

**Innovations
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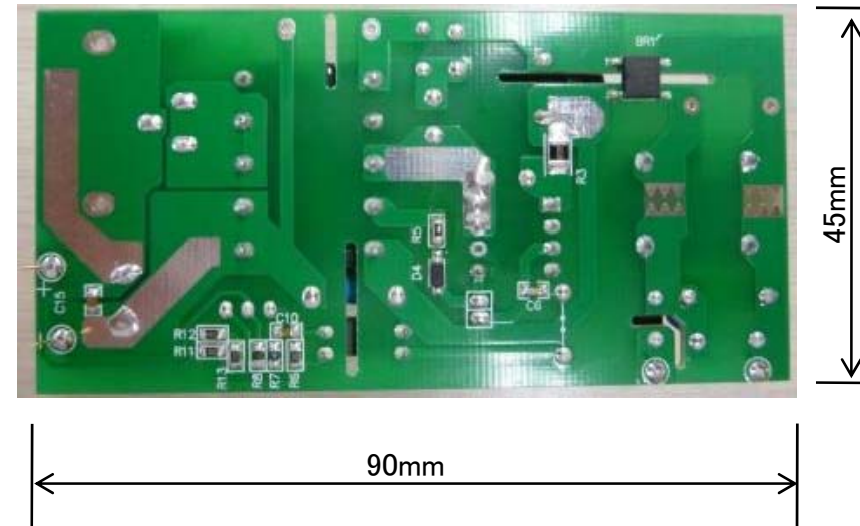
Board No:BM2P014EVK-001

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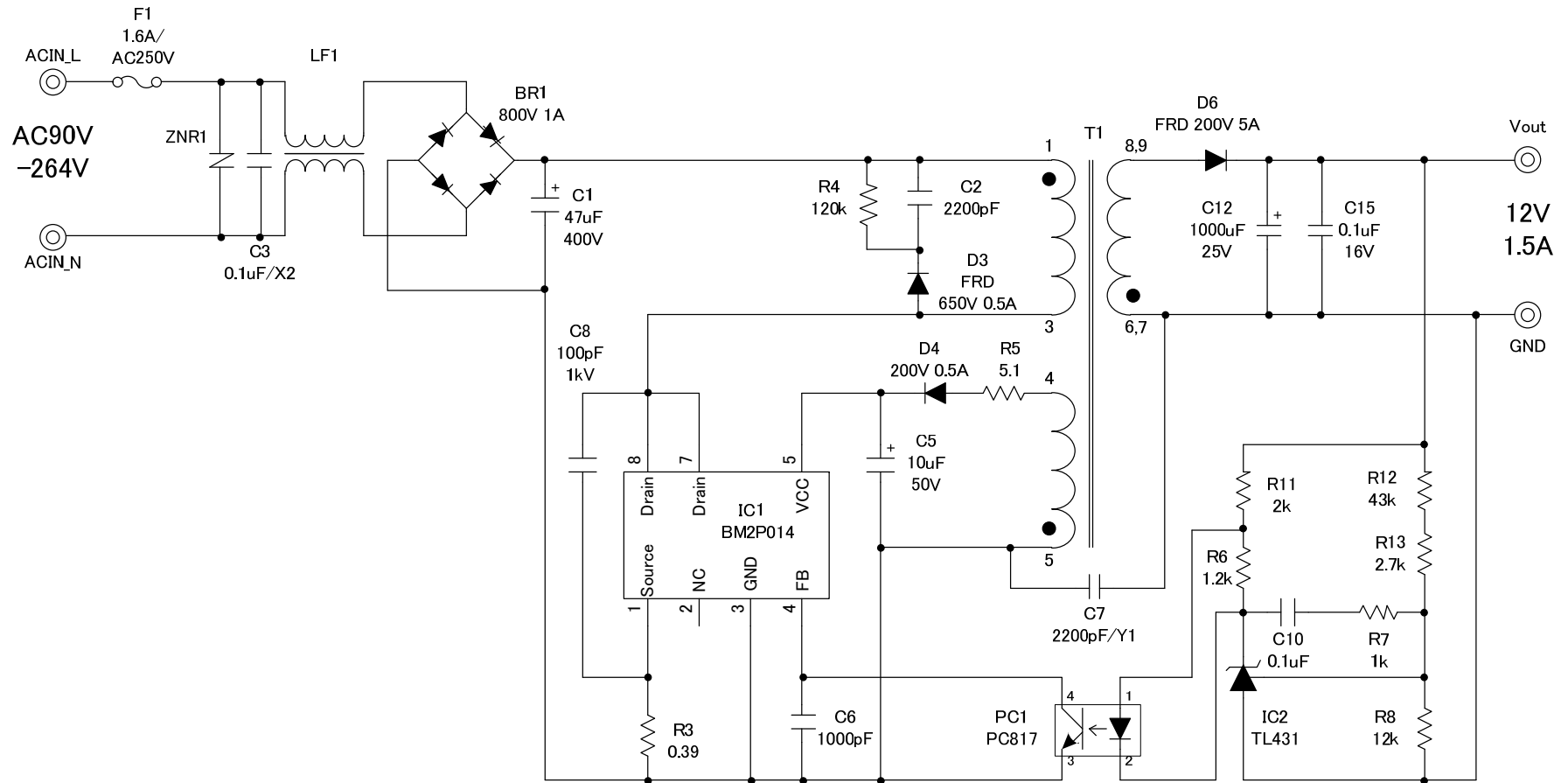
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Reference Board Specification

Description		Symbol	Min	Typ	Max	Unit	Condition
Input	Voltage	Vin	90		264	Vac	
	Frequency	fac	47	50/60	63	Hz	
	No Load Input Power				50	mW	Vin: AC100V/230V
Output	Voltage	Vout	11.4	12	12.6	V	
	Current	Iout	1.5			A	
	Ripple Voltage	Vripple			100	mV	20MHz Bandwidth
	Efficiency		80			%	Output: 12V 1.5A



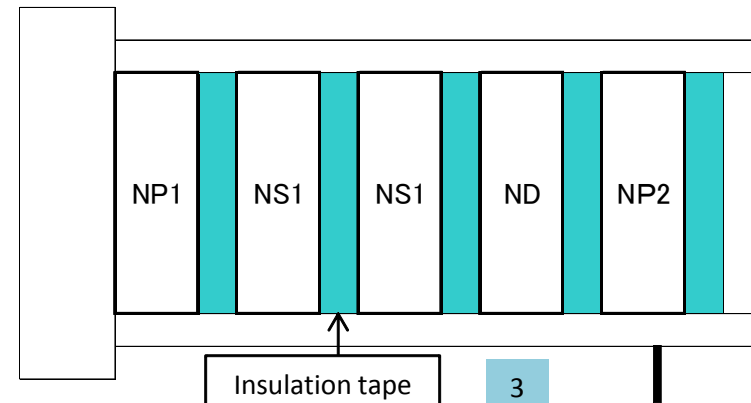
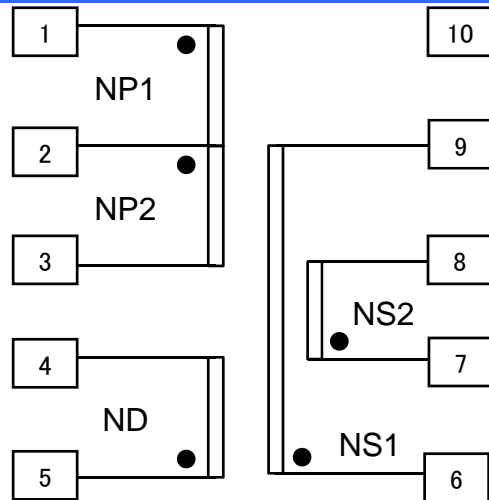
Application Schematic



Component List

Item	Spec	Parts name	Maker
C1	47uF/400V	47uF/400V	
C2	2200pF/500V	2200pF/1kV	
C3	0.1uF/X2	0.1uF/X2	
C5	10uF/50V	10uF/50V	
C6	1000pF/16V	1000pF/50V 1608	
C7	2200pF/Y1	2200pF/Y1	
C8	100pF/1kV	100pF/1kV	
C10	0.1uF/25V	0.1uF/50V 1608	
C12	Low-Z 1000uF/25V	Low-Z 1000uF/25V	
C15	0.1uF/25V	0.1uF/50V 1608	
BR1	800V/1A	UA80	
D3	FRD 650V 0.5A	UF4007	
D4	200V 0.5A	RR264M-400	Rohm
D6	FRD 200V 5A	RF601T2D	Rohm
F1		1.6A/AC250V	
IC1		BM2P014	Rohm
LF1		SS11VL-10062	NEC Tokin
ZNR1		7D471K	
R3	0.39 Ω /0.5W	MCR25JZHFJR390	Rohm
R4	120k Ω /1W	120k Ω /1W	
R5	5.1 Ω	MCR10EZPJ5R1	Rohm
R6	1.2k Ω	MCR10EZPJ122	Rohm
R7	1k Ω	MCR10EZPJ102	Rohm
R8	12k Ω	MCR10EZPJ123	Rohm
R11	2k Ω	MCR10EZPJ202	Rohm
R12	43k Ω	MCR10EZPJ433	Rohm
R13	2.7k Ω	MCR10EZPJ272	Rohm
T1	EI25	YPP1183	Tomita
IC2		TL431	
PC1		PC817	

Transformer:YPP1183 (EI25)



Core: Tomita 2G8-EI25 or compatible

Bobbin: PIN SHINE INDUSTRIAL P-2513-1 Vertical/Terminal Pins 5-5(10pins) or compatible

AL-Value: 137.2 nH/N²

Inductance(1-3pin): 0.400 mH±15%

Coil	Terminal	Turns	Wire	Winding Method
NP1	'1-2	27	2UEW 0.35	1 Layer FIT(密)
NS1	'6-9	11	TEX-E 0.5	1 Layer SPACE(均等)
ND	'5-4	13	2UEW 0.4	1 Layer SPACE(均等)
NS2	'7-8	11	TEX-E 0.5	1 Layer SPACE(均等)
NP2	'2-3	27	2UEW 0.35	1 Layer FIT(密)

耐压 P-S :AC3.0kVrms 1MIN. 2mA or AC3.6kVrms 1s 2mA

PS-CORE:AC1.5kVrms 1MIN. 2mA or AC1.8kVrms 1s 2mA

IR : P-S,PS-CORE 100 MΩ MIN. at DC 500V

Winding beginning: Fix by barrier tape

**Winding end: Interpose the line drawn
in a right angle**

Winding direction: Unification

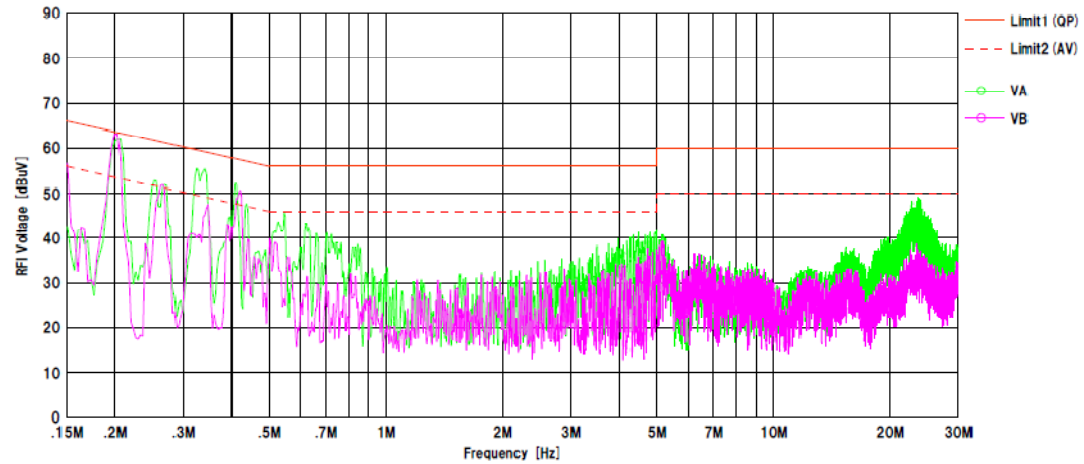
Measurement Data

Vin(V)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	η (%)
90	0.033	12.09	0	0	-
	0.179	12.09	0.01	0.121	67.5
	1.479	12.09	0.1	1.209	81.7
	7.174	12.09	0.5	6.043	84.2
	14.33	12.09	1	12.09	84.3
	21.64	12.08	1.5	18.13	83.8
100	0.032	12.09	0	0	-
	0.179	12.09	0.01	0.121	67.7
	1.478	12.09	0.1	1.209	81.8
	7.165	12.09	0.5	6.043	84.3
	14.30	12.09	1	12.09	84.5
	21.51	12.09	1.5	18.13	84.3
230	0.036	12.09	0	0	-
	0.183	12.09	0.01	0.121	66.1
	1.497	12.09	0.1	1.209	80.7
	7.272	12.09	0.5	6.044	83.1
	14.34	12.09	1	12.09	84.3
	21.49	12.09	1.5	18.13	84.4
264	0.045	12.09	0	0	-
	0.190	12.09	0.01	0.121	63.6
	1.481	12.09	0.1	1.209	81.6
	7.240	12.09	0.5	6.044	83.5
	14.39	12.09	1	12.09	84.0
	21.57	12.09	1.5	18.13	84.1

Conduction EMI

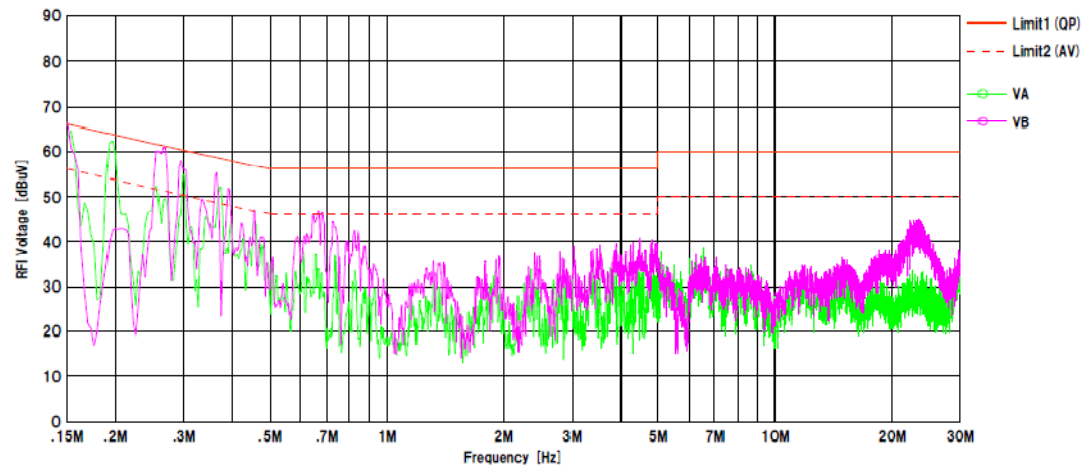
Vin: AC100V/50Hz
Vout: 12V 1.5A

Limit1 : CISPR Pub 22 Class B
Limit2 : CISPR Pub 22 Class B (AV)



Vin: AC230V/50Hz
Vout: 12V 1.5A

Limit1 : CISPR Pub 22 Class B
Limit2 : CISPR Pub 22 Class B (AV)



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