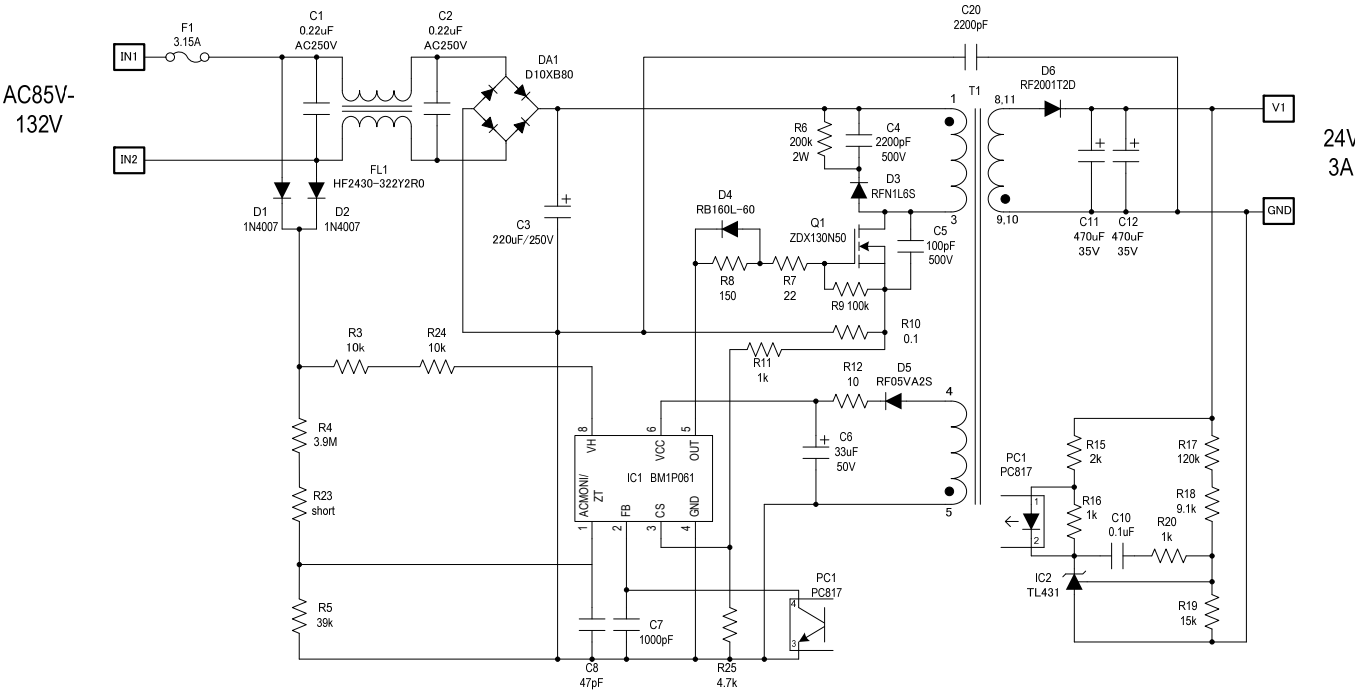


AC/DC Converter Controller

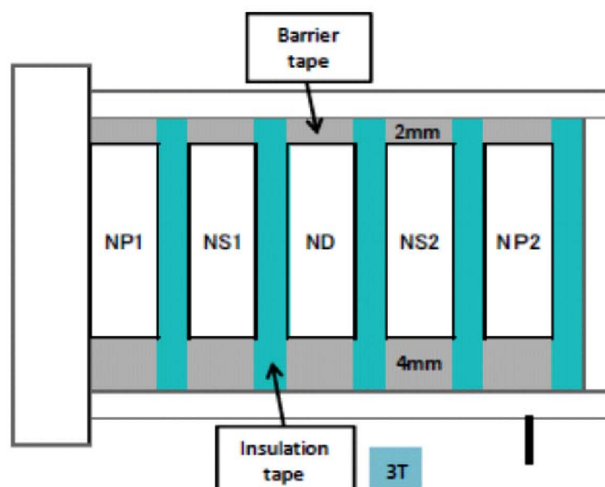
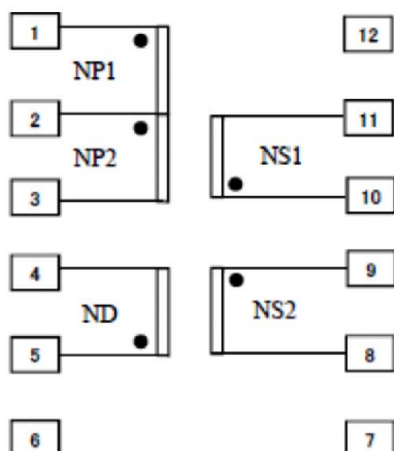
Application Information

IC Product Name	BM1P061FJ
Control Method	PWM
Input	85 Vac to 132 Vac
Output	24V 3A
Type	Isolation
Document Number	1-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: 85.6 nH/N²

Inductance(1-3pin): 0.077 mH±15%

Coil	Terminal	Turns	Wire	Winding Method
NP1	'1-2	15	2UEW 0.5 × 2	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	15	2UEW 0.5 × 2	1 Layer FIT

P_o=72W

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

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	220uF/250V	KXJ 220uF 250V	Nippon Chemi-con
C4	2200pF/500V	CK45-B3AD222KY*N	TDK
C5	100pF/500V	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	400V/10A	D10XB80	Shindengen
D1	400V/1A	1N4007	
D2	400V/1A	1N4007	
D3	FRD 600V/0.5A	RFN1L6S	Rohm
D4	60V/1A	RB160L-60	Rohm
D5	FRD 200V/0.5A	RF05VA2S/RF05VAM2S	Rohm
D6	FRD 200V/20A	RF2001T2D/RFN20T2D	Rohm
F1	3.15A		
FL1		HF2430-322Y2R0	TDK
IC1		BM1P061FJ	Rohm
IC2		TL431	
PC1		PC817	SHARP
Q1	500V/13A	ZDX130N50/R5011ANX	Rohm
R3	10k Ω	MCR18EZPJ104	Rohm
R4	3.9M Ω /0.25W	MCR18EZPJ395	Rohm
R5	39k Ω	MCR10EZPJ393	Rohm
R6	200k Ω /2W		
R7	22 Ω /0.25W	MCR18EZPJ220	Rohm
R8	150 Ω	MCR10EZPJ151	Rohm
R9	100k Ω	MCR10EZPJ104	Rohm
R10	0.1 Ω /1W		
R11	1k Ω	MCR10EZPJ102	Rohm
R12	10 Ω /0.25W	MCR18EZPJ100	Rohm
R15	2k Ω	MCR10EZPJ202	Rohm
R16	1k Ω	MCR10EZPJ102	Rohm
R17	120k Ω	MCR10EZPF1203	Rohm
R18	9.1k Ω	MCR10EZPF9101	Rohm
R19	15k Ω	MCR10EZPF1502	Rohm
R20	1k Ω	MCR10EZPJ102	Rohm
R23	short		
R24	10k Ω	MCR18EZPJ104	Rohm
R25	4.7k Ω	MCR10EZPJ472	Rohm
T1	EER28L		Tomita

Typical Characteristics

Vin:AC85V 50Hz

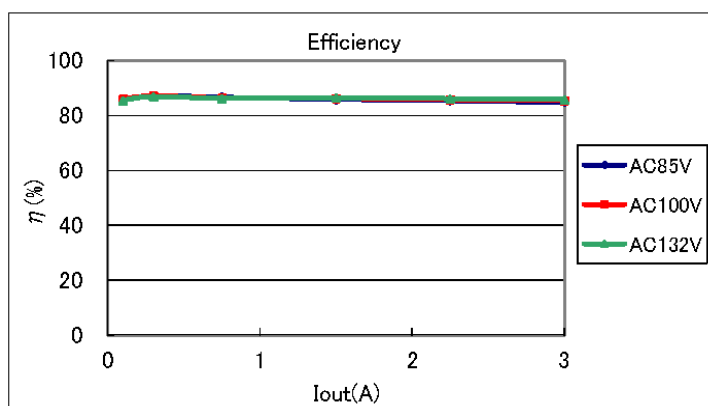
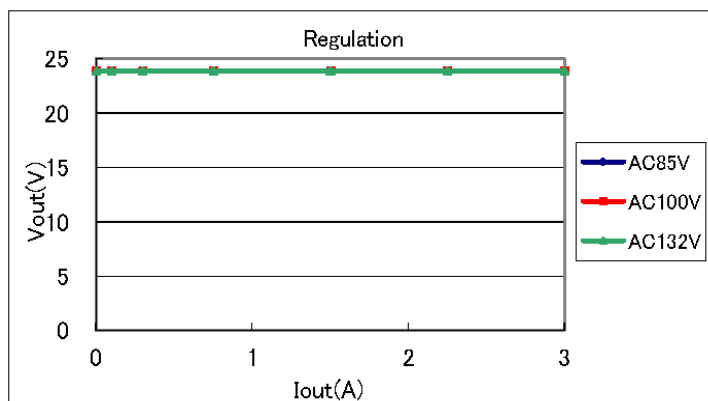
Iout(A)	Vout(V)	Pout(W)	Pin(W)	η (%)
0	23.92	0	0.059	-
0.1	23.92	2.392	2.786	85.8
0.3	23.92	7.175	8.233	87.1
0.75	23.91	17.93	20.70	86.6
1.5	23.91	35.87	41.74	85.9
2.25	23.91	53.80	63.01	85.4
3	23.91	71.72	84.57	84.8

Vin:AC100V 50Hz

Iout(A)	Vout(V)	Pout(W)	Pin(W)	η (%)
0	23.92	0	0.061	-
0.1	23.92	2.392	2.781	86.0
0.3	23.92	7.175	8.228	87.2
0.75	23.91	17.93	20.76	86.4
1.5	23.91	35.87	41.59	86.2
2.25	23.91	53.80	62.73	85.8
3	23.91	71.72	84.03	85.4

Vin:AC132V 50Hz

Iout(A)	Vout(V)	Pout(W)	Pin(W)	η (%)
0	23.92	0	0.072	-
0.1	23.92	2.392	2.796	85.5
0.3	23.92	7.175	8.255	86.9
0.75	23.91	17.93	20.79	86.3
1.5	23.91	35.87	41.51	86.4
2.25	23.91	53.79	62.43	86.2
3	23.91	71.72	83.52	85.9



<待機時電力> 抵抗負荷にて測定

Vin:AC100V/50Hz時

RL(k Ω)	Vout(V)	Iout(mA)	Pout(W)	Pin(W)	η (%)
47	23.92	0.509	0.012	0.071	17.1
1.8	23.92	13.29	0.318	0.423	75.1

Revision History

Date	Revision	Changes
7.Mar.2014	001	New Release

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(Note1) Medical Equipment Classification of the Specific Applications

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

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