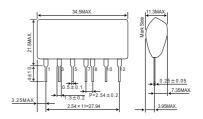
# AC100V input, -15V/800mA output

#### Absolute Maximum Ratings

Parameter	Symbol	Limits	Unit
Input voltage	Vi	-190	V
Output current	lo	800	mApk
ESD endurance	Vsurge	2	kV
Operating temperature range	Topr	−20 <b>~</b> +80	°C
Storage temperature range	Tstg	−25 <b>~</b> +105	°C

#### Dimension(Unit : mm)

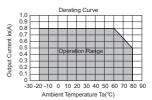


#### Electrical Characteristics

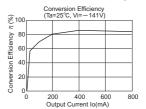
Parameter	Symbol	Min.	Тур.	Max.	Unit	Conditions
Input voltage range	Vi	-162	-141	-120	V	DC(85~115VAC)
Output voltage	Vo	-16	<b>-15</b>	-14	V	Vi=-141V, Io=800mA
Output current	lo	0	_	800	mA	Vi=-141V * 1
Line regulation	Vr	_	0.20	0.45	V	Vi=−120~−162V, Io=800mA
Load regulation	VI	_	0.50	0.75	V	Vi=−141V, Io=0~800mA * 2
Output ripple voltage	Vp	_	0.15	0.30	Vp-p	Vi=-141V, Io=800mA
Power conversion effciency	η	80	85	_	%	Vi=-141V, Io=800mA *2

- ${\rm *\,1\,Maximum\,output\,current\,varies\,depending\,on\,ambient\,temperature\,;} please\,refer\,to\,derating\,curve.$
- \*2 Please refer to Load regulation, Conversion effciency.

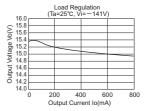
# Derating Curve



#### Conversion Efficiency

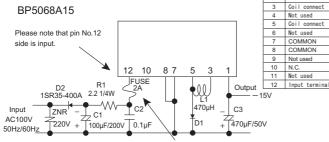


#### Load Regulation



# Application circuit

#### BP5068A15



Especially, Please make sure to confirm the load current does not exceed Max. rated current by using the current probe.

### External components setting

voltage smoothing

FUSE: Fuse C1: Capacitor for input

L1: Choke coil

Please make sure to use quick acting fuse 2A

Capacitance : 47μF~220μF Rated voltage : 200V or higher

Output terminal Vo(-15V)

Not used

Ripple current is 0.22Arms above.

C2: For noise terminal Capacitance :  $0.1\mu F \sim 0.22\mu F$  Rated voltage : 200V or higher voltage reduction Film capacitor or ceramic capacitor. Reduce the noise terminal voltage.

The constant value should be evaluated in the set.

Capacitance: 330µF~1000µF Rated voltage: 25V or higher, C3: Capacitor for Output voltage smooting

ESR is 0.08 max. Ripple current is 1Arms above.

Output noise voltage is influenced, Please evaluate it in the actual set. D1: Flywheel diode Please use the first recovery diode that reverse peak voltage is 400V or higher, and the avarage rectifying current is 3A or higher. That switching

characteristic and efficiency of our module is influenced by this diode characteristic, please use 31DF4(Nihon inter), or RV30(Sanken).

D2: Rectifier diode In the absolute maximum ratings, the reverse peak voltage should be 400V or higher, the average rectifying current should be 1A or higher,

and the peak surge current should be 20A or higher. (Full-wave rectifier can be used in our part.)

Coil for switching regulator. The inductance should be 470µH, the rated direct current should be 1.6A above. Otherwise heating or

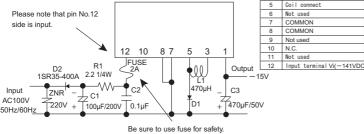
abnormal oscilation occurs. 1.0 ~2.2 1/4W

R1: For noise terminal voltage reduction

Reduce the noise terminal voltage. The constant value should be evaluated

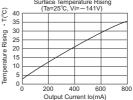
Varistor must be used. It protects this part from lightning surge and static ZNR: Varistor

electricity.



For acutual usage, Please kindly evaluate and confirm our part mounted in your product,

# Surface Temperature Rising



# Precautions on Use of ROHM Power Module

## **Safety Precautions**

- 1) The products are designed and produced for application in ordinary electronic equipment (AV equipment, OA equipment, telecommunication equipment, home appliances, amusement equipment etc.). If the products are to be used in devices requiring extremely high reliability (medical equipment, transport equipment, aircraft/spacecraft, nuclear power controllers, fuel controllers, car equipment including car accessories, safety devices, etc.) and whose malfunction or operational error may endanger human life and sufficient fail-safe measures, please consult with the Company's sales staff in advance. If product malfunctions may result in serious damage, including that to human life, sufficient fail-safe measures must be taken, including the following:
  - [a] Installation of protection circuits or other protective devices to improve system safety
  - [b] Installation of redundant circuits in the case of single-circuit failure
- 2) The products are designed for use in a standard environment and not in any special environments. Application of the products in a special environment can deteriorate product performance. Accordingly, verification and confirmation of product performance, prior to use, is recommended if used under the following conditions:
  - [a] Use in various types of liquid, including water, oils, chemicals, and organic solvents
  - [b] Use outdoors where the products are exposed to direct sunlight, or in dusty places
  - [c] Use in places where the products are exposed to sea winds or corrosive gases, including CI2, H2S, NH3, SO2, and NO2
  - [d] Use in places where the products are exposed to static electricity or electromagnetic waves
  - [e] Use in proximity to heat-producing components, plastic cords, or othe flammable items
  - [f] Use involving sealing or coating the products with resin or other coating materials
  - [g] Use involving unclean solder or use of water or water-soluble cleaning agents for cleaning after soldering
  - [h] Use of the products in places subject to dew condensation
- 3) The products are not radiation resistant.
- 4) The Company is not responsible for any problems resulting from use of the products under conditions not recommended herein.
- 5) The Company should be notified of any product safety issues. Moreover, product safety issues should be periodically monitored by the customer.

# Precautions Regarding Application Example and External Circuits

- 1) If change is made to the constant of an external circuit, allow a sufficient margin due to variations of the characteristics of the products and external components, including transient characteristics, as well as static characteristics. Please be informed that the Company has not conducted investigations on whether or not particular changes in the application examples or external circuits would result in the infringement of patent rights of a third party.
- 2) The application examples, their constants, and other types of information contained herein are applicable only when the products are used in accordance with standard methods.
  - Therefore, if mass production is intended, sufficient consideration to external conditions must be made.

# Prohibitions Regarding Industrial Property

- 1) These Specifications contain information related to the Company's industrial property. Any use of them other than pertaining to the usage of appropriate products is not permitted. Duplication of these Specifications and its disclosure to a third party without the Company's permission is prohibited.
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  - [a] infringement of the intellectual property rights of a third party
  - [b] any problems incurred by the use of the products listed herein.
- 3) The Company prohibits the purchaser of its products to exercise or use the intellectual property rights, industrial property rights, or any other rights that either belong to or are controlled by the Company, other than the right to use, sell, or dispose of the products.

