°C)	69.4	40.9	63.2	34.6	51.2	22.6	51.5	22.8	150	90.9	59.1			
③	C1	(°C)	65.2	36.7	60.1	31.5	50.4	21.8	50.7	22.0	105	86.7	18.3	76.7	14221	1.6
④	L1	(°C)	61.2	32.8	58.5	29.8	51.6	23.0	52.0	23.3	120	82.8	37.3			
⑤	C2	(°C)	67.6	39.1	62.7	34.1	63.6	35.0	54.0	25.3	105	89.1	15.9	79.1	12042	1.4
⑥	D2	(°C)	73.3	44.9	68.4	39.7	59.1	30.5	59.7	30.9	150	94.9	55.2			
⑦	R13	(°C)	72.9	44.5	67.4	38.7	57.5	28.9	58.1	29.3	150	94.5	55.6			
⑧	U1	(°C)	86.3	57.8	76.9	48.3	60.5	31.9	61.0	32.3	135	107.8	27.2			
⑨	T1 wire	(°C)	62.8	34.4	60.9	32.3	58.7	30.1	59.4	30.7	120	84.4	35.7			
⑩	T1 core	(°C)	63.8	35.4	61.6	32.9	58.7	30.1	59.4	30.7	120	85.4	34.7			
⑪	D4	(°C)	67.9	39.4	66.8	38.2	66.3	37.7	67.2	38.5	150	89.4	60.6			
⑫	C7	(°C)	55.9	27.5	55.2	26.5	54.8	26.2	55.8	27.0	105	77.5	27.6	67.0	27858	3.2
⑬	U3	(°C)	53.6	25.2	52.6	24.0	51.8	23.2	52.5	23.8	125	75.2	49.9			

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	C3216X7R1V106K	10uF	35V	X7R	3216	TDK
C5	Ceramic Capacitor	C1608JB1H104K	0.1uF	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	***	***		SOD-123FL	D2818	***
D6	Zener Diode	UDZVTE-1727B	27V	0.5W	UMD2	D1712	ROHM
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	MCR03EZPJ333	33k	1/10W	50V	1608	ROHM
R4	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	Resistor	***	***			3216	***
R13	Resistor	MCR10EZPJ220	22	1/8W	150V	2012	ROHM
T1	Transformer	GT0512P-TN	SG1004A			GT15	Alphatrans
U1	IC	TNY284D	725V			SO8C	Power Integrations
U2	Optical	TLP385 (GR)	5000V			SOP4 8mm	Toshiba
U3	Shunt Reg.	TL431QDBZR	2.495V	2%		SOT23-3	Texas Instruments
	PCB	PW1133B	FR-4	t=1.0			
	Terminal	DC-5					マックエイト