AC/DC Converter Controller Application Information

IC Product Name	BM2P014
Control Method	PWM
Input	85 Vac to 264 Vac
Output	3.3V 3A
Type	Isolation
Document Number	W-I-0330300-0000-00
Revision	001

Reference Circuit

Transformer Specification

Insulation tape 3T
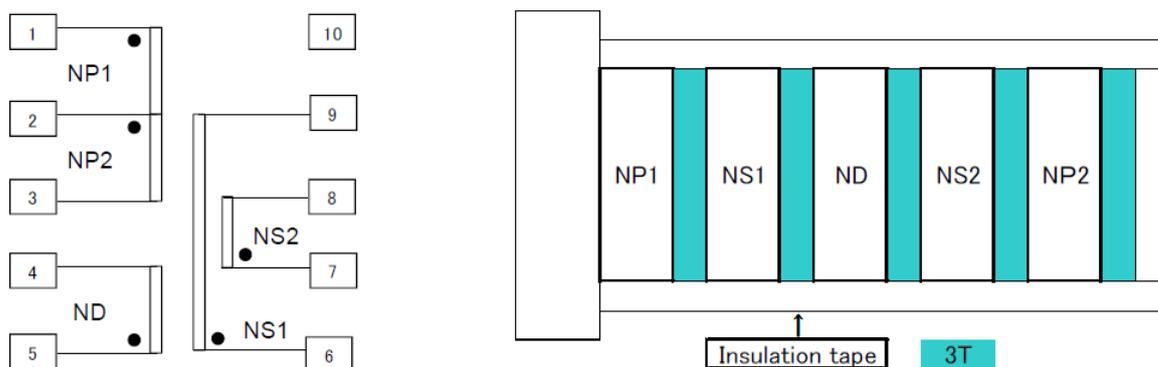
Core: TOMITA 2G8-EI22 or compatible
Bobbin: TOMITA TBB248 Vertical/Terminal Pins 5-5(10pins) or compatible
AL-Value: 177.5 nH/N^2
Inductance(1-3pin) 0.773 mH±15%

Coil	Terminal	Turns	Wire			Winding Method
NP1	'1-2	33	2UEW	0.21	× 1	1 Layer FIT(密)
NS1	'6-10	4	TEX-E	0.45	× 3	1 Layer FIT(密)
ND	'5-4	16	2UEW	0.10		1 Layer SPACE(均等)
NS2	'7-9	4	TEX-E	0.45	× 3	1 Layer FIT(密)
NP2	'2-3	33	2UEW	0.21	× 2	2 Layer FIT(密)

耐圧　P-S　：AC3.0kVrms 1MIN. 2mA or AC3.6kVrms 1s 2mA　　巻始め ：バリアテープ固定
　　　PS-CORE ：AC1.5kVrms 1MIN. 2mA or AC3.6kVrms 1s 2mA　　巻終り ：直角引き出し挟み込み処理
IR 　：P-S, PS-CORE 100MΩ MIN. at DC 500V　　　　　　　　　　巻方向 ：統一

Bill of Materials

Item	Spec	Parts name	Maker
C1	22uF/450V	VR 450V 22uF	Nichicon
C2	2200pF/500V		
C5	10uF/50V	PM 50V 10uF	Nichicon
C6	1000pF/16V		
C7	2200pF/Y1		
C10	0.1uF/25V		
C12	Low-Z 470uF/35V	HD 35V 470uF	Nichicon
BR1	800V/1A	D1VBA80	Shindengen
D3	FRD 650V 0.5A	RFN1L7S	Rohm
D4	200V 0.5A	RR264M-400/RR264MM-400	Rohm
D6	SBD 60V 6A	RB095T-60	Rohm
F1	1.6A		
IC1		BM2P014	Rohm
R3	0.75Ω/0.5W	MCR25JZHFLR750	Rohm
R4	100kΩ/1W		
R5	10Ω	MCR10EZPJ100	Rohm
R6	10kΩ	MCR10EZPJ103	Rohm
R7	10kΩ	MCR10EZPJ103	Rohm
R8	12kΩ	MCR10EZPF1202	Rohm
R11	330Ω	MCR10EZPJ331	Rohm
R12	3.6kΩ	MCR10EZPF3601	Rohm
R13	0.27kΩ	MCR10EZPF2700	Rohm
T1	EI22		
IC2		TL431	TI
PC1		PC817	

Typical Characteristics

VinAC	Iout(A)	Vout(V)	⊿Vo(V)	Pout(W)	Pin(W)	η (%)
85V	0.00	3.30	—	0	0.01	–
	0.10	3.29	−0.01	0.33	0.47	70.5
	0.30	3.28	−0.02	0.98	1.30	75.5
	0.50	3.26	−0.04	1.63	2.16	75.3
	1.00	3.23	−0.07	3.23	4.26	75.8
	1.50	3.21	−0.09	4.82	6.30	76.4
	2.00	3.18	−0.12	6.35	8.33	76.3
	2.50	3.15	−0.15	7.86	10.40	75.6
	3.00	3.11	−0.19	9.33	12.47	74.8
VinAC	Iout(A)	Vout(V)	⊿Vo(V)	Pout(W)	Pin(W)	η (%)
100V	0.00	3.30	—	0	0.03	–
	0.10	3.29	−0.01	0.33	0.46	71.0
	0.30	3.28	−0.02	0.98	1.30	75.7
	0.50	3.26	−0.04	1.63	2.14	76.3
	1.00	3.24	−0.06	3.24	4.22	76.7
	1.50	3.22	−0.09	4.82	6.25	77.1
	2.00	3.19	−0.11	6.38	8.32	76.7
	2.50	3.16	−0.14	7.90	10.39	76.0
	3.00	3.13	−0.17	9.39	12.47	75.3
VinAC	Iout(A)	Vout(V)	⊿Vo(V)	Pout(W)	Pin(W)	η (%)
240V	0.00	3.32	—	0	0.11	–
	0.10	3.30	−0.02	0.33	0.47	70.4
	0.30	3.28	−0.04	0.98	1.36	72.2
	0.50	3.25	−0.07	1.63	2.23	73.0
	1.00	3.23	−0.09	3.23	4.39	73.5
	1.50	3.22	−0.10	4.83	6.52	74.1
	2.00	3.21	−0.11	6.42	8.66	74.1
	2.50	3.20	−0.12	7.99	10.80	74.0
	3.00	3.19	−0.14	9.56	12.88	74.2
VinAC	Iout(A)	Vout(V)	⊿Vo(V)	Pout(W)	Pin(W)	η (%)
264V	0.00	3.33	—	0	0.11	–
	0.10	3.31	0.01	0.33	0.47	70.0
	0.30	3.28	−0.02	0.98	1.38	71.5
	0.50	3.26	−0.04	1.63	2.25	72.3
	1.00	3.23	−0.07	3.23	4.40	73.3
	1.50	3.21	−0.09	4.81	6.56	73.3
	2.00	3.21	−0.09	6.42	8.70	73.7
	2.50	3.20	−0.10	8.00	10.84	73.8
	3.00	3.19	−0.11	9.56	12.93	74.0
	3.50	3.18	−0.12	11.12	15.02	74.0

Regulation

Efficiency

OLP Regulation

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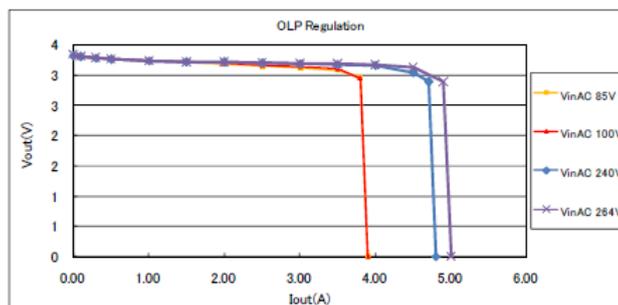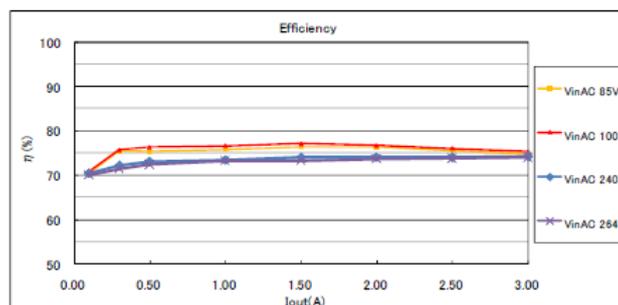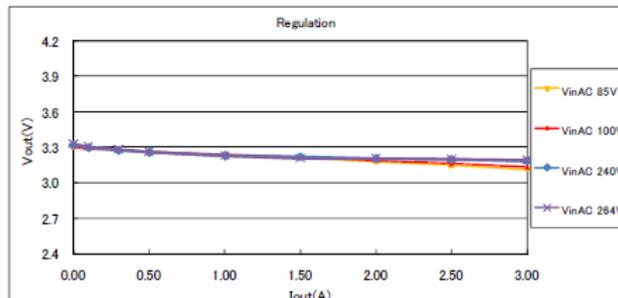
7.Mar.2014

Revision History

Date	Revision	Changes
7.Mar.2014	001	New Release

W-I-0330300-0000-00
7.Mar.2014

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JAPAN	USA	EU	CHINA
CLASS III	CLASS III	CLASS II b	CLASS III
CLASS IV		CLASS III	

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