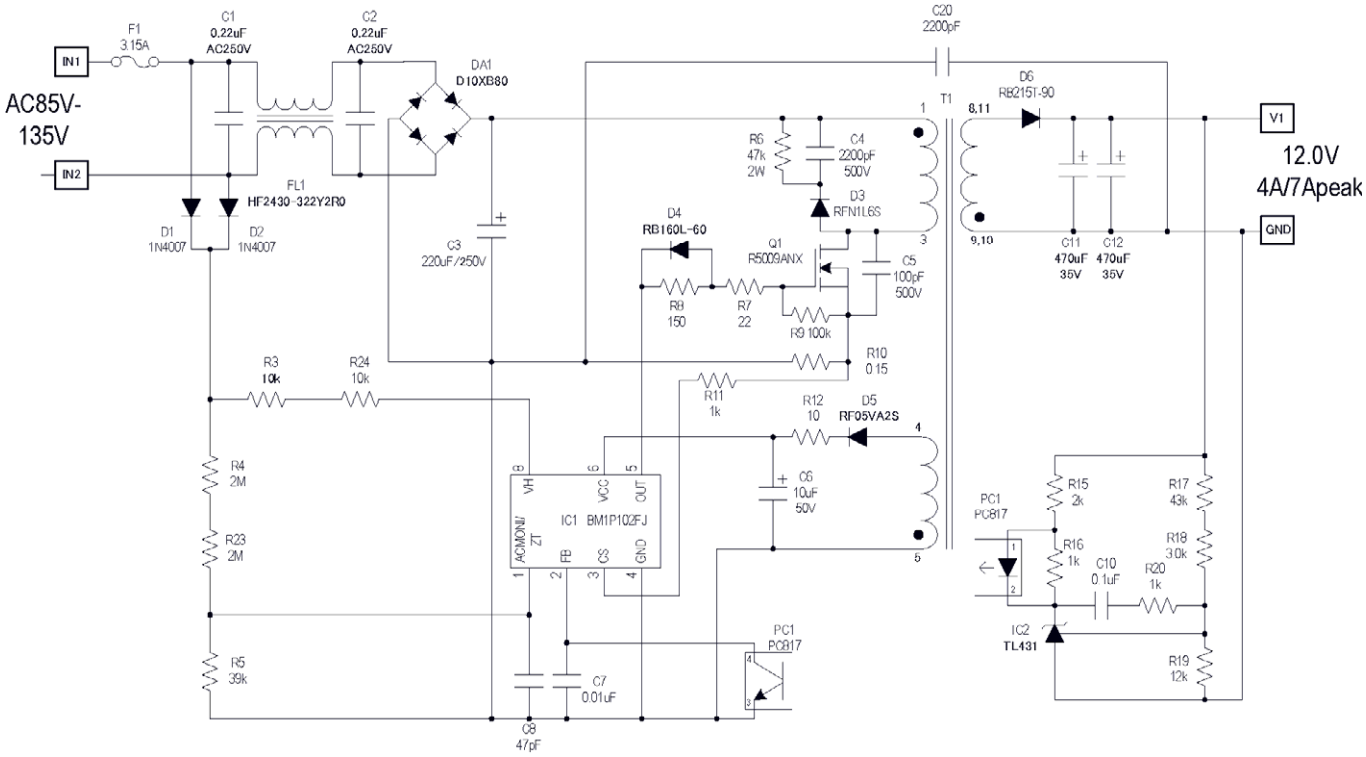
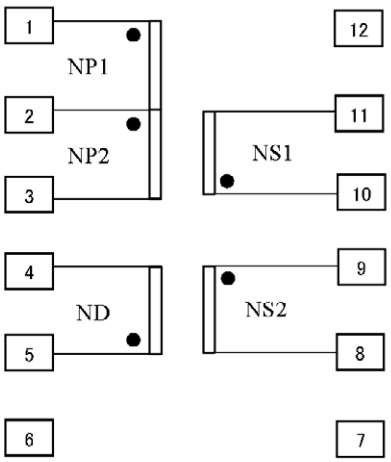
AC/DC Converter Controller Application Information

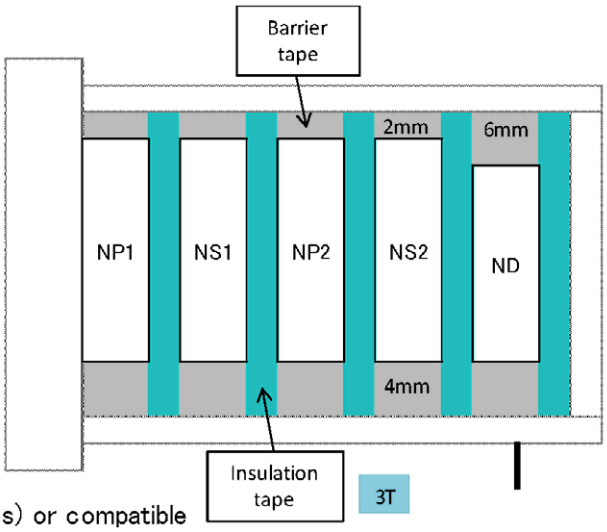
IC Product Name	BM1P102FJ
Control Method	PWM
Input	85 Vac to 135 Vac
Output	12.0V 4A (7Apeak)
Type	Isolation
Document Number	1-I-1200400-0002-00
Revision	001

Reference Circuit



Transformer Specification





Core: JFE MB3 EER-28.5A or compatible

Bobbin: JFE BER28.5SP12 Vertical/Terminal Pins 6-6(12pins) or compatible

AL-Value: 125.9 nH/N^2

Inductance(1-3pin): 0.290 mH±15%

Coil	Terminal	Turns	Wire	Winding Method
NP1	‘1-2	24	2UEW 0.4	1 Layer FIT
NS1	‘10-11	12	2UEW 0.4×2	1 Layer FIT
NP2	‘2-3	24	2UEW 0.4	1 Layer FIT
NS2	‘9-8	12	2UEW 0.4×2	1 Layer FIT
ND	‘5-4	14	2UEW 0.4	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

Bill of Materials

Item	Spec	Parts name	Maker
C1	0.22uF/AC250V X-Cap		
C2	0.22uF/AC250V X-Cap		
C3	220uF/250V		
C4	2200pF/1kV		
C5	100pF/500V		
C6	10uF/50V		
C7	0.01F/16V		
C8	47pF/16V		
C10	0.1uF/50V		
C11	470uF/35V Low-Z		
C12	470uF/35V Low-Z		
C20	2200pF/1kV		
DA1	800V/10A	D10XB80	Shindengen
D1	800V/1A	1N4007	
D2	800V/1A	1N4007	
D3	FRD 500V/0.5A	RFN1L6S	Rohm
D4	30V/1A	RB160L-60	Rohm
D5	FRD 200V/0.5A	RF05VA2S/RFN05VAM2S	Rohm
D6	SBD 90V/20A	RF2001T2D/RFN20T2D	Rohm
F1		3.15A	
FL1			
IC1		BM1P102FJ	Rohm
IC2		TL431	
PC1		PC817	SHARP
Q1	500V/8A	R5008ANX	Rohm
R3	10kΩ	MCR18EZPJ104	Rohm
R4	2MΩ/0.25W	MCR18EZPJ205	Rohm
R5	39kΩ	MCR10EZPJ393	Rohm
R6	47kΩ/2W	100kΩ//100kΩ パラ	
R7	22Ω/0.25W	MCR18EZPJ220	Rohm
R8	150Ω	MCR10EZPJ151	Rohm
R9	100kΩ	MCR10EZPJ104	Rohm
R10	0.15Ω/1W	0.39Ω//0.22Ω パラ	
R11	1kΩ	MCR10EZPJ102	Rohm
R12	10Ω/0.25W	MCR18EZPJ100	Rohm
R15	2kΩ	MCR10EZPJ202	Rohm
R16	1kΩ	MCR10EZPJ102	Rohm
R17	43kΩ	MCR10EZPF4302	Rohm
R18	3.0kΩ	MCR10EZPJ302	Rohm
R19	12kΩ	MCR10EZPF1202	Rohm
R20	1kΩ	MCR10EZPJ102	Rohm
R23	2MΩ/0.25W	MCR18EZPJ205	Rohm
R24	10kΩ	MCR18EZPJ104	Rohm
T1	EER28		

Revision History

Date	Revision	Changes
7.Mar.2014	001	New Release

AC/DC Design Library Disclaimer

1. ROHM's site terms and conditions of use on our website shall apply to you and your utilization of this "AC/DC Design Library" ("Tools").

2. The Tools attempt to support users who develop products and/or components incorporating ROHM's products, but any information contained in this Tools, including, but not limited to, reference circuit, simulation result and bill of materials ("Information") is solely for the purpose of reference, not for the purpose of exemplification or recommendation.
   ROHM does not warrant that any Information will meet your input-output specifications, will be suitable for your application, or will operate as shown in the simulation in a real equipment used for particular purposes.
   ROHM ASSUMES NO LIABILITY FOR ANY DAMAGES WHATSOEVER ARIGING OUT OF THE TOOLS OR INFORMATION CONTAINED IN THE TOOLS.
   You are solely responsible for all respects of design, development and production for your own products, including but not limited to: designing a final products or components; verifying and testing such final products or components under actual operating conditions and applicable circumstances; determining the appropriateness of the use of Information in such final products or components; evaluating and determining the applicability of any Information.

3. The Tools and Information are provided for use AS-IS basis.
   ROHM SHALL NOT, EXPRESSLY OR IMPLIEDLY, MAKE ANY WARANNTY OF ANY KIND INCLUDING BUT NOT LIMITED TO WARRANTIES OF AVAILABILITY, FUNCTIONALITY, CORRECTNESS, MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE.

4. While this Tools run a simulation or carry out an operation through public information and specifications, the Information may not be current at the time of simulation.
   ROHM does not warrant the nowness, accuracy and completeness of the Information.

5. All Information is for reference only. ROHM does not warrant that the Information will not infringe any intellectual property rights or any other rights of any third party.
   ROHM SHALL NOT BE IN ANY WAY RESPONSIBLE OR LIABLE FOR INFRINGEMENT OF ANT INTELLECTUAL PROPERTY RIGHTS OR OTHER DAMAGES ARISING FROM USE OF SUCH INFORMATION.
   No license, expressly or implied, is granted hereby under any intellectual property rights or other rights of ROHM or any third parties with respect to the Information.

6. Except for specific applications as expressly stated in ROHM's data sheet, ROHM's products described in Tools are designed and manufactured for application in ordinary electronic equipments (such as AV equipment, OA equipment, telecommunication equipment, home electronic appliances, amusement equipment, etc.).
   If you intend to use ROHM's products in devices requiring extremely high reliability (such as medical equipment(Note 1), transport equipment, traffic equipment, aircraft/spacecraft, nuclear power controllers, fuel controllers, car equipment including car accessories, safety devices, etc.) and whose malfunction or failure may cause loss of human life, bodily injury or serious damage to property ("Specific Applications"), please consult with ROHM sales representative in advance.
   UNLESS OTHERWISE AGREED IN WRITING BY ROHM IN ADVANCE, ROHM SHALL NOT BE IN ANY WAY RESPONSIBLE OR LIABLE FOR ANY DAMAGES, EXPENSES OR LOSSES INCURRED BY YOU OR THIRD PARTIES ARISING FROM THE USE OF ANY ROHM'S PRODUCTS OR INFORMATION FOR SPECIFIC APPLICATIONS.

(Note1) Medical Equipment Classification of the Specific Applications

JAPAN	USA	EU	CHINA
CLASSⅢ	CLASSⅢ	CLASSⅡb	CLASSⅢ
CLASSⅣ		CLASSⅢ	

7. Any system embedding electronic devices can fail or malfunction at a certain rate.
   Please be sure to implement, at your own responsibilities, adequate safety measures including but not limited to fail-safe design against the physical injury, damage to any property, to or for your products, components and applications.

8. In no event shall you use in any way whatsoever the products described in the Tools and the Information for any military purposes, including but not limited to, the development of mass-destruction weapons.

9. ROHM reserves the right to modify, improve or otherwise change its products and/or Information in Tools, or to cease or terminate this web simulation services without prior written notice.
   Before purchasing or using ROHM's products, you must refer to and comply with the latest version of all related technical information for products.