

AC80V to AC138V input, 18W output

Isolated AC/DC converter

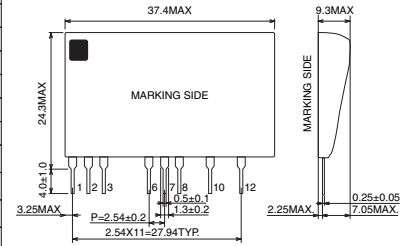
BP5717

Absolute Maximum Ratings

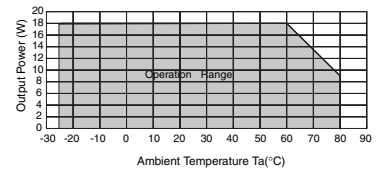
(Ta=25°C)

Parameter	Symbol	Limits	Unit	Conditions
12-pin input voltage	V _D	480	V	
12-pin input current	I _D	1	Apk	
10-pin input voltage	V _H	400	V	
7-pin input voltage	V _{CC}	30	V	
6-pin input current	I _{sozcd}	-2.0	mA	
	I _{sizcd}	+3.0	mA	
1-pin input current	I _{pc}	10	mA	
Maximum power	P _o	18	W	113V to 195VDC (about 80 to 138VAC)
Withstanding voltage	V _I	2.5	kV	1sec (between primary and secondary)
Allowable maximum surface temperature	T _{cmax}	105	°C	(Ambient temperature + the module self-heating) ≤ T _{cmax}
Operating temperature range	T _{opr}	-25 to +80	°C	
Storage temperature range	T _{stg}	-30 to +105	°C	

Dimensions (Unit : mm)



Derating Curve



Electrical Characteristics

<12V output>

(Unless otherwise noted, V_i=141V, rated load Ta=25°C)

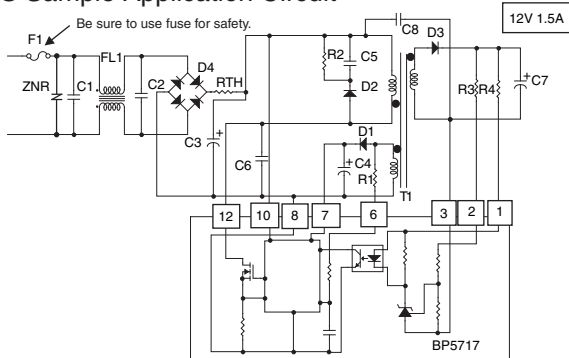
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Output voltage	V _o	11.4	12.0	12.6	V	I _o =1500mA
Output current	I _o	0	-	1500	mA	*1
Line regulation	V _r	-	2	200	mV	V _i =113V to 195VDC I _o =1500mA
Load regulation	V _l	-	5	200	mV	I _o =50 to 1500mA
Output ripple voltage	V _p	-	55	500	mVpp	I _o =1500mA *2
Power conversion efficiency	η	82	87	-	%	I _o =1500mA

*1: Maximum output current must be reduced by ambient temperature.

*2: An output ripple voltage sometimes changes in capacitor to use, the measurement environment.

Especially right attention has to be paid to aluminum electrolytic capacitor, because ESR changes greatly at the time of the low temperature and output voltages increase.

Sample Application Circuit

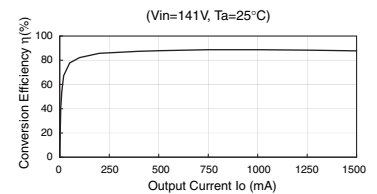


Pin No.	Name	Function
1	PC	Secondary-Side Photocoupler Current Supply Pin
2	V _o	Secondary Output Voltage Control Pin. Connect the output smoothing capacitor between GND.
3	GND	GND Pin for Secondary Output
6	ZCD	Zero-Current Adjustment Pin
7	V _{cc}	Internal Power Supply Pin
8	V _{in(-)}	Primary Input (Negative) Pin
10	V _H	Startup Pin
12	V _D	Drain Pin for Internal FET. Connect to the primary windings of the external transformer.

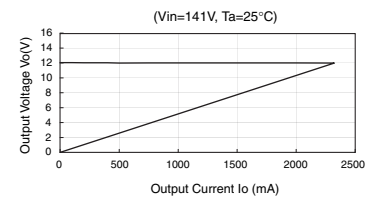
External Component Settings

C1, C2: EMI Capacitor for AC Line	0.1 to 0.22μF/AC250V
C3: Input smoothing capacitor	47μF / 250V
C4: V _{cc} smoothing capacitor	10μF / 50V low impedance
C5: Noise reduction capacitor	2200pF / 1kV
C6: Quasi-resonance capacitor	Use if necessary
C7: Output smoothing capacitor	1000μF / 35V×2 low impedance, Rated ripple current 5.5Arms.
C8: Noise reduction capacitor	2200pF/AC250V
D1: Rectifier diode	FRD 200V/0.5A
D2: Rectifier diode	600V/1A
D3: Rectifier diode	60V/20A
D4: Diode bridge	400V/1A
R1: Zero-Current Adjustment Resistor	47kΩ±1% 0.125W
R2: Snubber Resistor	200kΩ±5% 3Ω Rated at 300V or higher
R3: Output voltage setting resistor	69.2Ω (68kΩ + 1.2kΩ) ±1% 0.125W
R4: PC Current-Limiting Resistor	910Ω ±1% 0.125W
T1: Switching transformer	-
F1: Fuse	Be sure to use this for safety
FL1: EMI Filter for AC Line	-
ZNR: Varistor	Be sure to use this for safety
RTH: Thermistor	Use if necessary

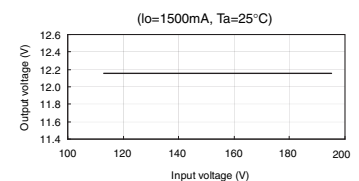
Conversion Efficiency



Load Regulation



Line Regulation



Notes

No copying or reproduction of this document, in part or in whole, is permitted without the consent of ROHM Co.,Ltd.

The content specified herein is subject to change for improvement without notice.

The content specified herein is for the purpose of introducing ROHM's products (hereinafter "Products"). If you wish to use any such Product, please be sure to refer to the specifications, which can be obtained from ROHM upon request.

Examples of application circuits, circuit constants and any other information contained herein illustrate the standard usage and operations of the Products. The peripheral conditions must be taken into account when designing circuits for mass production.

Great care was taken in ensuring the accuracy of the information specified in this document. However, should you incur any damage arising from any inaccuracy or misprint of such information, ROHM shall bear no responsibility for such damage.

The technical information specified herein is intended only to show the typical functions of and examples of application circuits for the Products. ROHM does not grant you, explicitly or implicitly, any license to use or exercise intellectual property or other rights held by ROHM and other parties. ROHM shall bear no responsibility whatsoever for any dispute arising from the use of such technical information.

The Products specified in this document are intended to be used with general-use electronic equipment or devices (such as audio visual equipment, office-automation equipment, communication devices, electronic appliances and amusement devices).

The Products specified in this document are not designed to be radiation tolerant.

While ROHM always makes efforts to enhance the quality and reliability of its Products, a Product may fail or malfunction for a variety of reasons.

Please be sure to implement in your equipment using the Products safety measures to guard against the possibility of physical injury, fire or any other damage caused in the event of the failure of any Product, such as derating, redundancy, fire control and fail-safe designs. ROHM shall bear no responsibility whatsoever for your use of any Product outside of the prescribed scope or not in accordance with the instruction manual.

The Products are not designed or manufactured to be used with any equipment, device or system which requires an extremely high level of reliability the failure or malfunction of which may result in a direct threat to human life or create a risk of human injury (such as a medical instrument, transportation equipment, aerospace machinery, nuclear-reactor controller, fuel-controller or other safety device). ROHM shall bear no responsibility in any way for use of any of the Products for the above special purposes. If a Product is intended to be used for any such special purpose, please contact a ROHM sales representative before purchasing.

If you intend to export or ship overseas any Product or technology specified herein that may be controlled under the Foreign Exchange and the Foreign Trade Law, you will be required to obtain a license or permit under the Law.



Thank you for your accessing to ROHM product informations.
More detail product informations and catalogs are available, please contact us.

ROHM Customer Support System

<http://www.rohm.com/contact/>