AC/DC Converter Controller Application Information
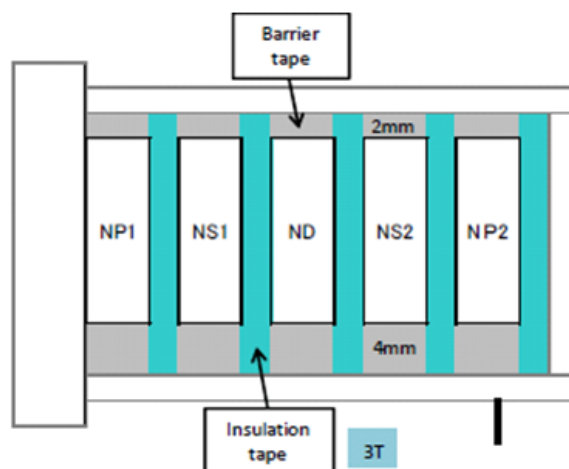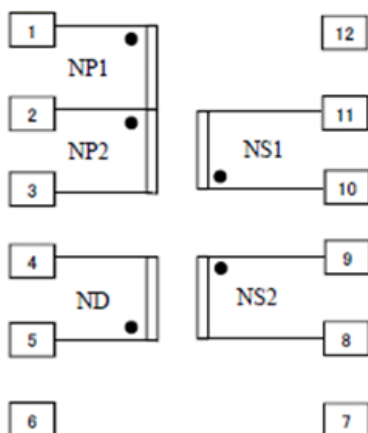
IC Product Name	BM1P061FJ
Control Method	PWM
Input	180 Vac to 275 Vac
Output	24V 3A
Type	Isolation
Document Number	2-I-2400300-0000-00
Revision	001

Reference Circuit
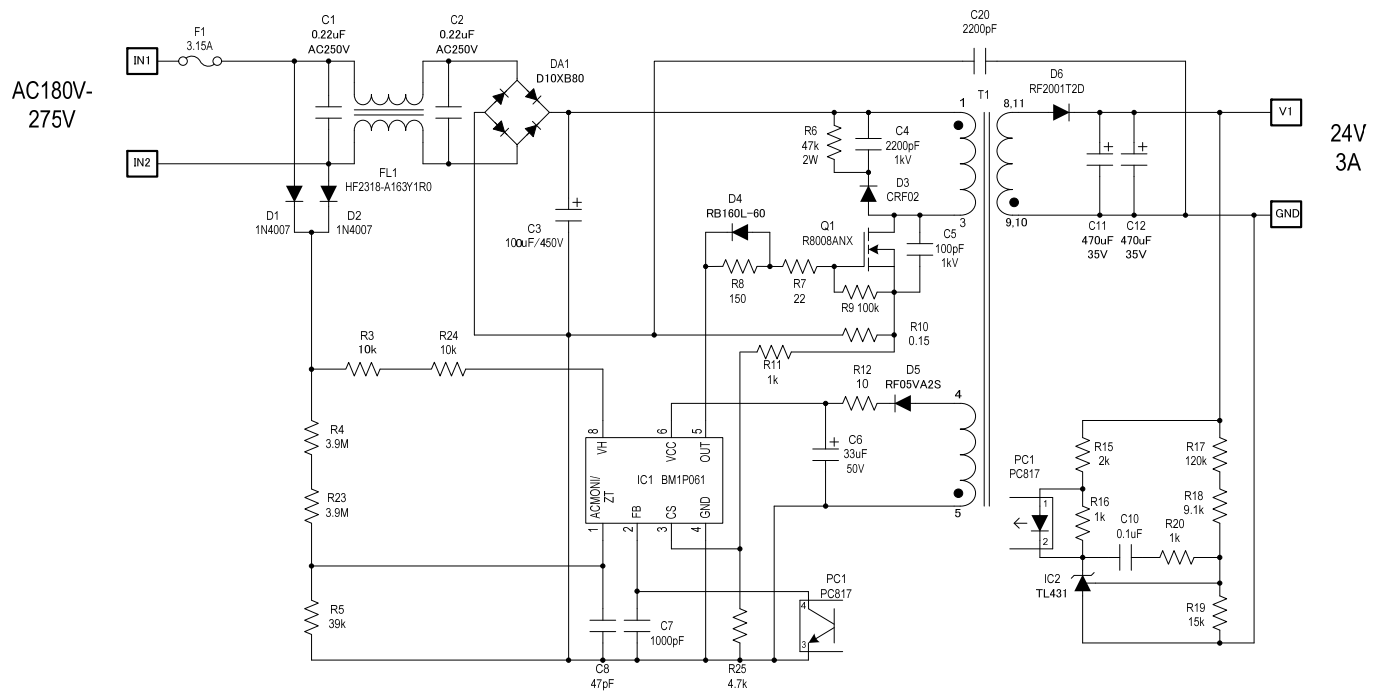
Transformer Specification

Core: JFE MB3 EER-28.5B or compatible
Bobbin: JFE BER28.5MP12 Vertical/Terminal Pins 6-6(12pins) or compatible
AL-Value: 64.7 nH/N^2
Inductance(1-3pin): 0.233 mH±15%

Coil	Terminal	Turns	Wire	Winding Method
NP1	'1-2	30	2UEW 0.5	1 Layer FIT
NS1	'10-11	15	2UEW 0.5×2	1 Layer FIT
ND	'5-4	10	2UEW 0.35×4	1 Layer FIT
NS2	'9-8	15	2UEW 0.5×2	1 Layer FIT
NP2	'2-3	30	2UEW 0.5	1 Layer FIT

耐圧 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

巻始め：バリアテープ固定
巻終り：直角引き出し挟み込み処理
巻方向 ：統一

Po=72W

Bill of Materials

Item	Spec	Parts name	Maker
C1	0.22uF/AC250V X-Cap	LE224	Okaya
C2	0.22uF/AC250V X-Cap	LE224	Okaya
C3	100uF/450V	KXJ 100uF 450V	Nippon Chemi-con
C4	2200pF/1kV	CK45-B3AD222KY*N	TDK
C5	100pF/1kV	CC45SL3AD101JY*N	TDK
C6	33uF/50V	PJ 33uF 50V	Nichicon
C7	1000pF/16V	GRM219B711H102K	Murata
C8	47pF/16V	GRM219B711H470K	Murata
C10	0.1uF/50V	GRM21BB11H104KA01B	Murata
C11	470uF/35V Low-Z	HD 470uF 35V	Nichicon
C12	470uF/35V Low-Z	HD 470uF 35V	Nichicon
C20	2200pF/1kV	CS11-E2GA222MYNS	TDK
DA1	800V/10A	D10XB80	Shindengen
D1	800V/1A	1N4007	
D2	800V/1A	1N4007	
D3	FRD 700V/0.5A	RFN1L7S	Rohm
D4	60V/1A	RB160L-60	Rohm
D5	FRD 200V/0.5A	RF05VA2S/RF05VAM2S	Rohm
D6	FRD 200V/20A	RF2001T2D/RFN20TS2D	Rohm
F1	3.15A		
FL1		HF2318-A163Y1R0	TDK
IC1		BM1P061FJ	Rohm
IC2		TL431	
PC1		PC817	SHARP
Q1	800V/8A	R8008ANX	Rohm
R3	10kΩ	MCR18EZPJ104	Rohm
R4	3.9MΩ/0.25W	MCR18EZPJ395	Rohm
R5	39kΩ	MCR10EZPJ393	Rohm
R6	47kΩ/2W	100kΩ//100kΩ 2 パラ	
R7	22Ω/0.25W	MCR18EZPJ220	Rohm
R8	150Ω	MCR10EZPJ151	Rohm
R9	100kΩ	MCR10EZPJ104	Rohm
R10	0.15Ω/1W	0.39Ω//0.27Ω 2 パラ	
R11	1kΩ	MCR10EZPJ102	Rohm
R12	10Ω/0.25W	MCR18EZPJ100	Rohm
R15	2kΩ	MCR10EZPJ202	Rohm
R16	1kΩ	MCR10EZPJ102	Rohm
R17	120kΩ	MCR10EZPF1203	Rohm
R18	9.1kΩ	MCR10EZPF9101	Rohm
R19	15kΩ	MCR10EZPF1502	Rohm
R20	1kΩ	MCR10EZPJ102	Rohm
R23	3.9MΩ/0.25W	MCR18EZPJ395	Rohm
R24	10kΩ	MCR18EZPJ104	Rohm
R25	4.7kΩ	MCR10EZPJ472	Rohm
T1	EER28L		

Typical Characteristics

＜レギュレーション/効率＞

Vin:AC180V 50Hz

Iout(A)	Vout(V)	Pout(W)	Pin(W)	η(%)
0	23.90	0	0.068	–
0.1	23.90	2.390	2.950	81.0
0.3	23.90	7.169	8.576	83.6
0.75	23.90	17.92	20.96	85.5
1.5	23.89	35.84	41.75	85.8
2.25	23.89	53.76	62.35	86.2
3	23.89	71.67	83.19	86.2

Vin:AC240V 50Hz

Iout(A)	Vout(V)	Pout(W)	Pin(W)	η(%)
0	23.90	0	0.077	–
0.1	23.90	2.390	2.948	81.1
0.3	23.90	7.169	8.260	86.8
0.75	23.90	17.92	21.11	84.9
1.5	23.89	35.84	41.67	86.0
2.25	23.89	53.76	62.33	86.2
3	23.89	71.67	83.15	86.2

Vin:AC275V 50Hz

Iout(A)	Vout(V)	Pout(W)	Pin(W)	η(%)
0	23.90	0	0.135	–
0.1	23.90	2.390	2.964	80.6
0.3	23.90	7.169	8.386	85.5
0.75	23.90	17.92	21.15	84.7
1.5	23.89	35.84	41.81	85.7
2.25	23.89	53.75	62.63	85.8
3	23.89	71.67	83.30	86.0

Regulation

Efficiency
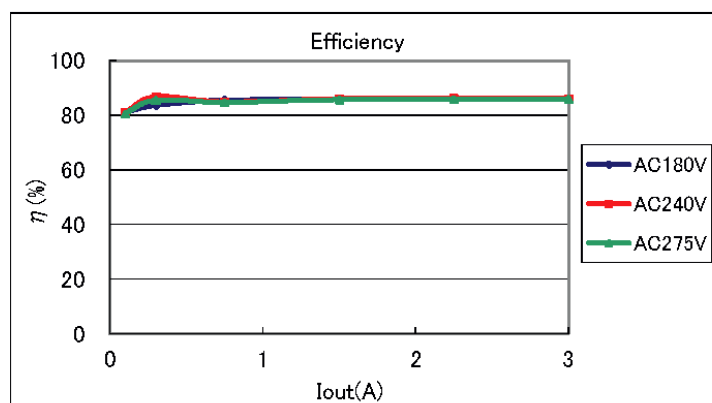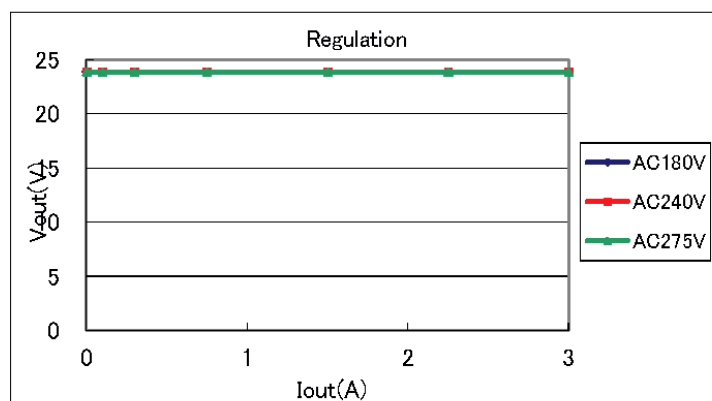
＜待機時電力＞　抵抗負荷にて測定

Vin：AC240V/50Hz時

RL(kΩ)	Vout(V)	Iout(mA)	Pout(W)	Pin(W)	η(%)
47	23.90	0.508	0.012	0.088	13.8
1.8	23.90	13.28	0.317	0.468	67.8

Revision History

Date	Revision	Changes
7.Mar.2014	001	New Release

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JAPAN	USA	EU	CHINA
CLASSⅢ	CLASSⅢ	CLASS Ⅱ b	CLASSⅢ
CLASSⅣ		CLASSⅢ	

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