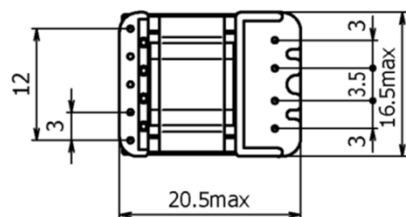
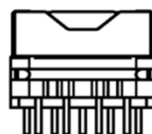
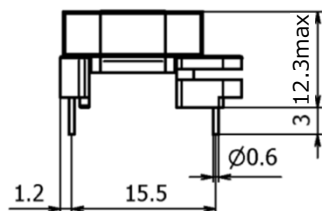
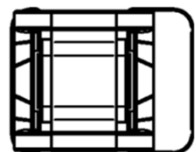
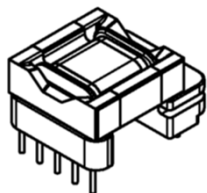


PN : GT0505R-2P

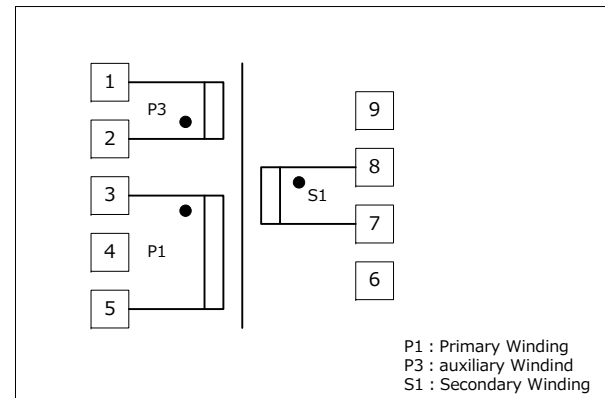


RoHS compliant

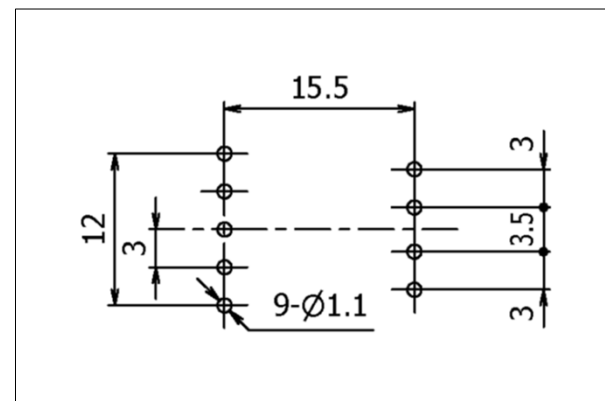


Bobbin : GT15
Ferrite core : EED15

Dimensions



Schematics (Top View)



Recommended PCB hole size (Bottom view)

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



TEST REPORT

Product Name	Test Board
Product Number	EVA-GT0505R-2P
Design Number	PS1206A
Sheet Number	
Date	2017/9/20

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 : 5V (4.75V ~ 5.25V)

Output current : 1.0A

Ripple noise : 520mVp-p typ (AC100V) 960mVp-p typ (AC240V)

Standby power : 0.03W typ (AC100V) 0.05W typ (AC240V)

Efficiency : 75.6% (AC100V) 76.2% (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 : 12.5g

Alphatrans co., ltd.

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

541-0059 Japan

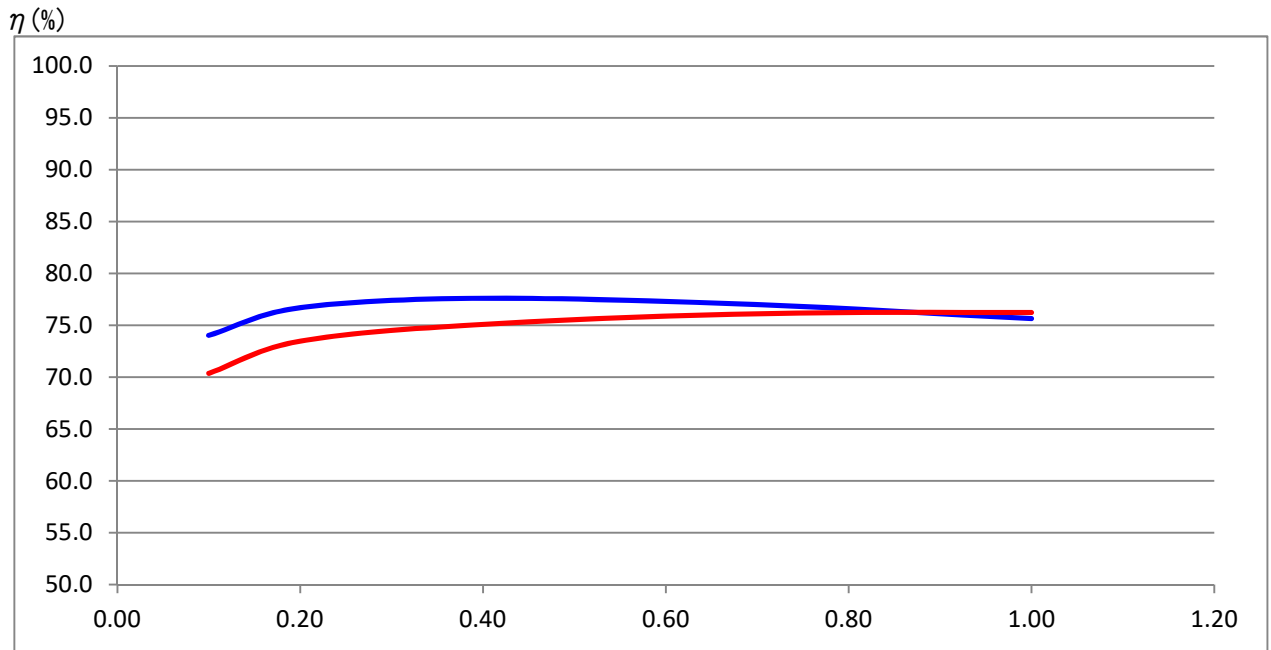
TEL (06) 6252-8839 FAX (06) 6252-3939

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

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

Load Regulation

AC in (V)	5V (V)	5V (A)	Bias (V)	I in (mA)	P in (W)	P out (W)	P loss (W)	効率 (%)
100	4.982	0.00	15.18	1.12	0.031	0.000	0.031	0.0
100	4.982	0.10	17.84	19.09	0.673	0.498	0.175	74.0
100	4.981	0.20	18.12	31.98	1.299	0.996	0.303	76.7
100	4.980	0.40	18.58	54.57	2.567	1.992	0.575	77.6
100	4.978	0.70	19.08	86.39	4.526	3.485	1.041	77.0
100	4.978	1.00	19.57	117.83	6.581	4.978	1.603	75.6
240	4.982	0.00	12.76	0.45	0.049	0.000	0.049	0.0
240	4.982	0.10	18.48	13.70	0.708	0.498	0.210	70.4
240	4.981	0.20	18.84	21.73	1.356	0.996	0.360	73.5
240	4.980	0.40	19.26	34.65	2.653	1.992	0.661	75.1
240	4.978	0.70	19.70	53.38	4.578	3.485	1.093	76.1
240	4.976	1.00	20.00	69.42	6.528	4.976	1.552	76.2



(A)

Over Current Protection

AC100V: 1.30A

AC240V: 1.50A

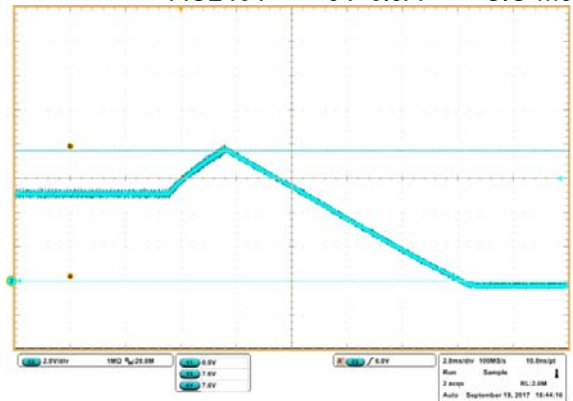
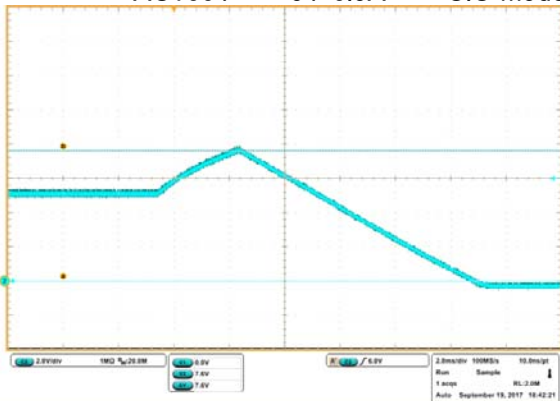
Over Voltage Protection

AC100V: 7.6V 3.0ms

AC240V: 7.6V 2.0ms

AC100V 5V 0.5A C.C mode

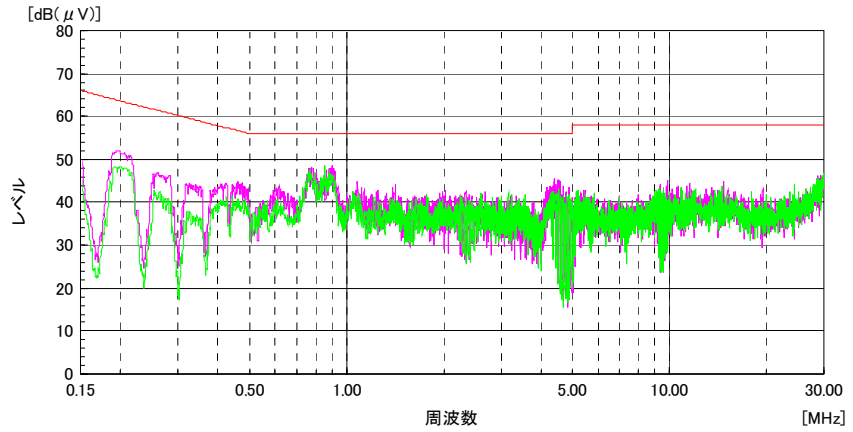
AC240V 5V 0.5A C.C mode



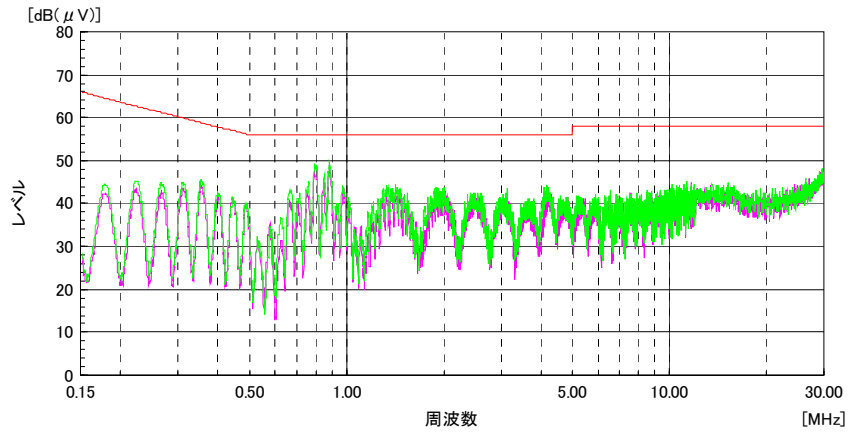
※U3 R-A short

Conducted EMI noise

input:
AC100V
output:
5V 1.0A

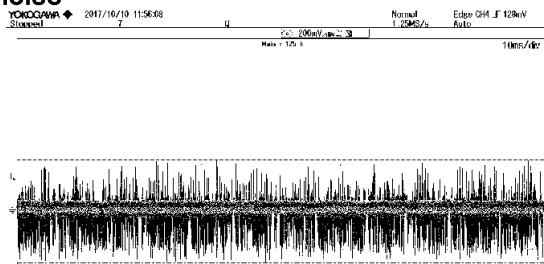


input:
AC240V
output:
5V 1.0A



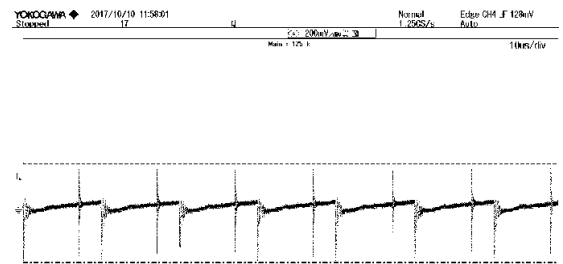
Output ripple noise

input:
AC100V
output:
5V 1.0A

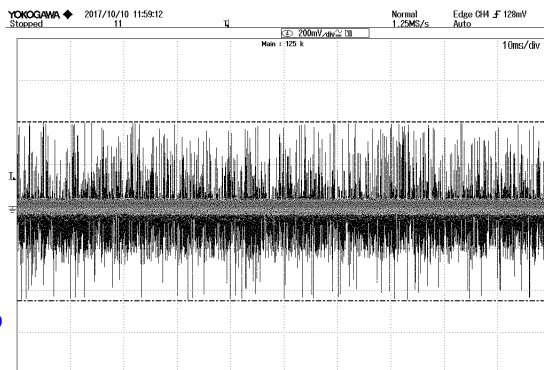


Ripple Noise:
490mV_{p-p}

V1	224.0mV	Max(C4)	274mV	Min(C4)	798mV
V2	748.0mV	Rms(C4)	27.3671mV		
V3	490.0mV				

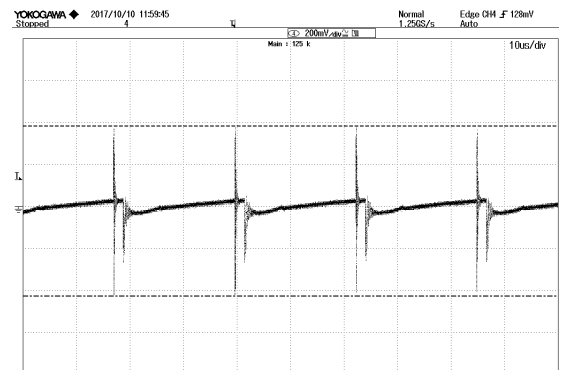


input:
AC240V
output:
5V 1.0A



Ripple Noise:
852mV_{p-p}

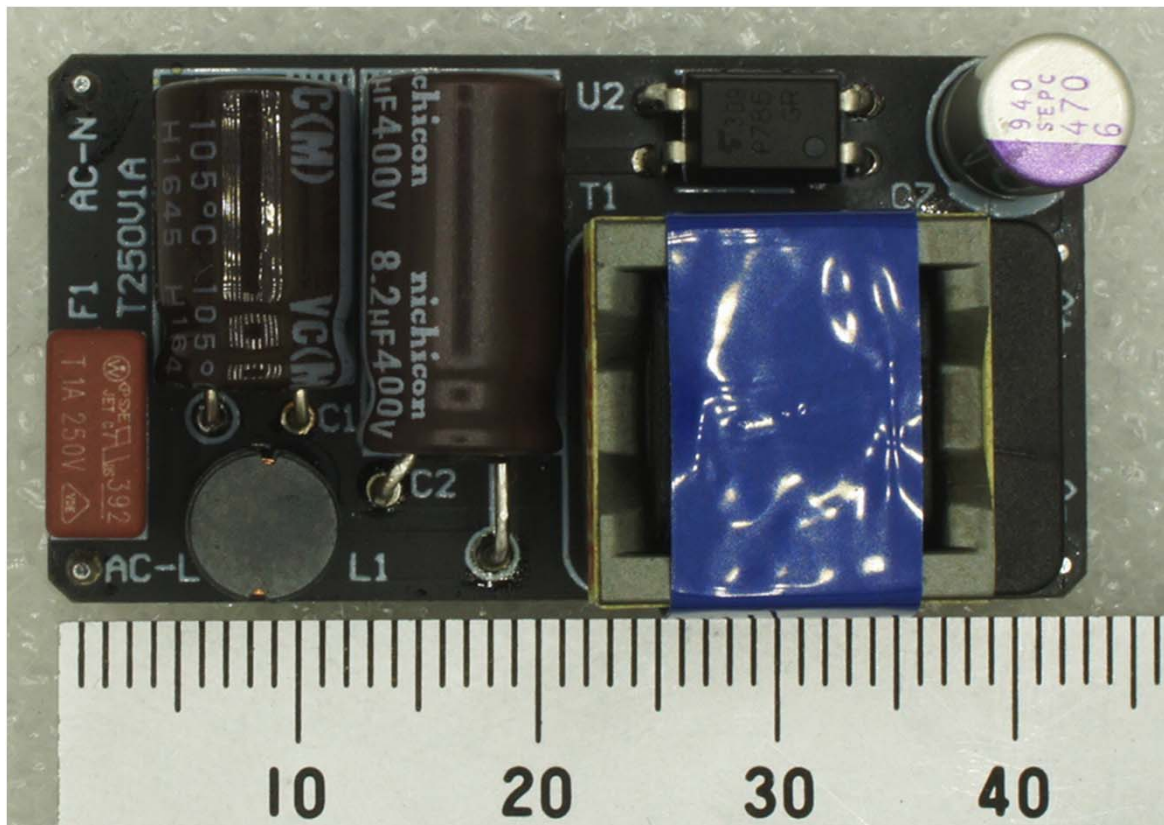
V1	404.0mV	Max(C4)	405mV	Min(C4)	-447mV
V2	448.0mV	Rms(C4)	34.5620mV		
V3	852.0mV				



V1	384.0mV	Max(C4)	384mV	Min(C4)	-427mV
V2	424.0mV	Rms(C4)	32.3749mV		
V3	808.0mV				

Differential Probe: (DP-100 Keisoku Giken)

Test board image



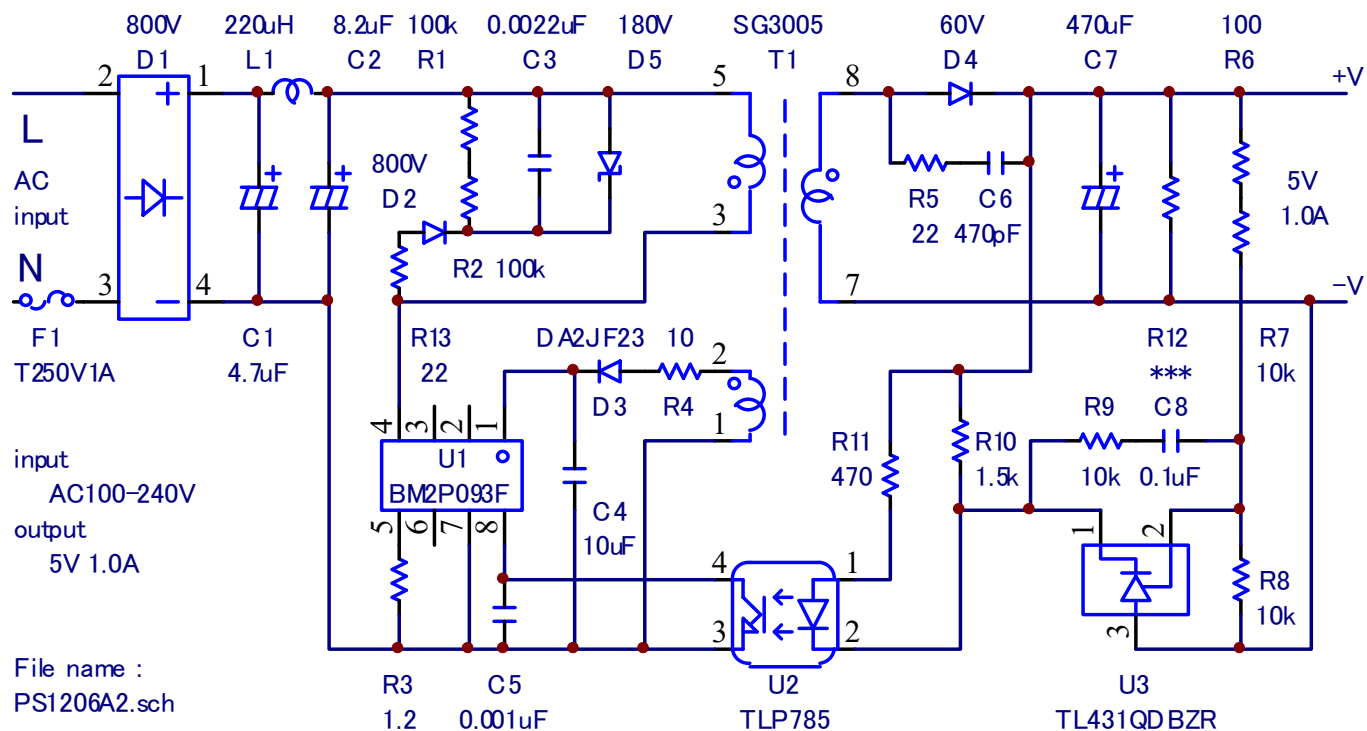
Temperature & Life

input: AC100~240V
 output: 5V 1.0A
 mean temperature : 40 °C
 max operating temperature: 50 °C

C1	105 °C	UVC2G4R7MPD	2000 (hour)
C2	105 °C	UVC2G8R2MPD	2000 (hour)
C7	105 °C	6SEPC470MW	5000 (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)						
①	Reference	(°C)	28.3	—	27.7	—	28.0	—	—	—	—			
②	D1	(°C)	60.0	31.7	57.0	29.3	51.1	23.2	150	81.7	68.4			
③	C1	(°C)	59.7	31.4	56.7	29.1	52.9	25.0	105	81.4	23.7	71.4	20606	2.4
④	L1	(°C)	58.7	30.4	57.1	29.4	53.1	25.2	120	80.4	39.6			
⑤	C2	(°C)	64.5	36.2	61.6	34.0	58.0	30.1	105	86.2	18.8	76.2	14723	1.7
⑥	D2	(°C)	74.4	46.1	72.0	44.3	67.8	39.9	150	96.1	53.9			
⑦	D5	(°C)	75.4	47.1	73.8	46.1	71.3	43.3	150	97.1	52.9			
⑧	R13	(°C)	73.6	45.3	69.8	42.2	65.1	37.1	150	95.3	54.8			
⑨	U1	(°C)	79.1	50.8	73.6	46.0	66.7	38.8	105	100.8	4.2			
⑩	T1 wire	(°C)	70.1	41.8	69.3	41.7	69.6	41.7	120	91.8	28.2			
⑪	T1 core	(°C)	70.4	42.1	68.5	40.8	68.6	40.7	120	92.1	28.0			
⑫	D4	(°C)	71.3	43.0	70.9	43.3	72.7	44.8	150	93.3	56.8			
⑬	C7	(°C)	58.6	30.3	57.6	29.9	58.8	30.9	105	79.3	25.8	69.3	59587	6.8
⑭	U3	(°C)	53.6	25.3	54.0	26.4	54.7	26.7	125	74.9	50.2			

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	6SEPC470MW	470uF 6.3V 5000H ϕ 6.3x9.0 P=2.5	Panasonic
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	RBR5L60A	60V 5A 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	MCR10EZPJ220	22 1/8W 150V 2012	ROHM
R6	Resistor	MCR03EZPJ101	100 1/10W 50V 1608	ROHM
R7	Resistor	MCR03EZPFX1002	10k 1/10W 50V 1% 1608	ROHM
R8	Resistor	MCR03EZPFX1002	10k 1/10W 50V 1% 1608	ROHM
R9	Resistor	MCR03EZPJ103	10k 1/10W 50V 1608	ROHM
R10	Resistor	MCR03EZPJ152	1.5k 1/10W 50V 1608	ROHM
R11	Resistor	MCR03EZPJ471	470 1/10W 50V 1608	ROHM
R12	***	***	*** 3216	***
R13	Resistor	MCR10EZPJ220	22 1/8W 150V 2012	ROHM
T1	Transformer	GT0505R-2P	SG3005B 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