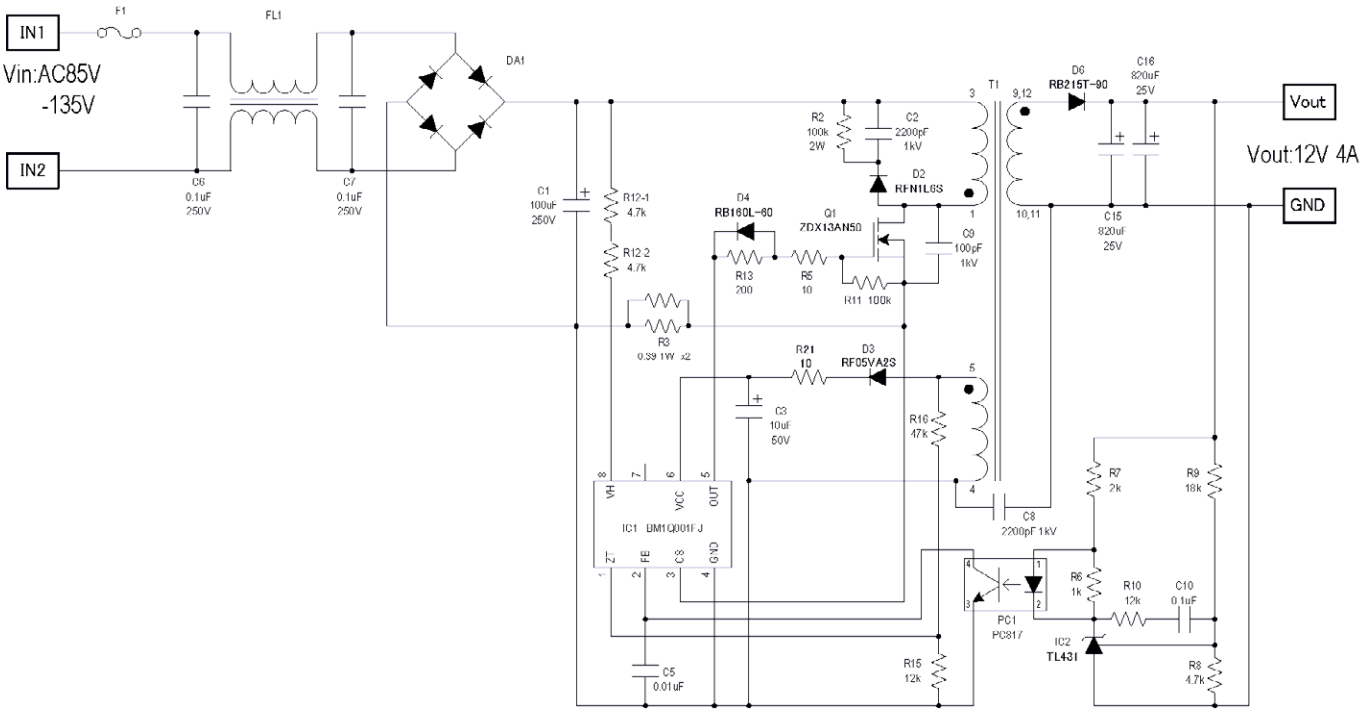
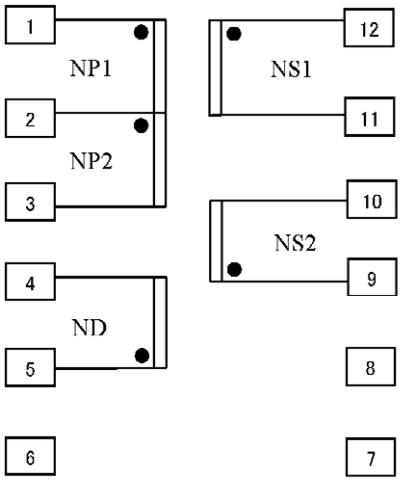
AC/DC Converter Controller Application Information

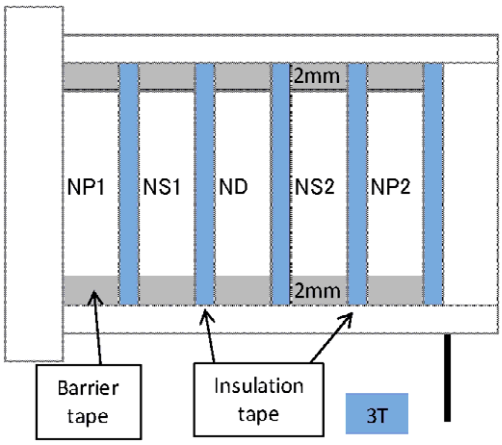
IC Product Name	BM1Q001FJ
Control Method	QR
Input	85 Vac to 135 Vac
Output	12V 4A
Type	Isolation
Document Number	1-I-1200400-0000-00
Revision	001

Reference Circuit



Transformer Specification





Core: JFE EER-28.5A MB3 or compatible
Bobbin: JFE BER28.5SP12 Vertical/Terminal Pins 6-6(12pins) or compatible
AL-Value= 112 nH/N^2
LP(1-3pin)= 0.280 mH±15%

Coil	Terminal	Turns	Wire	Winding Method
NP1	‘1-2	25	2UEW Φ0.45	1 Layer FIT
NS1	‘12-11	8	2UEW Φ0.45x3	1 Layer FIT
ND	‘5-4	10	2UEW Φ0.45x2	1 Layer FIT
NS2	‘9-10	8	2UEW Φ0.45x3	1 Layer FIT
NP2	‘2-3	25	2UEW Φ0.45	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

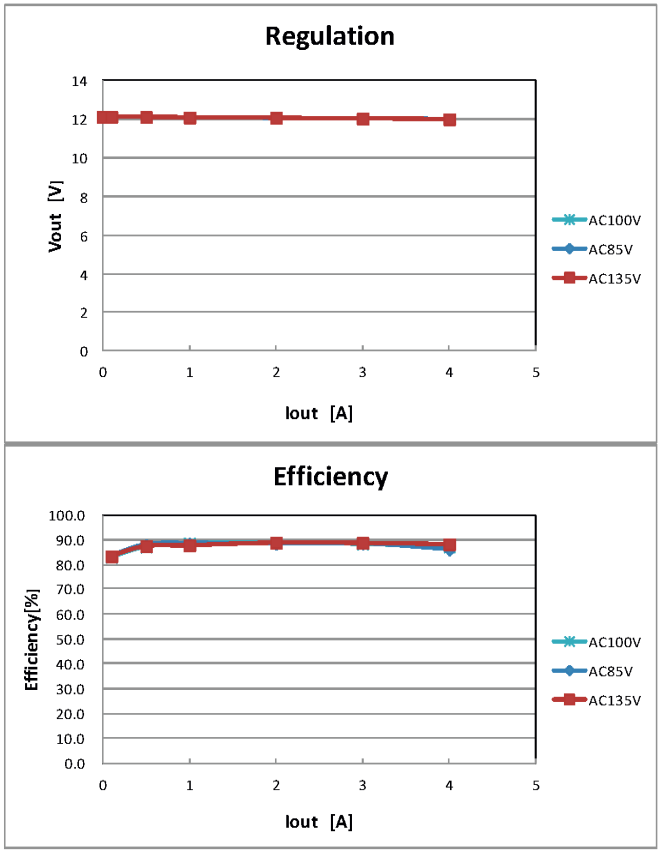
Po=48W

Bill of Materials

Item	Spec	Parts name	Maker
C1	100uF/250V		
C2	2200pF/1kV		
C3	10uF/50V		
C5	0.01uF/16V		
C6	X-Cap 0.1uF		
C7	X-Cap 0.1uF		
C8	Y-Cap 2200pF/1kV	CS11-E2GA222MYNS	TDK
C9	100pF/1kV		
C10	0.1uF/25V		
C15	Low-Z 820uF/25V		
C16	Low-Z 820uF/25V		
DA1		D10XB80	Shindengen
D2	FRD 500V/0.5A	RFN1L6S	Rohm
D3	FRD 200V/0.5A	RF05VA2S/RF05VAM2S	Rohm
D4	30V/1A	RB160L-60	Rohm
D6	SBD 90V/20A	RB215T-90	Rohm
F1		3.15A	
FL1		HF2430-322Y2R0	TDK
IC1		BM1Q001FJ	Rohm
IC2		TL431	
PC1		PC817	SHARP
Q1	500V/6A	ZDX13AN50	Rohm
R2	100kΩ/2W		
R3	0.39Ω/1W　(2 ﾊﾟﾗ)		
R5	10Ω/0.25W	MCR18EZPJ100	Rohm
R6	1kΩ	MCR10EZPJ102	Rohm
R7	2kΩ	MCR10EZPJ202	Rohm
R8	4.7kΩ	MCR10EZPF4701	Rohm
R9	18kΩ	MCR10EZPF1802	Rohm
R10	12kΩ	MCR10EZPJ123	Rohm
R11	100kΩ	MCR10EZPJ104	Rohm
R12-1	4.7kΩ	MCR10EZPJ472	Rohm
R12-2	4.7kΩ	MCR10EZPJ472	Rohm
R13	200Ω	MCR10EZPJ201	Rohm
R15	12kΩ	MCR10EZPJ123	Rohm
R16	47kΩ	MCR10EZPJ473	Rohm
R21	10Ω/0.25W	MCR18EZPJ100	Rohm
T1	EER28		Tomita

Typical Characteristics

Vin	Io [A]	Vo [V]	Pout [W]	Pin [W]	Eff. [%]
AC85V 50Hz	0	12.1357	0	0.044	–
	0.1	12.1328	1.21328	1.451	83.6
	0.5	12.1214	6.0607	6.884	88.0
	1	12.1078	12.1078	13.67	88.6
	2	12.08	24.16	27.33	88.4
	3	12.0551	36.1653	40.86	88.5
	4	12.0257	48.1028	55.85	86.1
AC100V 50Hz	0	12.1359	0	0.046	–
	0.1	12.1331	1.21331	1.46	83.1
	0.5	12.1221	6.06105	6.944	87.3
	1	12.109	12.109	13.64	88.8
	2	12.0817	24.1634	27.21	88.8
	3	12.0547	36.1641	40.93	88.4
	4	12.0285	48.114	55.11	87.3
AC135V 50Hz	0	12.136	0	0.055	–
	0.1	12.1329	1.21329	1.452	83.6
	0.5	12.1209	6.06045	6.925	87.5
	1	12.1066	12.1066	13.781	87.8
	2	12.0774	24.1548	27.15	89.0
	3	12.0473	36.1419	40.69	88.8
	4	12.0178	48.0712	54.43	88.3



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
CLASSⅢ	CLASSⅢ	CLASSⅡb	CLASSⅢ
CLASSⅣ		CLASSⅢ	

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