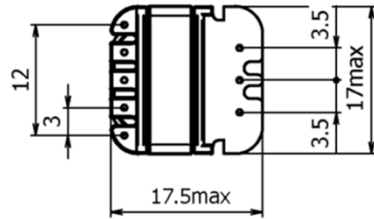
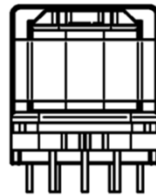
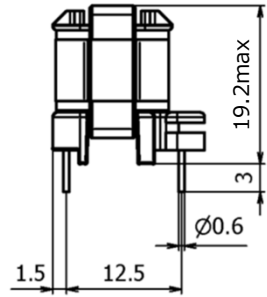
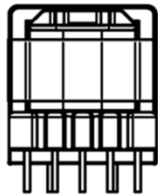
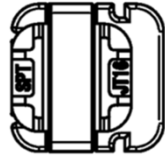
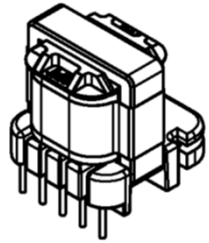


PN : JT0512P-TN

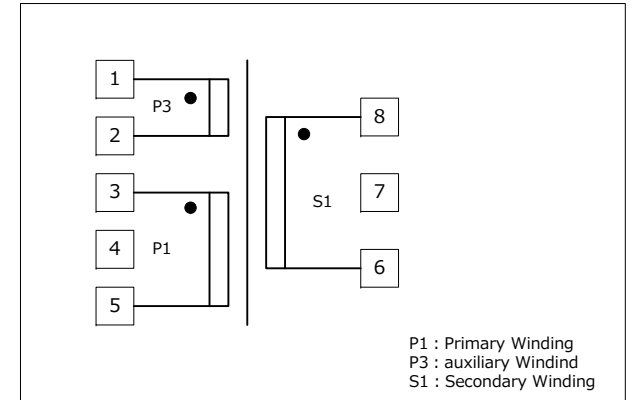


RoHS compliant

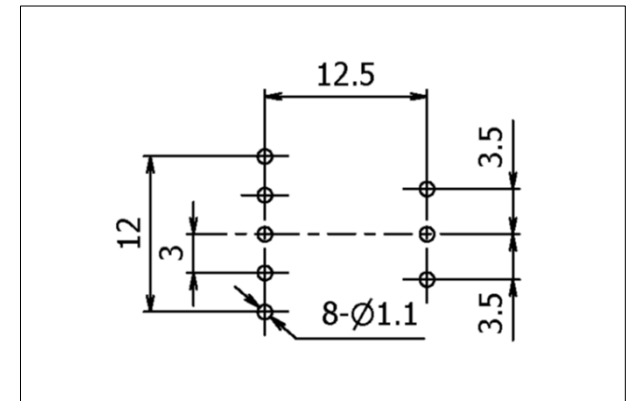


Bobbin : JT16
Ferrite core : EE16

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-JT0512P-TN
Design Number	PS1193C
Sheet Number	
Date	2017/6/19

Meet Safety Standards
IEC 60950 PSE

Specification

Trans type : JT16

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 : 298mVp-p typ (AC100V) 231mVp-p typ (AC240V)

Standby power : 0.12W typ (AC100V) 0.21W typ (AC240V)

Efficiency : 78.7% (AC100V) 79.3% (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 : 38.0 × 25.0 × 17.5 (mm)

Weight : 15.5g

Alphatrans co., ltd.

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

541-0059 Japan

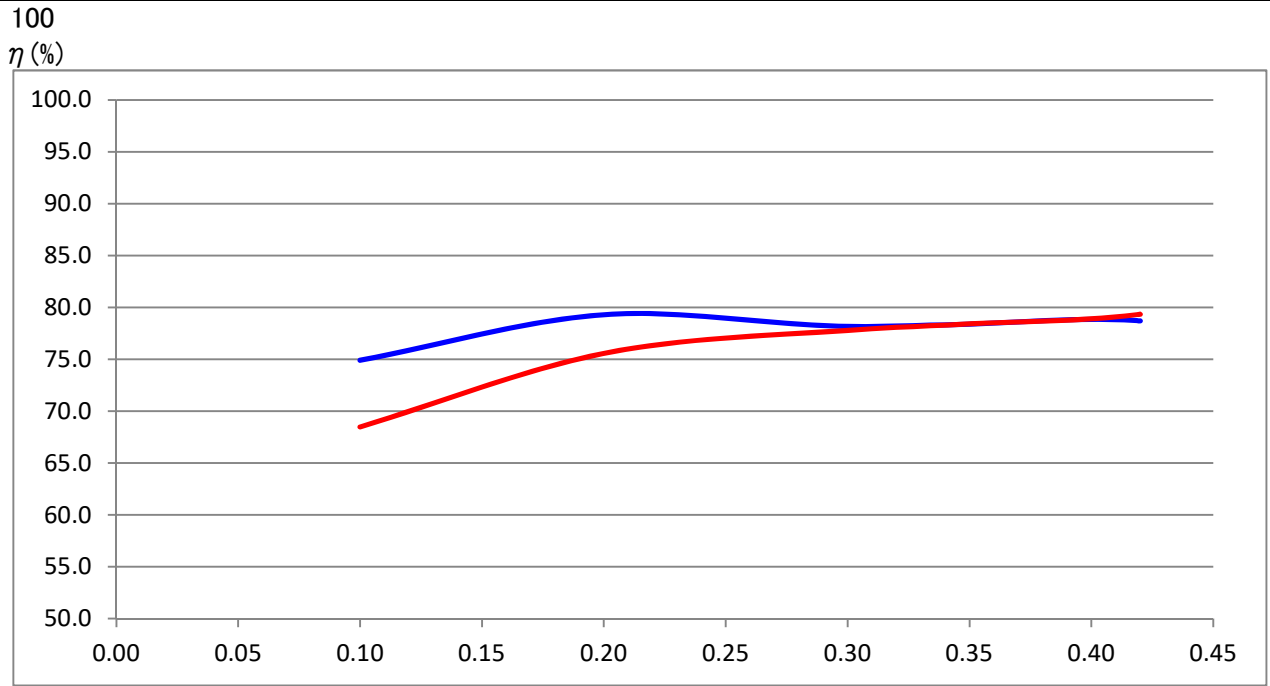
TEL (06) 6252-8839 FAX (06) 6252-3939

<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	11.903	0.00	19.38	4.68	0.123	0.000	0.123	0.0
100	11.902	0.10	22.92	42.83	1.589	1.190	0.399	74.9
100	11.901	0.20	25.31	71.23	3.002	2.380	0.622	79.3
100	11.901	0.30	28.81	98.66	4.567	3.570	0.997	78.2
100	11.900	0.40	30.42	123.56	6.036	4.760	1.276	78.9
100	11.899	0.42	30.61	128.92	6.350	4.998	1.352	78.7
240	11.902	0.00	19.74	3.43	0.213	0.000	0.213	0.0
240	11.901	0.10	22.14	30.98	1.738	1.190	0.548	68.5
240	11.901	0.20	24.88	47.65	3.150	2.380	0.770	75.6
240	11.901	0.30	27.99	61.42	4.590	3.570	1.020	77.8
240	11.900	0.40	29.62	76.75	6.034	4.760	1.274	78.9
240	11.900	0.42	29.87	97.84	6.300	4.998	1.302	79.3



(A)

Over Current Protection

AC100V: 0.65A

AC240V: 0.80A

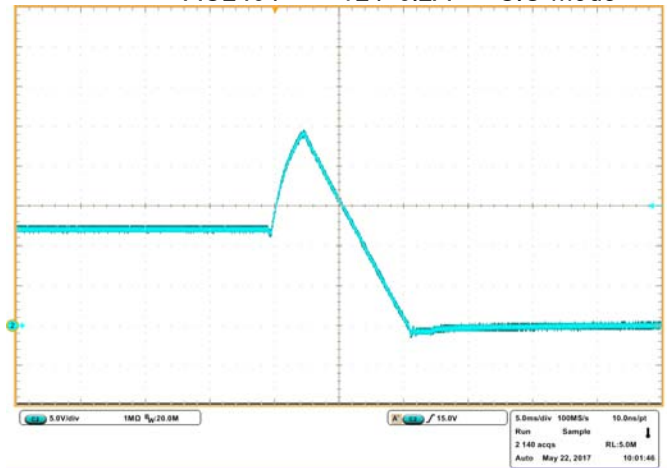
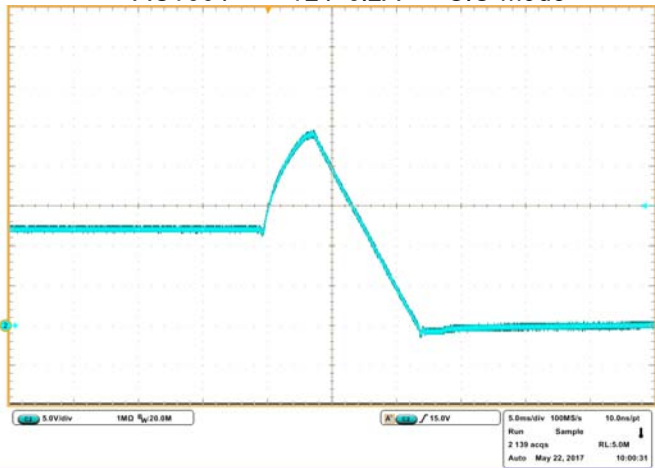
Over Voltage Protection

AC100V: 24.0V 4.0ms

AC240V: 24.0V 3.0ms

AC100V 12V 0.2A C.C mode

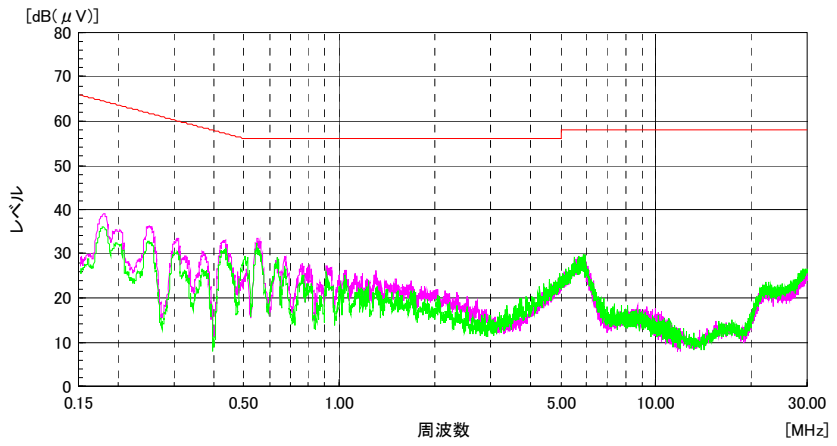
AC240V 12V 0.2A C.C mode



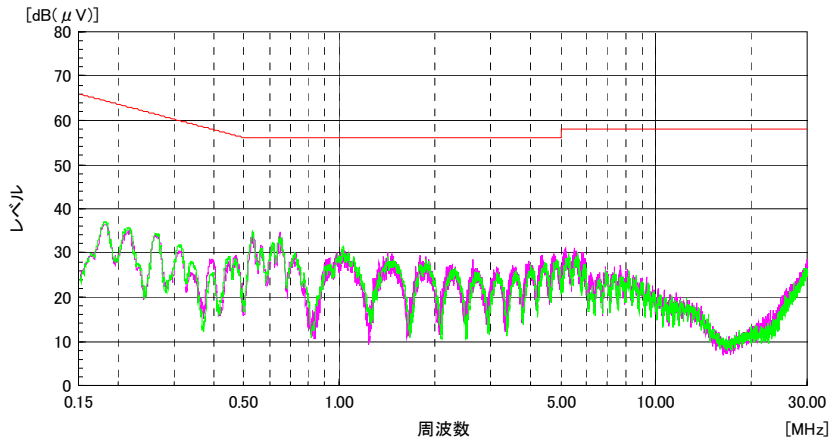
✘U3 R-A short

Conducted EMI noise

input:
AC100V
output:
12V 0.42A

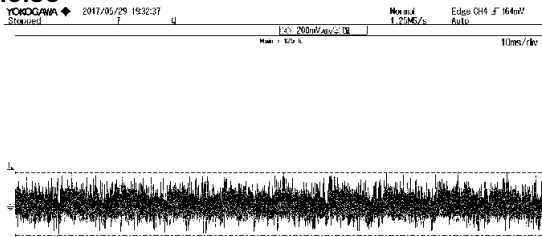


input:
AC240V
output:
12V 0.42A



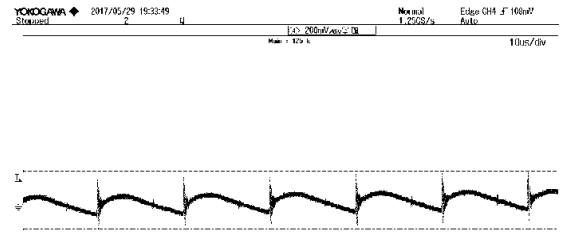
Output ripple noise

input:
AC100V
output:
12V 0.42A



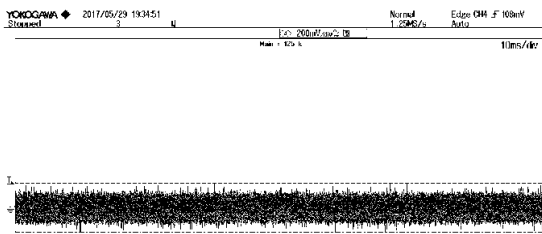
Ripple Noise:
298mV_{p-p}

V1	156.0mV	Min(D1)	13.1mV	Max(D1)	14.1mV
V2	148.0mV	Rms(D1)	34.9433mV		
#1	298.0mV				



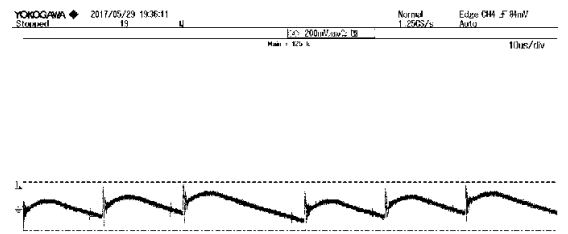
V1	158.0mV	Min(D1)	13.6mV	Max(D1)	14.9mV
V2	138.0mV	Rms(D1)	33.1069mV		
#1	276.0mV				

input:
AC240V
output:
12V 0.42A



Ripple Noise:
231mV_{p-p}

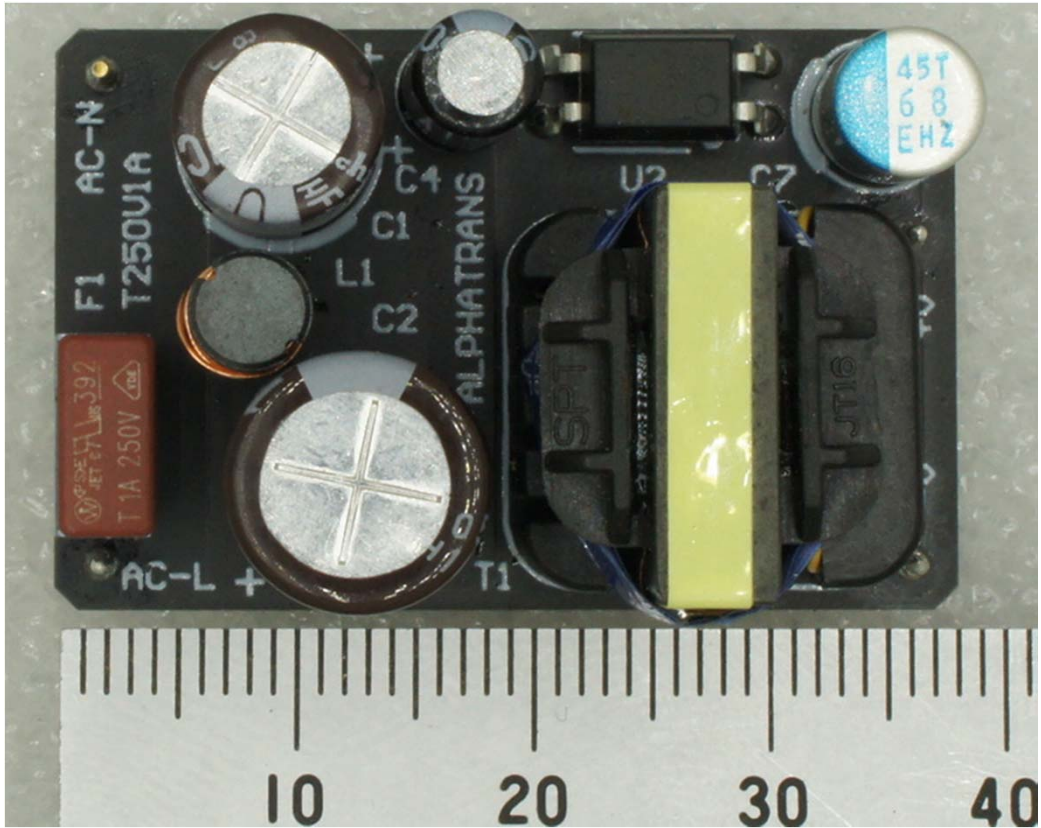
V1	112.0mV	Min(D1)	11.1mV	Max(D1)	12.0mV
V2	178.0mV	Rms(D1)	34.6089mV		
#1	232.0mV				



V1	118.0mV	Min(D1)	11.9mV	Max(D1)	12.7mV
V2	132.0mV	Rms(D1)	33.3536mV		
#1	230.0mV				

Differential Probe: (DP-100 Keisoku Giken)

Test board image

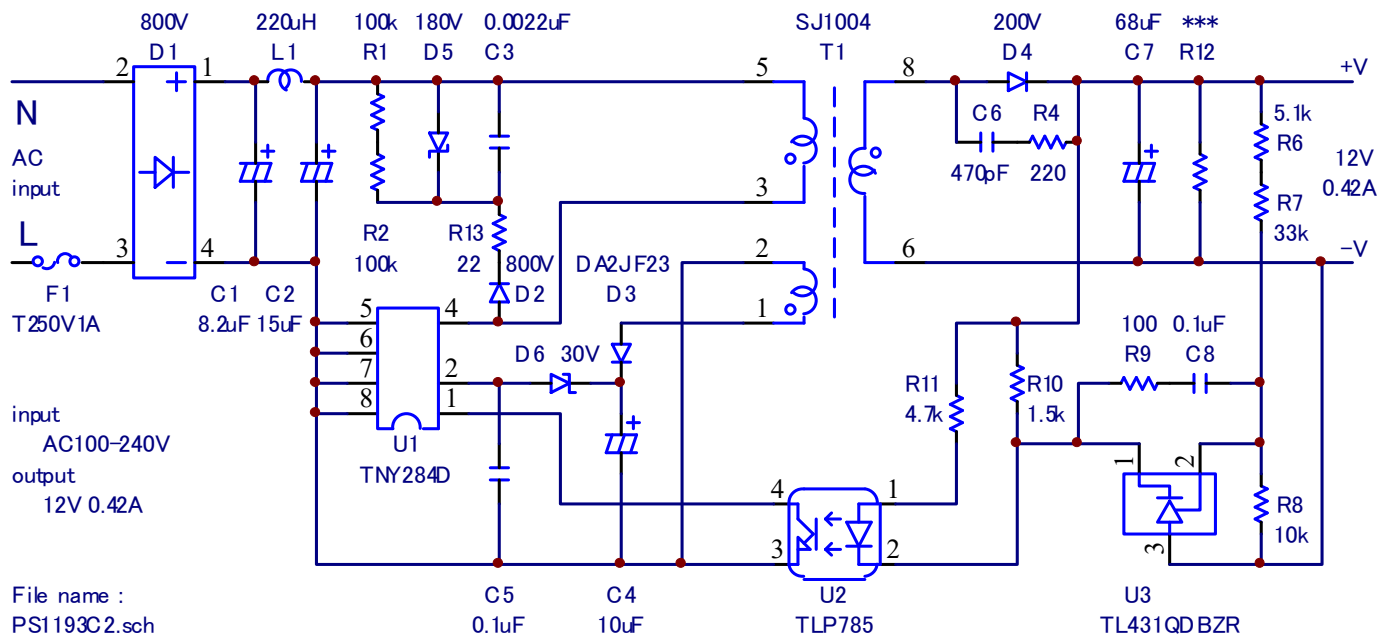


Temperature & Life

input: AC100~240V			
output: 12V 0.42A			
mean temperature : 40 °C		C1 105 °C	UVC2G4R7MPD
		C2 105 °C	UVC2G8R2MPD
max operating temperature: 50 °C		C7 105 °C	25HEHZ068MT
			2000 (hour)
			2000 (hour)
			2000 (hour)

		input AC85V (°C)	input AC100V (ΔT)	input AC240V (°C)	input AC264V (ΔT)	limit temp (°C)	max temp (°C)	margin	mean temp	40°C	40°C					
										Life (hour)	Life (Year)					
①	Reference	(°C)	31.1	—	31.8	—	33.6	—	32.6	—	—	—				
②	D1	(°C)	60.3	29.3	57.0	25.2	52.2	18.6	52.0	19.4	150	79.3	70.8			
③	C1	(°C)	57.5	26.5	54.8	23.1	51.8	18.2	51.6	19.0	105	76.5	28.6	66.5	28940	3.3
④	L1	(°C)	61.2	30.1	58.1	26.3	55.2	21.6	54.9	22.3	120	80.1	39.9			
⑤	C2	(°C)	62.7	31.7	59.9	28.2	58.0	24.4	57.6	25.0	105	81.7	23.4	71.7	20182	2.3
⑥	D2	(°C)	75.5	44.5	70.4	38.6	68.0	34.4	68.3	35.7	150	94.5	55.6			
⑦	D5	(°C)	68.4	37.3	64.5	32.7	63.1	29.5	62.5	29.9	150	87.3	62.7			
⑧	R13	(°C)	71.9	40.9	67.4	35.6	65.4	31.8	65.3	32.7	150	90.9	59.2			
⑨	U1	(°C)	87.1	56.1	78.4	46.7	73.4	39.8	74.2	41.6	135	106.1	29.0			
⑩	T1 wire	(°C)	65.3	34.3	63.9	32.2	65.7	32.1	65.5	32.9	120	84.3	35.8			
⑪	T1 core	(°C)	66.1	35.1	65.1	33.3	67.4	33.8	67.5	34.9	120	85.1	35.0			
⑫	D4	(°C)	67.3	36.2	66.8	35.1	70.0	36.4	70.1	37.5	150	87.5	62.6			
⑬	C7	(°C)	59.2	28.1	59.1	27.4	62.1	28.5	62.4	29.8	105	79.8	25.3	69.8	23023	2.6
⑭	U3	(°C)	55.1	24.0	55.2	23.5	57.4	23.8	56.6	24.0	125	74.0	51.1			

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	Electrol Capacitor	UHE1H100MDD1TD	10uF 50V 5000H ϕ 5x11 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	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 SOD-123FL D2818	MCC
D6	Zener Diode	UDZVTE-1730B	30V 0.5W UMD2 D1712	ROHM
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
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	JT0512P-TN	SJ1004B JT16	Alphatrans
U1	IC	TNY284D	725V SO8C	Power Integrations
U2	Optical	TLP785F (GR,F)	5000V	Toshiba
U3	Shunt Reg.	TL431QDBZR	2.495V 2% SOT23-3	Texas Instruments
	PCB	PW1125C	FR-4 t=1.0	
	Terminal	DC-5		マックエイト